PROPOSED LIQUEFIED NATURAL GAS (LNG) REGASIFICATION TERMINAL LOCATED ON THE SOUTHERN SHORE OF THE SHANNON ESTUARY IN THE TOWNLANDS OF RALAPPANE AND KILCOLGAN LOWER, CO. KERRY

HEARD BEFORE THE INSPECTOR, MR. ANDREW BOYLE ON TUESDAY, 22ND JANUARY, 2008 AT THE BRANDON HOTEL, TRALEE, CO. KERRY - DAY 2

I hereby certify the following to be a true and accurate transcript of recordings of the evidence in the above-named action.

2

APPEARANCES

KERRY COUNTY COUNCIL: MR. T. SHEEHY

FOR THE APPLICANT

(SHANNON LNG): MR. HUGH O'NEILL SC

MR. JARLATH FITZSIMONS BL

INSTRUCTED BY: NI COLA DUNLEAVY

SOLI CI TOR

MATHESON ORMSBY PRENTICE

J. McELLI GOTT GRIFFIN **OBJECTORS:**

MS.

NOEL LYNCH JOAN MURPHY MR. MS.

DONNCHA FINUCANE EILEEN O'CONNOR MR. MS. MS. EILEEN O'CONNOR
MR. E. MCELLIGOTT
MRS. LILY O'MAHONY
MR. RAYMOND O'MAHONY
MR. TIM MAHONY
MR. THOMAS O'DONOVAN
MR. MICHAEL FINUCANE
MR. RICHARD O'SULLIVAN
MR. DES BRANIGAN

<u>COPYRIGHT</u>: Transcripts are the work of Gwen Malone Stenography Services and they must not be photocopied or reproduced in any manner or supplied or loaned by an appellant to a respondent or to any other party without written permission of Gwen Malone Stenography Services.

I NDEX

<u>WITNESS</u> <u>EXAMI NATI ON</u>	<u>PAGE</u>
MR. G. SHEARER - SUBMISSION	4 - 38
QUESTIONED - OBJECTORS	39 - 91
MR. PADDY POWER - SUBMISSION	97 - 113
MR. O' SULLI VAN (SHANNON DEVELOPMENT)	115 - 117
MR. MICHAEL MCELLIGOTT - SUBMISSION	117 - 122
MR. B. MacINTYRE - SUBMISSION	124 - 141
MS. LYDEN - SUBMISSION	141 - 165
SHANNON LNG WITNESSES QUESTIONED - OBJECTORS	166 - 245

<u>COPYRIGHT</u>: Transcripts are the work of Gwen Malone Stenography Services and they must not be photocopied or reproduced in any manner or supplied or loaned by an appellant to a respondent or to any other party without written permission of Gwen Malone Stenography Services.

1	THE HEARING RESUMED AS FOL	LOWS ON TUESDAY, 22ND JANUARY	_
2	<u>2008</u>		
3			
4			
5	I NSPECTOR:	Good morning everybody,	10: 05
6		I am wondering if we could	
7	take our seats now please.	Yesterday when we left off	
8	we had the Applicants pres	enting their case on the need	
9	for the project, its natio	nal, regional and local	
10	context, consideration of	al ternati ves including	10: 06
11	alternative methods. Mr.	Power had just finished his	
12	presentation and we were g	oing to go on to your next	
13	contributor, I think.		
14	MR. O' NEI LL:	Mr. Shearer is now going to	
15		make a presentation again	10: 06
16	in relation to the needs i	ssue.	
17			
18	MR. GORDON SHEARER ADDRESS	ED THE ORAL HEARING AS	
19	<u>FOLLOWS</u>		
20			10: 07
21	MR. SHEARER:	Mr. Inspector, Ladies and	
22		Gentlemen, good morning.	
23	My name is Gordon Shearer,	I am the President and Chief	
24	Executive Officer of Hess	LNG which is the ultimate	
25	parent company of Shannon	LNG. I just want to say how	10: 07
26	glad I am to be here in Ir	el and and enj oyi ng your	
27	wonderful weather, very se	asonal and I know it's not	
28	like this all the time so	hopefully when I am back in	
29	the summer we will have a	little bit more pleasant	

climate to enjoy.

2

1

3

4

5

6

7

8

I am a director and the chairman of Shannon LNG Ltd. My educational background: I have a Bachelor of Science degree in Geophysics from Edinburgh University and a Masters Degree in Business Administration from Harvard Business School. I am a member of the National Petroleum Council of the United States.

10:07

10: 08

10:08

10:08

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

With in the Hess Corporation I direct and have ultimate 10:07 responsibility for the company's efforts in developing liquefied natural gas terminals, of which we have two active projects, which included the Shannon LNG project. I have broad expertise in the LNG and natural gas industries where I have worked for almost 30 years. I have authored numerous articles on the LNG industry, made numerous at industry conferences. I have been a contributing author to the book "Energy and Security -Towards a New Foreign Policy Strategy" and recently co-authored a booked called "LNG, a non-technical quide" and I am happy to leave a copy of that for the Board if that's appropriate. It's not being introduced as evidence and I am not intending to read it here today.

25 26

27

28

29

Prior to joining the Hess Corporation in 2007 I worked with Poten & Partners for six years and as we saw yesterday Poten is one of the joint venture partners in In 2004 that joint venture was formed and Hess LNG.

I became the Chief Executive. Prior to that, working with Poten, I worked for a company called Cabot Corporation from 1978 to 2001 where I was at the end President and Chief Executive Officer of Cabot LNG Corporation between 1988 until the business was sold in 10:09 By way of background Cabot owned and operated the LNG terminal which has operated in Boston Harbour since 1971, owned the LNG tanker the "Matthew" and was the driving force behind and a 10% shareholder of the Atlantic LNG liquefaction project in Trinidad & Tobago of which company I was a director as well. From 1996 until 2000 I was the vice president of the International Association of LNG Importers. My earlier career included assignments in the company's LNG and exploration, production, pipeline and gas utility 10: 09 busi nesses.

17

18

19

20

21

22

23

24

25

26

27

28

29

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

Let me now describe my involvement with the Shannon LNG project. Hess acquired the project in 2005. I am a direct of Shannon LNG and am intimately involved in many of the decisions relating to the strategic, commercial, technical, financial and regulatory aspects of the development of this project. I was involved in the drafting of the Shannon LNG Environmental Impact Statement, particularly those sections of the EIS addressing the global and Irish market context for the project and the commercial rationale. I also have responsibility for maintaining communication and coordination between the Shannon LNG project, the other

10: 10

10: 10

business interests of Hess LNG and the executive committee of Hess LNG.

3

4

5

6

7

8

9

10

11

12

13

14

1

2

In giving my evidence today I am going to cover the following areas some of which are expanding on material in the EIS, other parts of which are in relation to issues that have been raised in various submittals in the public domain. I will discuss the relationship of Shannon LNG, Hess LNG and the Hess Corporation; Hess' experience in other LNG and energy projects; the international dimensions of the LNG industry; the potential role of LNG in the Irish energy market; the scale and the timing of the project; and then respond to some of the specific comments in the submissions.

10: 11

10: 11

1516

17

18

19

20

21

22

23

24

25

26

27

28

29

First the relationship of Shannon LNG to Hess LNG and Hess Corporation. Shannon LNG is a wholly owned Irish subsidiary of Hess LNG Ltd. and was established to pursue, develop and implement the proposed Shannon LNG Hess LNG Ltd. is registered in the Cayman 10: 11 Islands which affords the company certain tax benefits under the US tax code. Hess LNG Ltd. is a joint venture of Hess Corporation and Poten & Partners, both US companies and highly experienced in the international oil and gas business. Shannon LNG is 10: 11 presently being funded solely through shareholder funds and we expect this would continue for the entire project, although the company may also consider using project or perhaps more precisely non-recourse

1	financing for the construction of the LNG terminal	
2	which is expected to cost about €500 million.	
3		
4	The rationale for a separate subsidiary for the LNG	
5	terminal (as there probably will be for the associated	10: 1
6	pipeline) is also a function of regulatory	
7	requirements. The European Union is seeking Legal	
8	unbundling of gas network operations of which LNG is an	
9	example. As such Shannon LNG should be organised as a	
10	separate legal entity from its affiliates in the gas	10: 1
11	pipeline and LNG supply activities as well as from its	
12	parent companies.	
13		
14	Hess Corporation is a global integrated energy company	
15	engaged in oil and gas exploration and production,	10: 1
16	refining of crude oil and the sale of refined products,	
17	natural gas and electricity. Hess Corporation's stock	
18	is listed in the New York Stock Exchange.	
19		
20	Poten & Partners provides brokerage, consulting and	10: 1
21	project development services related to trading and	
22	transportation of crude oil, petroleum products,	
23	natural gas, LNG, liquefied petroleum gas and other	
24	commodities.	
25		10: 1
26	Let me talk briefly about Hess' energy and LNG	
27	experience. A key consideration in the approval of a	
28	large scale project of this type is the experience of	
29	the project sponsor, in this case Shannon LNG and Hess	

LNG. Hess is a large and successful energy company	
with experience in developing, building and operating	
major energy projects in the international upstream and	
downstream oil and gas businesses. The company has	
assets of \$24 billion, annual cash flow from operations	10: 13
of about \$3.5 billion and invests about \$4 billion each	
year in capital and exploration expenditures. The	
company has the ability to finance the Shannon LNG	
project from internal funds. On the downstream side	
Hess has built one of the largest oil refineries in the	10: 14
western hemisphere in St. Croix in the US Virgin	
Islands and operated that refinery for over 30 years.	
Hess now holds a 50% ownership interest in a joint	
venture that operates this facility. Hess also owns	
and operates a small refinery in Port Reading, New	10: 14
Jersey, not far from New York City. The company	
operates 22 oil terminals, including several that	
accept large oil tankers and almost 1400 branded petrol	
stations throughout the Eastern United States. Hess is	
a leading energy marketer in the US East Coast,	10: 14
providing approximately 1.5 billion cubic feet a day of	
natural gas in addition to fuel oil and electricity to	
over 18,000 customers, commercial and industrial	
mainly, through 14 states.	

10: 14

On the upstream side, Hess operates major, complex oil and gas projects. Examples of which would be the Gassi El Agreb enhanced oil recovery project in Algeria, the Okume Complex in offshore Equatorial Guinea, the

Sinphuhorm Field in Thailand and Seminole-San Andres	
enhanced oil recovery project in West Texas. Hess has	
a long history in the UK and North Sea, which is now	
winding down. In all Hess operates in 20 countries,	
including Malaysia, Australia, Egypt and Azerbaijan.	10: 15
Many of these upstream projects as well as the US	
refineries are considerably more complex and	
challenging than the proposed LNG terminal. Hess is a	
$\operatorname{mi}\operatorname{nori}\operatorname{ty}\operatorname{sharehol}\operatorname{der}\operatorname{in}\operatorname{the}\operatorname{Pi}\operatorname{ne}\operatorname{Needle}\operatorname{LNG}\operatorname{peakshaving}$	
plant in North Carolina, a project somewhat smaller	10: 15
than the Shannon LNG project and obviously missing the	
shipping component. Hess is also a minority	
shareholder in the Snohvit liquefaction plant which is	
now undergoing start-up near Hammerfest in northern	
Norway.	10: 15

But of equal importance to the company's experience is the experience of the personnel who will be developing, building and operating the Shannon LNG project. As you will see from the experience in the resumés of the witnesses who will be presenting evidence over the next few days, Shannon LNG employs a team of seasoned executives with a unique blend of Irish and international experience in LNG and other major energy projects.

10: 16

10: 16

Let me talk briefly about the international dimensions of the LNG industry to set a context for this project with a slightly different perspective perhaps than

1 Mr. Power did yesterday. In this section I am going to 2 focus on my testimony in those section of the EIS in 3 2. 2. 2. 2. 4 and 2. 2. 5. The global LNG industry has 4 witnessed unprecedented growth over the last several years and this is expected to continue through the next 10:16 5 6 several decades. Detailed forecasts of its growth and 7 its driving forces are readily found through a variety 8 of sources including the International Energy Agency, 9 the US Energy Information Administration, which is part 10 of the US Department of Energy, the European 10: 17 11 Commission, various academic and private forecasting 12 entities as well as studies and forecasts published by 13 companies and consultancies in the energy industry. 14 I am going to try and summarise these views briefly 15 here to set the context for the role LNG could play in 10: 17 16 the Irish energy picture and how Shannon LNG will fit 17 that.

18

19

20

21

22

23

24

25

26

27

28

29

The demand for LNG worldwide was traditionally driven by markets which desired to import LNG both as a means to diversify their energy supplies and to meet environmental goals. Those were the driving forces behind the earliest and largest LNG imports in the world, namely those of Japan and South Korea. were also factors perhaps to a lesser degree in the drive for imports into the European markets where France, Italy, Belgium and Spain have long been major LNG importers. These countries either had no access to domestic supplies of natural gas, as was the case for

10: 17

Japan and Korea, or had limited access in the case of the European countries. Today these original LNG countries are being joined by many more, the USA, Canada, Mexico, the UK, Portugal, the Netherlands, Germany, Poland, Greece, Turkey, Cyprus, Chile, Brazil, China and India to name just some of the places that LNG facilities are being developed or have already opened -- all of whom are developing import infrastructure. During the period between 1980 and 2005, the global LNG trade expanded from around 10: 18 3 billion cubic feet per day to 19 billion cubic feet Graphically you can get a sense of the geographical scale from figures 1 and 2 in the testimony there. I am not going to put these up on the power point, they are embedded in the testimony I have 10: 18 presented.

17

18

19

20

21

22

23

24

25

26

27

28

29

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

What is driving this latest surge in the global LNG marketplace? Some of those are similar to that of the early period of the industry, but today the issues tend 10:19 to be more acute. First, countries or regions which have long been self-sufficient in natural gas such as North America, the UK and the Netherlands have experienced falling domestic production in the face of ever rising demand. The demand for natural gas is 10:19 rising on a global basis reflecting its desirability as an economical and environmentally preferred fuel over other fossil fuels such as oil and coal. This increased demand has been especially pronounced in the

power generation sector where natural gas, burned in combined cycle power plants, has proven to be the most cost effective and environmentally preferred means of generating electricity in new power plants. The UK has experienced its "dash for gas" and in the US 90% of the 10:19 power plants built over the last decade have been fueled by natural gas. Another factor driving demand for gas in Canada has been the use of gas as a fuel for the production of crude oil from the tar sands in Alberta which has proven particularly attractive with 10:20 today's high oil prices.

On the supply side, North America has ceased to be self-sufficient in gas supply as the older fields of the continent are depleting and new production is coming more slowly than planned. Many prospective areas for gas exploration in the entire US East and West Coasts, the eastern half of the Gulf of Mexico and wide areas of the Rocky Mountains have been placed off limits for exploration for environmental reasons.

Mexico's domestic energy production efforts have been focussed on crude oil at the expense of gas. As a result LNG is expected to account for 15 to 20% of North American gas supply by 2020 up from almost nothing a decade ago.

10: 20

10:20

10: 20

In Europe, the UK North Sea has experienced significant declines in gas production and domestic supply is continuing to fall. The Netherlands has also seen a

drop in potential gas supply as the Government has reduced the output of the massive Groningen field to preserve its production for future generations. Norway's government has also been reluctant to sanction new gas production more recently in a decision to 10:21 refuse expanded gas deliveries from the giant Troll oil and gas field, the so called Gas Network Expansion. The result has been that Europe has increasingly turned to pipeline supplies from Russia and Algeria to meet the continent's growing gas demand, and the import 10: 21 dependency of Europe as a whole is expected to increase in the next two decades growing to 75% of all gas requirement by 2015. In the Far East, the rapidly growing economies of China and India are also experiencing growing demands for fuels, especially 10: 21 non-oil fossil fuels and both countries are bidding aggressively for LNG supplies.

18

19

20

21

22

23

24

25

26

27

28

29

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

In this evolving global marketplace, the interest in and desire to secure LNG supply has taken on an increasing degree of importance on a global basis. The vast bulk of the world's remaining known gas reserves that can be tapped relatively easily all lie great distances to the major consuming areas. LNG production is rapidly expanding in Qatar, Nigeria, Trinidad, Equatorial Guinea, Egypt, Norway and Australia and continuing steadily in Algeria, Malaysia, Oman and Abu Dhabi, while dropping in Indonesia. New LNG supply projects are under development in Angola, Venezuela,

10: 22

10: 22

1	Peru, Russia, Australia, East Timor, Papua New Guinea
2	and Yemen. Much of this expansion was driven in the
3	late 1990s and early 2000s as falling costs made the
4	liquefaction industry increasingly competitive with
5	other fuel sources. By 2015, LNG supply to the
6	Atlantic basin from current and committed liquefaction
7	plants is expected to reach 50 billion cubic feet per
8	day, almost three times the 2005 level. Shannon LNG's
9	projected LNG demand in 2015 represents less than 1% of
10	the world's total projected supplies.
11	
12	The world has plenty of gas left. Figure 3 shows the

13

14

15

16

17

18

19

20

21

22

23

24

The world has plenty of gas left. Figure 3 shows the world's reserves of natural gas compared to consumption at the end of 2005, that's the same slide that Mr. Power used yesterday. The one that may be more 10: 23 interesting is figure 4 which shows today the world has reserves equal to 63 years of consumption at current What is interesting particularly about that slide is 20 years ago the world had or 25 years ago the world also had 60 years of supply; in other words, as 10: 23 we have consumed natural gas we have been able to replace gas as quickly as we are consuming it. don't need to get into the details of that, but I am happy to discuss that.

25

26

27

28

29

10: 24

10.22

10: 23

While the LNG market is growing, it is also demonstrating an increasing degree of flexibility. Some LNG cargoes are diverted to higher value markets on relatively short notice. However, long-term

1	contracts have underpinned the financing of what is a	
2	very expensive delivery chain and will almost certainly	
3	continue to dominate the LNG market providing both	
4	sellers and buyers with the security they need to	
5	finance their respective investments. In this global	10: 24
6	marketplace the most attractive markets will be those	
7	that offer the highest prices, that are situated	
8	closest to the liquefaction plants, since the marine	
9	transportation of LNG is very expensive, and which can	
10	accommodate the largest LNG tankers and the widest	10: 24
11	range of these tankers.	
12		
13	A second driving force in the LNG market is a desire on	
14	the part of many energy consuming countries to import	
15	LNG as a way of diversifying and improving the security	10: 24
16	of their energy supplies. Europe is acutely sensitive	
17	to this issue, it is heavily dependent on pipeline	
18	imports and has experienced first hand the risk	
19	associated with disruptions to those supplies. The	
20	European Commission produced a Green Paper in 2006	10: 25
21	which under the section titled "A Clear Policy on	
22	Securing Diversifying Energy Supplies" stated:	
23	"Such a policy is possessary for both	
24	"Such a policy is necessary for both the EU as a whole and for specific member states or regions and is clearly	
25		10: 25
26	above mentioned review could propose clearly identified priorities for upgrading and construction of new	
27	upgrading and construction of new infrastructure necessary for the security of EU energy supplies, notably	
28	new gas and oil pipelines and LNG terminals."	
00	ta iii na s.	

1 The UK Government sponsors the Joint Energy Security of 2 Supply Working Group, otherwise known as the JESS, 3 whose report in April 2006 also identified a need for 4 new gas supply infrastructure including LNG terminals. 5 10: 25 6 The final factor influencing the market is natural gas' 7 role in lowering emissions of green house gases specifically CO₂, in an attempt to halt or reduce 8 9 global warming. Especially when employed as fuel for power generation, natural gas has a much lower carbon 10 10: 26 11 footprint than other fossil fuels, especially coal. 12 The early development of the LNG industry was also 13 influenced by gas' environmental benefits, though the 14 benefits were much more focussed on reductions in 15 sulphur dioxide and nitrous oxides and the 10: 26 16 corresponding gains and improvements in air quality. 17 18 This factor influences the entire natural gas market, 19 not just LNG, and with growing focus would be expected to lead to growing worldwide demand for this fuel. 20 10:26 21 22 In summary, the global market is characterised by rapid growth and increasing flexibility. LNG supply is 23 24 available for purchase on a long-term secure basis and 25 can provide the import country with security and 10: 26 26 stability of supply. Prices are increasingly set by 27 worldwide market forces and terminals which provide 28 access to attractive markets and are located reasonably

close to liquefaction plants will be more likely to

29

succeed in securing those long-term supplies. Fortunately, Ireland offers just as a combination of factors as Mr. Power mentioned in his statement and we are very confident that Shannon LNG will be able to secure the supplies it needs to support Ireland's market requirements. I am going to skip much of the next section because it really was covered in detail by Mr. Power yesterday and move on to the scale and timing of the project. Developing an LNG project is a major undertaking even if it only involves, and I say only, the development of

10: 28

10: 27

10:27

10: 27

a regasification terminal. A combination of factors, the size of the ships, the uncertainty of the demand profile and the rate at which it develops, variability in domestic production and the need for storage, apart from that required to operate the terminal, all suggest a phased flexible approach is the best way to proceed. However, we have to emphasise that given the very high cost of each LNG storage tank Shannon LNG will not install more than it feels are absolutely necessary to meet the requirements of the market. Flexibility in timing and scale is a best way to marry the needs of the Irish market and the expectations of the LNG suppliers and that's the approach which Shannon LNG is adopting in this project.

In that regard we have described that the project is

designed to include one or two LNG storage tanks initially with up to four in total by the end of the ten year planning horizon. The initial number of tanks will be driven by the expected size of the tankers delivering LNG. Just by way of explanation clearly if 10: 28 we use a very large tanker the tanks have to be large enough to accept the cargo from that tanker into them. The expected demand profile, especially the daily and seasonal variability for natural gas supply from Shannon LNG, will also be a factor in the number of 10: 29 tanks installed initially as well as the amount of vaporisation capacity. This demand profile will be a function in turn of the growth of the Irish gas market (including the eventual implementation of the all-Ireland market), the timing and production rates 10: 29 from Corrib, any future gas discoveries and the availability of LNG supplies on advantageous terms which could permit short term incremental purchases in excess of long-term supply commitments.

20

21

22

23

24

25

26

27

28

29

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

10: 29

10: 29

In this regard I might mention, Mr. Inspector, you asked yesterday the question as to how this terminal would fit in the scale of world terminals. My comment would be in the initial phase it would be one of the smaller terminals in the world and in its ultimate development it would be somewhere in the middle of the pack, about midsized compared to let's say the terminals in the Far East, compared to several of the US terminals, compared to the terminal in Milford Haven

that we saw yesterday in the video, Shannon LNG is smaller than all of those.

In addition to storage requirements for normal LNG operations, Shannon LNG also anticipates there could be 10:30 a market for separate storage services to be offered to third parties for the development of strategic gas storage to meet national and EU policy goals. The EU Green Paper I mentioned identified the possibility that member states could be required to maintain strategic 10:30 stocks of national gas and the Irish Government is also conducting a review of potential storage requirements for Ireland to ensure supplier reliability.

Now, I would like to turn my comments to respond to some of the issues that were raised in the submissions and I will address those. One comment was raised by the Kilcolgan Residents Association and Ms. O'Connor to the effect that Shannon LNG has no obligation to supply the Irish market the low priced gas.

10: 30

10:31

10: 31

In response I will say we do agree actually that
Shannon LNG like all other gas suppliers is under no
obligation to supply gas to the Irish market at any
particular price, that is a function of market
conditions and the specific contracts to be negotiated
with our customers. Shannon LNG has not as yet secured
a firm supply for the proposed project, but we are very
confident we will be able to do so. As I described

earlier given the relative attractiveness of the Irish market we are optimistic that LNG suppliers will be willing to commit supply to Ireland. We have made studies which show that adding supply from Shannon LNG to the Irish market will increase competition and reduce prices. Today Ireland pays a premium over the UK market price. If we are successful that premium will be reduced resulting in lower energy prices for all consumers.

10:31

10: 32

10: 32

1011

12

13

18

19

1

2

3

4

5

6

7

8

9

Let me turn to the comment that once operational we

will not be under any obligation to supply the market.

Let me also explain why this should not give rise to

any great anxiety on the part of consumers or the

authorities. As long as the Irish market price remains 10:32

16 above the UK market price, which in turn is

increasingly linked to the price of gas in north west

Europe, we expect that LNG will preferentially flow to

Ireland over these other markets. This has been the

20 experience recently between the UK and US markets when

21 high UK prices have attracted LNG away from the US

22 market and vice versa. More supply coming to Ireland

23 will mean lower prices.

2425

26

27

28

29

The bottom line is very straightforward. We expect to be successful in securing long-term supplies for our terminal in order to supply the Irish market.

Additional supplies will lower gas prices which will

benefit all consumers. If we build the terminal and

cannot use the capacity or its entire capacity for our own account then we have every incentive to offer that capacity to third party suppliers, but if we do not secure the requisite approvals without unduly onerous conditions or if market conditions change in an adverse 10:33 manner our project may not be commercially viable. In those circumstances it is highly unlikely that any other developer would be willing to seek to build an LNG terminal in Ireland and the country will remain beholden to the UK for its gas supplies and for the 10:33 price of those supplies.

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

1

2

3

4

5

6

7

8

9

10

11

Another submission raised the comment from Ms. O'Connor that Shannon LNG can divert its LNG to other markets in the UK and Europe. In response to that I have to say 10: 33 that that actually would be correct. Under European anti-competition laws and Irish law Shannon LNG could bring LNG to Ireland and sell that LNG to the UK and Europe. In fact we would not be able to stipulate that it had to be sold only in Ireland, that would violate 10: 34 However, that's unlikely to happen except in EU I aw. very rare circumstances because it make little commercial sense. Let me explain. In order to sell gas into the UK market Shannon LNG would have to pay the BGE rates for transporting gas through Ireland and 10: 34 then pay the interconnector rates for transporting gas across the Irish sea. However, the UK LNG terminals that we heard about yesterday are connected directly to the UK system and would not have to pay either the

rates within Ireland or the interconnector rates to As a result Shannon LNG would be unable cross the sea. to compete with the UK LNG terminals in the UK Going to Europe would be even harder as marketpl ace. in addition to the Irish rates we would have to pay the 10:34 UK rates and then the interconnector rates to move gas from the UK to Europe. This would not be economically feasible and would almost certainly never happen. would also mean that in those circumstances Ireland's gas prices would be well below those in the UK and 10:35 Europe, which of course would be exactly the benefits this project is designed to deliver, that is to deliver Ireland not just competitive emergency prices, but hopefully energy prices that are equal to or below those in other countries. 10: 35

16 17

18

19

20

21

22

23

24

25

26

27

28

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

As for the concept of re-exporting from Shannon LNG to other markets via tanker, I would not say this could never happen since there may be again very rare circumstances when it would occur. It is highly 10:35 unlikely, however, since it would be an expensive proposition to unload an LNG tanker into the LNG terminal and then load that LNG back onto another tanker to take to a different market and then unload it into yet another LNG terminal in that other market. 10:35 Just as exporting gas from Shannon to the UK and Europe would make little sense, exporting LNG by sea from Shannon to other markets would also make little sense.

29

Another submission from Ms. O'Connor noted that an LNG terminal in Ireland should be developed by a state owned company. In response we would say there is no obstacle to a state owned company developing an LNG terminal in Ireland. There was no obstacle to a state owned company proposing to build an LNG terminal to the Shannon LNG site, but neither BGE or ESB expressed any interest in the site or the project. Indeed in the comments on the Government's recent Green Paper BGE noted:

"We recognise that the development of an efficient scale LNG facility will be challenging during the life of the Corrib field, if viewed in an Ireland only context. Due to the capital intensive nature of LNG, its potential role as a new Irish market only supply source would be in the longer term."

This hardly suggests much interest or enthusiasm for LNG on the part of BGE and there is no insurance that a state company would be any more successful in securing LNG on competitive terms from the Irish market unless it undertook to pay a premium over all prospective other buyers and then in turn try to pass those costs on to the Irish gas consuming public. In other words, we have made a commercial decision and BGE would be free to make an equivalent commercial decision.

10: 36

10:37

10: 37

Another submission noted that the Shannon LNG project is not in the national interest, Ms. O'Connor again and the Kilcolgan residents at several points noted this.

I am not going to read through all of the comments, just to note that in the Green Paper both the Government noted and ESB noted that the development of a Liquefied Natural Gas terminal would be beneficial to the Irish marketplace. The Government White Paper on Sustainable Energy Future also noted the active encouragement by the Government of private sector interests in investing in gas storage facilities and LNG would be a Government objective.

10 11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1

2

3

4

5

6

7

8

9

10: 38

If these preceding statements that we have referenced does not indicate Government policy and unequivocal support for the LNG project we are at a loss to understand what more they could say. The submissions that suggest that planning permission be delayed until the Government completes the all Ireland strategy for gas storage and LNG are misleading since the study referred to is intended to address the issue of gas and LNG storage for strategic and reliability purposes, not the issue of gas supply. As discussed in the EIS and in this testimony Shannon LNG has maintained a flexible development posture as to the number of LNG tanks to be constructed and could be in a position to offer strategic storage service to the market if that was a policy supported by the outcomes of that particular study.

10: 38

10: 38

2627

28

29

Another submission noted that the Shannon LNG project is not needed as Ireland has access to other gas

supplies. That was a submission by Adam Kearney Associates as well as the Kilcolgan residents. It broke into several components which I will try and address separately. We did cover this somewhat in section 2.2 of the EIS, but I think there are some specific aspects that we could expand on here.

10:39

10: 39

10: 39

10:39

10: 40

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

1

2

3

4

5

6

A gas pipeline exists between Norway and the UK, I guess the implication being that pipeline would be a source of supply. There is a new gas pipeline between Norway and the UK, the third such pipeline. was commissioned in October 2006 the UK prices dropped sharply for a short period of time, even negative levels because sellers were actually paying buyers to take gas from them to avoid penalties that would be otherwise assessed on imbalanced deliveries into the UK This phenomenon turned out to be extremely gas grid. temporary and by the summer of 2007, that is last summer, UK gas prices were trading at a near parity with US prices. While the UK market may well be supplied on an average basis, the forecasts are much less assuring when it comes to meeting peak day demand. A recent study published by Ofgem, the UK regulator, suggested that the UK could face peak day supply shortfalls by the winter of 2015/16 unless additional investment is made in infrastructure to serve the UK including additional LNG import capacity. Just last month British Gas warned that prices of gas would increase in 2008 as much as 15% over current levels.

So the UK is having its own issues with LNG gas supply and gas pricing.

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

1

2

Another part of this comment was LNG terminals in the rest of Europe could supply gas to Ireland. 10:40 That's theoretically correct, but in order to reach I reland the gas price would need to reflect the landed cost of LNG, the cost of the terminaling, the cost to transport the gas through those segments of the European gas grid plus the cost of transport from 10: 41 Europe to the UK through the interconnectors there. The cost of transport of gas through the UK and finally the cost of transporting gas across the UK/Ireland interconnectors all before it reached Ireland. Assuming for the moment, and that's not a very sound 10: 41 assumption, that the capacity was available to do it, especially in peak demand periods, the result would be much higher prices for natural gas in Ireland and could

2122

23

24

25

26

27

28

29

Another comment was to the effect that gas has been discovered off the coast of Ireland and our response to that. The Corrib field has been in development for some time. I think its struggles to realisation are very well known. However, even if Corrib comes on line as planned based on Government forecasts it will not supply more than 40% of Ireland's requirements and

be realised by importing directly and avoiding all the

10:41

10: 41

pipeline transportation fees associated with this

method of delivery.

eventually it too like Kinsale will go into decline.

No other commercial deposits of natural gas have been discovered off the Irish coast.

10:42

10: 42

10: 42

10:42

10: 43

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

1

2

3

The next comment was to the effect that Shannon LNG is giving no assurances of supply. As we explained earlier that is correct. There are certain prereguisites necessary before Shannon LNG can enter into supply LNG discussions with prospective suppliers. However, it should be noted that none of the other possible supply services mentioned as alternatives provide any supply assurance either, whether LNG through the UK or Europe or pipeline gas from Norway or Russi a. As for the "use it or lose it" provisions proposed for the Isle of Grain terminal, Shannon LNG expects something similar will required in its case, but even if this did not happen Shannon LNG has no commercial motivation to keep capacity at its terminal off the market as it has no source of revenue if no LNG is flowing through the terminal.

21

22

23

24

25

26

27

28

29

The next comment is to the effect that Shannon LNG is not needed because the UK faces a supply gut which should guarantee the supply of LNG to Ireland. What the paper referred to in this comment actually states is that the UK expected to experience an excess of import <u>infrastructure</u> during the period in question, that period ended in 2010, while Shannon LNG does not expect to begin operations until 2012. The existence

of infrastructure is a necessary condition to securing LNG or gas supplies, but it does not guarantee them.

As the article referred to also noted LNG suppliers and Norwegian pipeline gas suppliers can divert their supplies to other market reflecting the competitive 10:43 realities of the gas supply business. Furthermore, infrastructure and supply in the UK does not equate to more gas for Ireland as forecasts show that Ireland's peak day requirements will exceed the capacity of existing infrastructure within a few years.

Finally, the report noted that UK prices had fallen to less than \$4 per million btu and UK gas suppliers had all announced price reductions to consumers. Today the UK National Balancing Point price is of the order of \$10.80 per MMBtu (well in excess of US prices which at the time of this writing were around \$7 per million BTU) and as noted British Gas is warning consumers of upcoming price increases as they are now other suppliers on the UK market.

10: 44

10:44

10: 44

The next submission suggested that planning permission should be denied because Hess LNG's USA project has been denied approval showing Hess' disregard for safety, that's the Kilcolgan residents comment. In response to that let me make the following observations: There is no question that LNG terminals are broadly opposed in most of the United States outside actually a limited number of states in the Gulf

of Mexico being Texas Louisiana and possibly at times That does not mean they are unsafe. Mi ssi ssi ppi . fact the oldest operating terminal in the United States and one of the oldest in the world located in Boston Harbour has operated since 1971 without any 10:45 consequential incidents of any kind since its commissioning. The LNG industry's safety record is unmatched globally as should be clear from the EIS and other testimony offered during these hearings. voyages reported by SIGTTO as of 31 December 2007, 10:45 without any accidents involving any loss of LNG from a tanker incident, no injuries to the public and I should say no consequential loss -- there have been small leaks -- no injuries to the public, no property damage and no environmental damage arising at any LNG import 10: 45 terminal.

17

18

19

20

21

22

23

24

25

26

27

28

29

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

As for our project in the US called the Weaver's Cove project that was found to be safe, secure and environmentally acceptable by the Federal Energy Regulatory Commission, the US agency charged with approving all US import terminals and overseeing their safety. In 2005 that approval was received and the recent Coast Guard ruling referred to by the objector deals only with a narrow issue arising from the existence of an old bridge which blocks the main shipping channel or currently blocks the main shipping channel. We are in the process of appealing this decision as well as modifying the application we made

10: 45

10: 46

to Coast Guard to address the specific concerns and we expect this project will proceed to approval within the next year or so.

4 5

6

7

8

9

10

11

12

13

14

15

16

1

2

3

As for the accusation that Hess does not care about 10:46 safety and will ignore its own best practices to put lives at risk to "clinch the deal". Nothing could be further from the truth. Hess has an unqualified commitment to safety for the communities in which we operate, for the employees and contractors at our 10: 46 facilities and of the protection of the environment. We don't do this just for altruistic reasons, but also because it is good business practice. Safe facilities are more profitable facilities and we believe the two aims can co-exist, but safety is never compromised in 10: 47 the interests of profit.

17

18

19

20

21

22

23

24

25

The implication that Hess is not subject to regulations for health and safety is unsupported and untrue. If anything the US example illustrates just how tough the 10:47 independent safety standards governing LNG operations actually are. Similar standards are found in Europe and Ireland through the application of the European safety codes governing LNG citing, as well as through international safety standards which apply to LNG 10:47 tankers.

2627

28

29

Another submission noted that Shannon LNG is controlled through an offshore company and has no assets of note,

the Kilcolgan Residents Association. In response I would note that this assertion is based on a very limited financial filing made with the Companies Registration Office and presents an unrealistic view of the company's ultimate financial condition. 10:48 accounts only represent a picture of the company at the end of 2006 shortly after it was incorporated in To construct the LNG terminal Shannon LNG will need funds of approximately €500 million which as described above will be supplied from its parent 10:48 company or may come through project loans. No matter where that parent company is domiciled the simple fact is that Shannon LNG itself will be more than adequately capitalised to fund construction of the terminal. The nature of the LNG business is by definition 10: 48 international and as a result Shannon LNG will be part of a supply chain which stretches around the world over many countries and legal jurisdictions.

19 20

21

22

23

24

25

26

27

28

29

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

Shannon LNG will take ownership of the site and will construct and operate the LNG terminal. Any suggestion as raised in the submittal that we will sell the site or the operations in whole or in part is without foundation. Shannon LNG has more than adequate commercial incentive for safe operations as its profitability is based on its remaining in business over a long period of time, something it could not do if it was held responsible for damaging the environment or creating human losses. I think that was the terms

10: 48

10: 49

used in the submittal.

2

1

3

4

5

6

7

8

Another submission noted that planning permission should be refused because LNG contributes to global warming and is an obstacle to the development of renewable energy. That was a comment submitted by the Sea Energy Group, Thomas O' Donovan and again the Kilcolgan residents.

10:49

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

This aspect of the project was covered in some detail 10: 49 in sections 8.8 through 8.15 of the EIS, but let me just note here that LNG is a hydrocarbon and when it is burned it will produce CO₂ which is a greenhouse gas. However, the CO₂ emissions associated with burning natural gas, especially in advanced combined-cycle 10: 49 electric power plants are much, much lower than those associated with burning coal. Gas produces little or no sulphur oxides or dioxides or nitrogen oxides when The data referred to in the Greenpeace paper which was cited by the submittal assumes very different 10:50 characteristics to the LNG supply chain that would be expected at Shannon LNG. For example, the Greenpeace paper assumes that natural gas, which is being converted to LNG, is produced from fields with very high carbon dioxide contents. While these gas fields 10: 50 can be found in the Pacific basin they are unusual in the Atlantic or the middle eastern regions. shipping distances across the Pacific Ocean are vast and much greater than the sipping distances over which

LNG would travel to Shannon and so result in the production of much more CO₂ as a result of the ship The comparison between gas and coal transportation. fire plants in the Greenpeace paper are based on advanced coal burning technologies using domestically 10: 50 produced coal in the United States. In order to make a proper comparison in Ireland, which has no domestic coal, the data would have to be revised to take into account the CO₂ emissions associated with shipping coal Finally, the analysis takes no account of to I rel and. 10: 51 the fact that West African LNG projects as well as others are taking gas that otherwise would be flared as a by-product of oil production and turning this waste gas stream into LNG. The cited paper is, therefore, inappropriately applied to the situation that would 10: 51 hold in Ireland.

17

18

19

20

21

22

23

24

25

26

27

28

29

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

The objectors claim that LNG is an obstacle to the development of renewable energy and conservation.

However, they provide no support for this position. As 10:51 demonstrated in the ELS and described earlier, the movements towards wind energy in Ireland will require additional gas fire generation to make up for the unreliability of the wind. In any event this seems a matter more for Government policy and Government policy 10:51 in Ireland favours the development of LNG. As for the future of possible gas-fired power plant at the site which was also cited by the submitters that's a matter for a separate planning review if and when such a

project is brought forward for planning permission.

2

1

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

Another submission said An Bord Pleanála should permit additional comments from the public on the QRA, that we should supply material safety data sheets on LNG and that the scale of facility is inappropriate on the grounds of hazards. In the interests of full and open disclosure we have made the QRA available to the public both on our website and in hard copy to anybody who requests it from the company's office in Listowel. addition, the website also contains copies of all the questions that were sent to Shannon LNG by the Health and Safety Authority and our response is to issue those The issue of hazards is the subject of the questi ons. QRA and the assessment by the Health and Safety Authority and that will be covered in some detail by future evidence in this proceeding in the modules that we expect we will get to later today and tomorrow.

10:52

10:52

10: 53

18 19

20

21

22

23

24

25

26

27

Another submission states that An Bord Pleanála should 10:53 fund the objectors because they lack adequate resources. Well, that's a decision for the Board. We just note in passing that the cited report makes no mention of Ireland except to refer to an earlier report from the same group and makes no recommendations for 10:53 the public funding of objectors in the planning process.

28

29

Submission: The objectors again complain that the LNG

1	terminal would increase dependency on OPEC nations,	
2	contradicting energy independence objectives. In	
3	response we note several comments regarding that.	
4	First of all, LNG is not necessarily produced by OPEC	
5	countries. Major LNG suppliers including Trinidad, 10:	: 53
6	Egypt, Australia, Malaysia, Norway, Brunei, Oman,	
7	Yemen, Russia and the United States are not members of	
8	OPEC. Shannon LNG would also note that OPEC does not	
9	address quotas for LNG or gas production as it does for	
10	oil production. Shannon LNG is unaware of where it is 10:	: 54
11	the stated policy of the Irish Government to achieve	
12	energy independence. The Government has a long-term	
13	policy objective of generating round a third or about	
14	30% of Ireland's electricity from wind power which as	
15	noted previously will require extensive back-up from 10:	: 54
16	thermal generation plants. The remaining 70% will have	
17	to be primarily generated from fossil fuels, most of	
18	which must be imported. The balance of Ireland's	
19	primary energy supply (transport fuels, other petroleum	
20	products, LPG, natural gas and coal) must be imported 10:	: 54
21	or refined from imported product.	

Finally, we simply note that we were not aware that the Board had a mandate to consider energy policy as part of the planning process, but we note, I think, that the 10:54 policy itself is not as the objectors claim.

Another submission: The objectors claim that if the Government is giving licences for gas exploration there

must be more gas in the country. Again I would note the submission is without substance as the granting of an exploration licence gives no assurance of gas There may be the hope of more gas in the country, but that does not translate into a guaranteed supply.

10:55

10: 56

The objectors provided a list of SIGTTO Submission: members and in some of their comments they noted that Hess LNG was not a member of SIGTTO. The purpose of 10: 55 providing this was unclear, but I think it does demonstrate that while Hess is not directly a member of SIGTTO, its wholly owned subsidiary, Weaver's Cove Energy, which is developing the project in the eastern United States, is a member and is an active participant 10:55 in the organisation and as a result Hess enjoys directly all the benefits of the membership of SIGTTO and we have active in many facets of the organisation's activities.

20

The final submission that I will discuss: Shannon LNG is putting profit before safety, that was a submission contained in a submittal by Bríd O'Brien. We have made a commitment to ensure the safety and the protection of the public, our employees and the environment. 10: 56 not an altruistic undertaking, but reflects sound business practice in the realities of today's world. There is no possibility of profit without safety.

29

27

1	Mr. Inspector, that conclud	es my evidence. I am very	
2	glad to be here and we are	very enthusiastic about the	
3	prospects of the approval f	or this project and the	
4	development of an LNG termi	nal in Ireland. Thank you.	
5			10: 56
6	END OF SUBMISSION OF MR. GO	RDON SHEARER	
7			
8	I NSPECTOR:	Thank you, Mr. Shearer.	
9		Mr. O'Neill, your next	
10	contributor and what topic.		10: 56
11	MR. O'NEILL:	My next contributor would	
12		be Mr. Power again dealing	
13	with site selection. I hav	e three more contributors in	
14	this module dealing with si	te selection, possible	
15	offshore Location and then	dealing with the local,	10: 57
16	regional and national polic	ies, development plans etc.	
17	I NSPECTOR:	I think it might be	
18		appropriate if we allowed	
19	questions at this point, wo	uld it?	
20	MR. O'NEILL:	I am entirely in your	10: 57
21		hands, confined I presume	
22	simply to the need and the	lrish Government policy	
23	perhaps for LNG in this jur	i sdi cti on.	
24	I NSPECTOR:	Okay. Does anybody wish to	
25		put questions to the	10: 57
26	Applicants? Mr. McElligott		
27	MR. McELLI GOTT:	Yes.	
28			

1		MR. SHEARER WAS CROSS-EXAMIN	IED AS FOLLOWS BY THE	
2		<u>OBJECTORS</u>		
3				
4	1 Q.	MS. GRIFFIN:	Good morning, everybody.	
5			My name is Catriona	10: 57
6		Griffin. I have just got a	few questions I want to ask	
7		Mr. Shearer. Firstly, yeste	erday during Mr. Power's	
8		presentation he mentioned th	at there was 60 years worth	
9		of gas left in the world bas	sed on today's consumption	
10		rates; however, Mr. Shearer	has just said in point	10: 58
11		No. 6 that the:		
12		"Demand for natural gas		
13		"Demand for natural gas global basis and that b supply to the Atlantic current and committed l	by 2015 LNG	
14		current and committed	i quefaction	
15		plants is expected to r cubic feet per day, alm in 2005 level."	nost three times	10: 58
16		TH 2005 Fever.		
17				
18		l just want that point clari	fied please. If the	
19		consumption is going to treb	ole by 2015 how can there be	
20		60 years worth of gas left?		10: 58
21	A.	I will try to answer that as	quickly and as briefly as	
22		possible. LNG represents to	day only about 10% of world	
23		gas supplies and it may rise	e to as much as 15% so most	
24		of the world's gases is cons	sumed either in the country	
25		that produces it or is shipp	ed by pipelines through to	10: 58
26		adjacent countries so LNG is	actually a fairly small	
27		percentage of the world's ga	s supply so you have to	
28		look at the supply as a whol	e, not just the LNG	
29		component. On the second th	ning I think I made note	

I			that the LNG industry had grown very rapidly between	
2			1980 and 2005 and you will see in figure 4 that in 1980	
3			the world had about 62 years of gas supply remaining	
4			and in 2006 it had 62 years of gas supply remaining; in	
5			other words, we are finding gas as quickly as we are	10: 59
6			using it or more quickly so we have been able to	
7			maintain this level of gas reserves worldwide for 25	
8			years even in the face of growing production.	
9	2	Q.	Right. So it is feasible to assume then that there	
10			could be more gas located in Ireland as well if gas is	10: 59
11			being discovered as quickly as it is being used?	
12		A.	There certainly could be more gas in Ireland.	
13	3	Q.	My second question: In point No. 8 you mention that:	
14			. .	
15			"The project is designed to include one or two LNG storage tanks initially with	11: 00
16			or two LNG storage tanks initially with up to four in total by the end of the ten year planning horizon."	
17				
18			My question relate to the number of jobs that were	
19			quoted in your brochures, it says up to 50 permanent	
20			jobs are foreseen in the LNG plant, is that working on	11: 00
21			the assumption of four tanks or two tanks being in	
22			operati on?	
23		A.	I believe that was based on the initial assumption of	
24			just one or two tanks in operation. Mr. Biggane will	
25			cover that in some detail in his evidence.	11: 00
26	4	Q.	I will forward to it. In response to a submission	
27			Shannon LNG is controlled through an offshore company	
28			and has not assets of note. Your response was these	
29			accounts only represent a picture of the company at the	

1			end of 2006. Is it possible to have a more up to date	
2			financial picture of how Shannon LNG stands at the	
3			moment?	
4		A.	That will be available when they are filed after they	
5			are audited, they were filed at the Companies	11: 01
6			Registration Office just as the 2006 figures were	
7			filed.	
8	5	Q.	So we will have to wait for probably another year.	
9			Question 4: You mention:	
10			"Shappon INC's interests in full and	11: 01
11			"Shannon LNG's interests in full and open disclosure has made the QRA available to the public both on its	
12			website and in hard copy to anyone who requests it from the company's office in Listowel."	
13			in Listowel."	
14				
15			I have been trying to download the QRA from your	11: 01
16			website since last September and I contacted your	
17			secretary in the office in Listowel and said that the	
18			QRA was not downloadable. I also contacted An Bord	
19			Pleanála and spoke to Ms. Meehan and she said they	
20			would look into the matter and get back to me. That	11: 01
21			was last September, I am still not able to download the	
22			QRA from your website and for the last week in fact	
23			I am not able to get into your website at all?	
24		Α.	I am sorry about that, but the hard copy was available	
25			in the office.	11: 01
26	6	Q.	I have a computer at home, why should I have to go to	
27			Listowel, either it's available on the website or it's	
28			not available on the website?	
29		Α.	I will leave that to Mr. Biggane. If we had contacted	

1			the office I am sure they would have mailed you to	
2			copy.	
3	7	Q.	Plus when I mentioned it I was told it would be looked	
4			into, but the last time I was able to get into your	
5			website about 10 days ago it said at the bottom "last	11: 02
6			updated September 2007" so since then nobody has gone	
7			into the website?	
8		A.	I don't know if that's the case, I am not an expert on	
9			how the website is designed, we will have to leave that	
10			question for somebody who has got computer expertise.	11: 02
11			MS. GRIFFIN: That's all my questions.	
12	8	Q.	MR. McELLIGOTT: Hello, Mr. Shearer.	
13			I was just reading in	
14			section 5.0 about your experience in other LNG energy	
15			projects, could you just confirm that you actually have	11: 02
16			in no LNG importation terminal operating, Hess LNG?	
17		Α.	You mean today we have no import terminal operating?	
18	9	Q.	Yes.	
19		Α.	Yes. In that sense we are very similar to companies	
20			like BP, ExxonMobil, Totale, British Gas.	11: 03
21	10	Q.	0kay. So you have none?	
22		Α.	We have none. Most companies with planned LNG	
23			terminals have no LNG terminal operating experience.	
24	11	Q.	0kay.	
25		A.	By the way I should add and I would mention in 5 it's	11: 03
26			not just the company's experience, it's the experience	
27			of the staff and the people so I have extensive	
28			experience. As you will see over the next few days	
29			many of our staff members have very substantial	

1			experience as well and that	should be sufficiently	
2			reassuring in terms of wheth	ner we know how to run LNG	
3			terminals or not.		
4	12	Q.	Yes. It's the company itsel	f really, individuals work	
5			in a team and sometimes they	/ might have the experience	11: 03
6			on their own, but when it's	a new company project it's	
7			the dynamics of actually hav	ving accomplished a full LNG	
8			importation terminal, as a t	team together you have never	
9			done it together?		
10		A.	Nor has many people.		11: 04
11			MR. McELLI GOTT:	Ri ght.	
12	13	Q.	MR. KEARNEY:	I have a question, Adam	
13				Kearney is my name. I just	
14			want to know what the status	s is of the other LNG plant	
15			you have proposed for Falls	Ri ver?	11: 04
16		Α.	I have described that in my	testi mony.	
17	14	Q.	Yes, but what's the current	status?	
18		A.	It is in permitting.		
19	15	Q.	Has the Coast Guard in the L	JS not had a problem with	
20			it?		11: 04
21		Α.	They have raised an issue or	n one particular aspect.	
22	16	Q.	Has that process stalled?		
23		Α.	No.		
24	17	Q.	MR. McELLI GOTT:	You said that there was no	
25				safety issues in Fall	11: 04
26			River, your other LNG termin	nal, but isn't the issue	
27			raised by the Coast Guard in	n fact a safety issue?	
28		A.	It has to do with the naviga	ation of ships around an old	
29			bridge which is obstructing	the channel.	

1 18 Q. Yes, so that would mean that the reason they have 2 objected or refused at a local Coast Guard level is 3 that that could cause an accident, correct? 4 Α. They are concerned, they have expressed concerns about 5 the repeatable navigation of LNG ships through a very 11:05 6 narrow bridge. 7 19 0. Would that not constitute a safety issue? 8 Α. It's a concern, yes, which we have to address. 9 20 0. Would it be considered a safety concern? 10 It's something we have to address. Α. 11: 05 11 21 Q. Would it be a safety concern? 12 Of course it's a safety concern, it's a concern to us. Α. 13 22 Q. So, therefore, it is a safety issue? 14 I am not sure I understand. Α. 15 Because you said -- just a moment -- you say that the 23 Q. 11: 05 16 Weaver's Cove project was found to be safe, secure and 17 environmentally acceptable by the FERC, but the Coast 18 Guard ruling reflects a narrow issue arising from the 19 existence of an old bridge which blocks the main 20 shipping channel so since you have now said that is a 11: 06 21 safety concern that means that the project has not been 22 found to be safe, would you agree with that? 23 Α. No. 24 So if you say something is a safety concern for 24 0. 0kav. 25 one of the regulatory bodies then the project has not 11: 06 26 been found to be safe, is that not correct, as it is 27 currently presented?

Let me try and describe the circumstances. I am not

quite sure of the relevance, but let me describe the

28

29

Α.

circumstances. The project was originally permitted, in 2005 it was approved by the Federal Energy Regulatory Commission with input and sign-off from the United States Coast Guard. The project assumption and the assumption of all of the regulators was that an old 11:07 bridge which was being demolished or scheduled to be demolished and replaced across the river in the shipping channel would be removed and that would create a free passage for LNG tankers. That bridge has been delayed and there is some legal obstruction to its 11:07 removal as a way of opposing the project and it's the narrow issue of whether the LNG tankers can fit through that bridge is the only issue that is currently before the Coast Guard that adds any alteration to the original findings of safety and security within the 11: 07 Now if that bridge is ultimately removed the project will in fact be safe and secure; if the bridge is not removed then we have submitted modified or we have both appealed the decision on safety findings and we are also in the process of preparing and will submit 11:08 modified plans to address the specific safety concerns of the Coast Guard in that circumstance.

2324

25

26

27

28

29

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

I might note that the Coast Guard's own findings found that while there could be an accident involving interaction or a collision between the ship and a bridge, that the concern was damage to the bridge not damage to the ship because the Coast Guard actually found in their own findings that there was almost zero

11: 08

1			chance, in fact there was really no credible scenario	
2			under which any collision between the ship and the	
3			bridge would result in any spillage of LNG cargo	
4			because of the double hull construction of the LNG	
5			carri ers.	11: 08
6	25	Q.	Doesn't that not mean so that currently as you have	
7			proposed that project in Weaver's Cove, that currently	
8			given this current set of circumstances there are	
9			safety issues that have been found to be unacceptable	
10			by one of the planning authorities there?	11: 09
11		A.	There is a safety issue in front of the Coast Guard	
12			right now which we will need to resolve before we	
13			proceed with the project.	
14	26	Q.	The second issue: You just said that the issue with	
15			the bridge is only a problem of concern to damage to	11: 09
16			the bridge, but is it not also a concern that because	
17			it is stuck between two bridges that it could somehow	
18			receive an explosion for instance, an attack because of	
19			the situation in America, basically a terrorist attack?	
20		A.	I am not an expert on terrorism or explosions, but if	11: 09
21			you have knowledge to that effect you need to raise it	
22			with the US authorities.	
23	27	Q.	Because it is so close, a moving target is harder to	
24			hit and it is stuck there between two bridges, there is	
25			also those safety issues there?	11: 09
26		A.	I think if you had done your reading correctly what you	
27			would find is the Coast Guard determined the issue was	
28			a navigational safety issue, had nothing to do with	
29			security and until the navigational problem is resolved	

1			they will not address relating to security. Excuse me,
2			if I could finish, in the original determination issued
3			in 2005 the Coast Guard reviewed the security of the
4			shipping in question and found it to be acceptable with
5			appropriate mitigation. 11:10
6	28	Q.	MR. KEARNEY: Could you tell the hearing
7			why public representatives
8			like Senator John Kerry and Senator Edward Kennedy are
9			opposed to the project?
10		A.	Because the mayor of the city is opposed to the 11:10
11			proj ect.
12	29	Q.	I am asking you why they are opposed to the project?
13		A.	Because the mayor of the city is opposed to the
14			proj ect.
15	30	Q.	Are they not opposed to the project because they are 11:10
16			representing a large community in the area who are also
17			opposed to the project on safety concerns?
18		A.	No. I have told you they are opposed to the project
19			because the major of the city is opposed to the
20			proj ect.
21	31	Q.	Surely they have their own mind?
22		A.	I will tell you I met with a representative of the
23			United States Congress called Congressman Frank and he
24			said 'I don't care about the project, as long as the
25			mayor of the city is opposed I am opposed, thank you 11:10
26			very much, end of meeting'.
27			MR. KEARNEY: A rather simplistic answer.
28	32	Q.	MR. McELLIGOTT: What percentage of the Fall
29			River residents actually

1			oppose the project, is then	e a big opposition against	
2			that project?		
3		A.	I don't think anybody knows	what the percentage is, my	
4			understanding is that the m	ajor of Fall River conducted	
5			(INTERJECTION)		11: 11
6	33	Q.	MR. KEARNEY:	So the mayor is the only	
7				person opposed?	
8		A.	As far as I am aware there	has been no public polling	
9			relating to the interest in	public opposition, but my	
10			understanding is at the rec	ent mayoral election there	11: 11
11			may have been some polling	done which indicated ranked	
12			sixth or tenth in the issue	of concerns in the local	
13			popul ati on.		
14			MR. McELLI GOTT:	Okay, I will move on to	
15				another question so. What	11: 11
16			have you found(INTERJEC	TION)	
17	34	Q.	I NSPECTOR:	Sorry, Mr. McElligott,	
18				I would like to intervene	
19			and ask Mr. Shearer just fo	r clarification. You said	
20			that FERC had signed off on	the project, did you say	11: 12
21			that was subject to the bri	dge being removed?	
22		A.	When FERC issues an authori	sation, Mr. Inspector, for a	
23			project it is very similar	to the way An Bord Pleanála	
24			might do it. It issues an	overall finding of the	
25			public need, the environmen	tal impacts and the safety	11: 12
26			and increasingly in a world	in which Americans live in	
27			the security aspects and in	doing so it consults with	
28			many bodies directly. Ther	e is a proceeding, not quite	
29			like this, but in some ways	similar to this that	

1			involves the planning proces	ss. When FERC Issues Its	
2			authorisation it issues its	authorisation with a series	
3			of conditions. I think in	the project in the US we	
4			have 78 conditions which ind	clude finalisation of	
5			permits from a series of oth	ner agencies, federal, state	11: 13
6			and local. We are in the pr	rocess of acquiring those,	
7			but it signed off on the pro	oject as being fully	
8			acceptable with both the cor	nditions being met and with	
9			appropriate mitigation measu	ures it would be included	
10			within those conditions.		11: 13
11	35	Q.	I NSPECTOR:	Was one of those conditions	
12				specifically in relation to	
13			the removal of the bridge or	rif not that was it a	
14			requirement that you would s	satisfy the requirements of	
15			the Coast Guard?		11: 13
16		A.	It's a requirement that we s	satisfy the safety concerns	
17			of the Coast Guard and we am	re in the process of dealing	
18			with that issue and the comp	olexity is that the bridge	
19			was scheduled for demolition	n and now it is not.	
20			I NSPECTOR:	Okay. Thank you,	11: 13
21				Mr. Shearer.	
22	36	Q.	MR. McELLI GOTT:	How long has that planning	
23				application been going	
24			through in Fall River?		
25		A.	Oh, let me see, the process	started in 2003 or 2004.	11: 13
26	37	Q.	So that's about four or five	e years. You would expect	
27			that a planning application	stage to the actual	
28			construction phase would take	ke about four or five years	
29			to go through the planning p	process; is that correct?	

1		A.	Mr. Inspector, the time period that an application in	
2			the US goes through the planning process is affect by a	
3			lot of different things. Some of them go through in as	
4			little as 12 months, some of them go through in as long	
5			as I can't even think what the longest one has been,	11: 1
6			six or seven years.	
7	38	Q.	What went through in 12 months?	
8		A.	Sorry, was that a question, Mr. Inspector?	
9	39	Q.	Yes. I am just wondering what LNG importation terminal	
10			went through in twelve months?	11: 1
11		A.	Several of the terminals I said in the Gulf of Mexico	
12			have been approved in periods from filing their	
13			authorisation with the federal Government to I think	
14			12 to 18 months.	
15	40	Q.	Could you just give us the specific terminal please?	11: 1
16		A.	I can't remember the specific terminals, they are all	
17			in the public domain.	
18	41	Q.	Was it an offshore terminal or was it an onshore	
19			terminal, do you think?	
20		A.	The offshore terminals have a requirement to be	11: 1
21			approved within a twelve month period, that is actually	
22			statute set down in the authorising legislation so they	
23			are required from filing their application for approval	
24			in twelve months. Many of them have been approved,	
25			virtually all of them have been abandoned. Offshore	11: 1
26			LNG terminals have proven to be both technically and	
27			commercially extremely difficult and it's fair to say	

they are increasingly commercial failures.

I just want to know what are the main concerns that are

28

29

42 Q.

1			faced at the planning application stage in America from
2			your experience, what are the main concerns of the
3			planning authorities that you are finding, what's the
4			biggest obstacle that you have to face?
5		Α.	Mr. Inspector, I think the biggest obstacle one faces 11:10
6			is the aspect of dealing with the public concern over
7			safety of LNG and especially in a post 9/11 world and
8			it is a very easy issue to inflame public opinion.
9			I have been to numerous public meetings and
0			presentations where the discussion of LNG facilities 11:10
1			opens with a picture of the World Trade Centre being
2			hit by aircraft as if that was some analogy that ought
3			to be taken into account in LNG planning. The issue of
4			LNG safety is a complex one, it's highly technical,
5			it's very easy to stir up public emotion by comparing 11:10
6			LNG to nuclear bombs, to terrorist targets, it's very
7			hard to prove the opposite because most people are not
8			willing to study and analyse the technical aspects.
9			It's also fair to say that the planning structure in
20			the United States follows a different process than it 11:1
21			does in this part of the world and, therefore, I really
22			cannot make a comparable analogy between the two. We
23			have no function like the HSA in the United States that
24			would perform independent risk assessment, that is
25			actually done by the Federal Energy Regulatory
26			Commission within its planning mandates.
27	43	Q.	MR. KEARNEY: Is it fair to say that if
28			there is concerted local
9			operation to an LNG project in the US that the process

ı			could be prolonged for up to five or six years?
2		A.	It is certainly fair to say if there is concerted
3			opposition to any project of any controversy anywhere
4			in the world the process can be prolonged both by
5			manoeuvring the administrative process and then through 11:
6			the process of Legal appeals subsequent to that.
7	44	Q.	I am specifically referring to the LNG plants in the
8			United States?
9		A.	Yes, it's true of LNG plants in the United States and
10			LNG plants in Italy, Spain and France.
11	45	Q.	MR. McELLIGOTT: Okay. Can I move on to the
12			next question please. In
13			section 8.0, it is about the second paragraph about
14			constructing initially up to four, one to two initially
15			and then up to four tanks over a period of ten years.
16			Now, this has given rise to a lot of concern locally
17			because at the Kerry County Council meeting it was
18			described that you were planning to blast possibly for
19			the four tanks with explosives or to do blasting of the
20			rock because you could not do the tanks that you would 11:
21			develop at a later stage, you could not use explosives
22			if the original two tanks were already built and I am
23			just wondering do you think it is reasonable to expect
24			that construction will go on over a ten year period,
25			that seems like a very long construction period for 11:
26			people to actually have to put with?
27		A.	I think that's a question best addressed in the
28			construction section of this.

46 Q. There is no construction section, is there, module?

1		A.	It will be part of the next	modul e.	
2			MR. O' NEI LL:	We will be leading evidence	
3				under the other planning	
4			matters, visual impact, road	ds and traffic, noise and	
5			vi brati on, dust etc.		11: 19
6			I NSPECTOR:	It seems like it is coming	
7				up later.	
8	47	Q.	MR. McELLI GOTT:	I have another question.	
9				There is a problem I don't	
10			understand. Who will own th	ne gas when you purchase it	11: 19
11			at source, will it be owned	by Shannon LNG at the	
12			purchase point or at the poi	nt at which it delivers the	
13			gas and it is unloaded?		
14		A.	It could be either or neithe	er.	
15	48	Q.	I NSPECTOR:	Can you elaborate on that?	11: 20
16		A.	I certainly can. It is poss	sible that Shannon LNG will	
17			buy or an affiliate of Shanr	non LNG will buy LNG at a	
18			liquefaction plant and arrar	nge the shipping of that LNG	
19			itself. It is also very pos	ssible that Shannon LNG will	
20			arrange to purchase LNG and	deliver on what's called an	11: 20
21			ex-ship or CLF basis, that i	s delivered to the terminal	
22			by a third party.		
23	49	Q.	MR. McELLI GOTT:	Okay. You talk here about	
24				carbon emissions, that it	
25			varies from different source	es of the LNG. I am kind of	11: 20
26			worried about the idea that	depending on the origin of	
27			the LNG you can have differe	ent chemical mixtures and	
28			will you have one source of	supply of LNG from Qatar or	
29			will you just have LNG comir	ng from different sources?	

ı		Α.	wii. Thispector, i think i exprained our objective is to	
2			secure long-term supplies and then as opportunity	
3			presents itself we will hopefully be able to buy other	
4			supplies of LNG for the facility as well. We are not	
5			limiting ourselves to dealing with one specific	11: 2
6			suppl i er.	
7	50	Q.	Again that won't make a difference when you are	
8			actually putting the LNG into the storage tanks if it	
9			comes from two different sources?	
10		A.	As far as I am aware it shouldn't make any difference	11: 2
11			at all.	
12	51	Q.	INSPECTOR: Just to clarify that. You	
13			are putting in different	
14			gas mixes into the tanks and is it the case that only	
15			when you take it out of the tanks and put it into the	11: 2
16			grid that at that point you analyse it and make sure	
17			that it is compatible with the grid?	
18		A.	Mr. Inspector, that's a very good question. I am not a	
19			great expert in this area. I will endeavour to answer	
20			you now in the interests of satisfying the question and	11: 2:
21			there are some other people coming up later that will	
22			really be precise on that. LNG has different	
23			compositions, although not widely different,	
24			particularly in the Atlantic basin. When you bring	
25			different qualities of LNG from different sources, you	11: 2:
26			know what the composition of the LNG is as you actually	
27			load it onto the ship, it is specified in contractual	
28			terms, you know what it is going to be when it comes	
29			off the ship. Then when it is brought into the tanks	

1			onshore it may be very close	e in which case you do	
2			nothing with it. If it's ve	ery slightly you may need to	
3			stir it up like a cake mixe	r, you circulate the LNG to	
4			make sure it is all uniform	quality and then you know	
5			the LNG quality in the stora	age tanks and then you can	11: 23
6			predict the quality of the	gas delivered that will be	
7			to the grid and if there is	ballasting needed with	
8			nitrogen or other inert gase	es, as we propose in the	
9			project here, you will know	what that needs to be in	
10			order that the gas when it i	is delivered to the pipeline	11: 23
11			grid is fully compatible wi	th Bord Gáis gas supply in	
12			I rel and.		
13	52	Q.	I NSPECTOR:	The stirring, if you like,	
14				takes place on the ship?	
15		A.	No, The stirring would take	place on the shore tanks,	11: 23
16			if necessary. It's not nor	mally necessary, but it can	
17			be in unusual circumstances	, but I think one of the	
18			technical, either Mr. Bowdo	in, would be a much better	
19			person to respond to that qu	uesti on.	
20			I NSPECTOR:	0kay.	11: 23
21	53	Q.	MR. McELLI GOTT:	I notice there in the	
22				question of Eileen O'Connor	
23			on whether an LNG terminal	in Ireland should be	
24			developed by a state owned	company, you have made a	
25			comment that Bord Gáis Éirea	ann has made a commercial	11: 24
26			decision because in the Gove	ernment's Green Paper Bord	
27			Gáis Éireann noted:		
28			"We recognize that the	doval apmont of	
29			"We recognise that the an efficient scale LNG challenging during the	facility will be life of Corrib	

1			if viewed in an Ireland only context."	
2				
3			How can Bord Gáis not make a profit and how can you	
4			make a profit?	
5		A.	You would have to ask Bord Gáis that question.	11: 24
6	54	Q.	My point is that we can only go by what the	
7			Government's Green Paper noted saying that you are not	
8			viewing this project on an Ireland only basis, that you	
9			have an international basis in looking at this project	
10			because that's the only interpretation I can give to	11: 25
11			that, Bord Gáis Éireann would only be looking on an	
12			Ireland only basis?	
13		A.	Mr. Inspector, I don't have in front of me the language	
14			from the Green Paper to which Mr. McElligott is	
15			referring. All we have noted here is what Bord Gáis	11: 25
16			stated in its submittal to the Government in relation	
17			to comments on the Green Paper before the White Paper	
18			was developed.	
19	55	Q.	INSPECTOR: Can you deal with his	
20			implication that the fact	11: 25
21			that Bord Gáis is not interested may suggest that you,	
22			at least in the short-term, are thinking of an export	
23			market?	
24		A.	If that's the implication, I think that the material	
25			and information that Mr. Power demonstrated yesterday	11: 26
26			which is this gap between what Corrib will provide and	
27			what we expect to be able to supply demonstrates that	
28			we have a different view of what the market evolution	
29			might be than Bord Gáis does. We have different	

1		commercial drivers than Bord Gáis does, we have	
2		different commercial assessments than Bord Gáis, we	
3		have more experience in the LNG industry than Bord Gáis	
4		does. At this point there is no intent in respect of	
5		this project to supply gas from Shannon LNG to the UK.	11: 26
6		In order to do that you would actually physically have	
7		to reverse the flow of the interconnector pipeline	
8		system between Ireland and the UK. Right now it's a	
9		one way system, it's a one way street, if you like,	
10		that it only flows from off it.	11: 26
11	56 Q.	MR. McELLIGOTT: I was thinking more that	
12		you are viewing the	
13		terminal as a place that you would supply gas to	
14		sometimes but not all the time so that you can sell it	
15		when you make a bigger profit there, but you do have to	11: 27
16		sell it when you do not have a profit there so that is	
17		why Bord Gáis would say that at the moment it is not	
18		interesting for Ireland to have an LNG terminal because	
19		of with oncoming of Corrib the need for an LNG terminal	
20		on an strategic Ireland perspective, they do not see	11: 27
21		the commercial need for that?	
22	A.	Mr. Inspector, if I could respond to that in a couple	
23		of dimensions. First of all, I am not an expert in	
24		European competition law, but it's my understanding	
25		that the European Union would actually frown on Bord	11: 27
26		Gáis developing and owning an LNG terminal. It is	
27		pressing all other European utilities with LNG	
28		operations to divest themselves of those operations or	
29		to functionally unbundle them and to offer third party	

1 open access because it sees that an incumbent market 2 operator, and Bord Gáis is the incumbent market 3 operator with an absolutely dominant near monopoly 4 position in Ireland, adding an LNG terminal to their portfolio would not bring any competition to the Irish 5 11. 28 6 market and in fact it's not clear to me that Bord Gáis 7 would actually survive a challenge to that or if it did 8 develop a terminal it would, as in the case of the 9 national grid in the UK, as is the case of the 10 operators in the Belgium network would be required to 11 28 11 unbundle that terminal and offer it up to what is 12 called a third party open access régime which is a much 13 less certain, a much more speculative process. It has 14 caused all sorts of problems with the Isle of Grain 15 terminal in the UK from a commercial perspective so 11: 29 16 I think there are some policy and legal obstacles that 17 Bord Gáis would face. 19 It is also possible Bord Gáis then would see that 20 terminal as providing an avenue for new competition in

18

21

22

23

24

25

the market in which it enjoys a reasonably comfortable existence today and this might actually bring competition that was not in Bord Gáis' view the best I can only speculate on that, you would have to ask Bord Gáis that question.

11: 29

26 57 Okay, thank you. I have another question. At the last Q. 27 public meeting held by Shannon LNG in Tarbert I asked a 28 question about the SIGTTO, which is the Society of 29 International Gas Tanks and Terminal Operators, the

1			documents that they print ar	re documents of standards of	
2			best practice and I raised a	a few issues about where	
3			I thought that the proposed	terminal at Shannon in	
4			Tarbert contradicted or not	did not fulfil the	
5			standards that were expected	d or recommended in the	11: 30
6			SIGTTO document. Now the SI	GTTO document is a	
7			standards of best practice a	and you have stated that you	
8			will use all standards of be	est practice, but I think it	
9			was Mr. Blair that said at t	the meeting that the SIGTTO	
10			document is only a wish list	t of what we would like to	11: 30
11			have in the perfect terminal	set-up in the site	
12			selection so my question to	you is do you think that	
13			that is actually showing a v	villingness to apply all	
14			best practice recommended by	y SIGTTO or just to apply	
15			them when you can?		11: 31
16		A.	Mr. Inspector, Mr. MacIntyre	e who is the shipping expert	
17			will be giving evidence on t	that. As a long-term member	
18			and former officer of SIGTTO) he is far better	
19			positioned to answer that th	nan I will be so I would	
20			respectfully suggest that we	e hold that question until	11: 31
21			he is presenting his evidence	ce.	
22	58	Q.	Mr. MacIntyre is sitting beh	nind you, isn't he?	
23		A.	I believe he is.		
24			I NSPECTOR:	Let's take Mr. MacIntyre	
25				when he is speaking.	11: 31
26	59	Q.	MR. McELLI GOTT:	Okay. I just want to	
27				reinforce the point that	
28			you have said that you would	d apply best practice and	
29			best standards, but when the	e SIGTTO documents say	

otherwise you are not going to apply them in all cases and this has an implication because the implication is that the LNG industry has always declared that it has a perfect safety record and from my point of view it has such a good record because it is applied best practice up to now, but because for instance in America you are going from a period of four LNG terminals to now there is planning applications going in for approximately 50 LNG terminals that there is such a rush to develop them that there is a higher risk of mistakes being made because the standards and best practice are no longer being applied to the highest level and I am just wondering would that be Hess LNG's opinion or would you agree to just cut corners if SIGTTO standards of best practice were not being applied?

11:32

11: 32

11: 33

11: 32

A. Mr. Inspector, I already said Mr. MacIntyre will speak to that point, but I will make one observation and I think Mr. MacIntyre will be able to speak to this more exactly. I believe a large number of terminals in the world would not actually meet the "interpretation" of best practice that Mr. McElligott is suggesting here. Notwithstanding that they are not precisely in compliance with every single attribute of these guidelines -- and I might note they are guidelines, they are not regulatory requirements or standards -- that the industry has nonetheless enjoyed, as he said, the perfect safety record. Or I would rather say it was a near perfect safety record. From the public's perspective it is perfect.

1	I NSPECTOR:	0kay.
2	MR. J. McELLI GOTT:	Can I go on to the next
3		question please. We
4	requested additional documer	nts in our submission and we
5	had asked for MSDS sheets, t	that is the Material Safety 11:33
6	Data Sheet and HAZOPS and th	ney have never been
7	provided. Your response has	s been that the QRA has been
8	made available to the public	c, but we never got the MSDS
9	sheets, because they are bei	ng used for assessment by
10	the HSA. If the HSA even go	ot them. My question is: 11:33
11	Why have those MSDS sheets a	and HAZOPS not been given to
12	the general public when they	/ were requested?
13	MR. SHEARER:	Mr. Inspector, to the best
14		of my knowledge, there has
15	been no requirement yet from	n the HSA to be provide 11:34
16	HAZOPS. But I think that Mr	r. Bowdoin, who will be
17	speaking on the terminal des	sign and construction, and
18	our safety experts can answe	er that question far better
19	than I can. I am not aware	that the HSA requested
20	Material Safety Data Sheets,	it is my understanding 11:34
21	that those are, as far as Ma	aterial Safety Data Sheets
22	for methane and other hydroc	carbon gases, are available
23	readily on the internet.	
24	MR. J. McELLIGOTT:	Yes, but the HAZOPS that
25		you would be applying might 11:34
26	not all be the same; is that	correct?
27	MR. SHEARER:	I am not an expert on
28		HAZOPS, Mr. Inspector. We
29	have somebody coming up who	can discuss that in great

1	detail.		
2	MR. J. McELLI GOTT:	There is a final question	
3		and it is about An Bord	
4	Pleanála should fund the obj	ectors because they lack	
5	adequate resources. You have	ve replied that the Ahango	11: 35
6	report makes no mention of I	reland, except to refer to	
7	an earlier report from the s	same group, and makes no	
8	recommendations for the publ	ic funding of objectors in	
9	the planning process. I wou	uld just like to point the	
10	attention of the Inspector t	that Ireland is a signatory	11: 35
11	of the Aarhus Convention and	d, even though it has not	
12	formally ratified it, however	er, the European Union is	
13	also a signatory and, consec	quently, EU Environmental	
14	law is already applied.		
15	I NSPECTOR:	Mr. McElligott, could you	11: 35
16		just give us the name of	
17	that thing that we are signa	atory to.	
18	MR. J. McELLI GOTT:	The Aarhus, A-A-R-H-U-S.	
19		the Aarhus Convention.	
20	Aarhus actually. Aarhus. V	What we noticed, and I think	11: 35
21	it is very interesting, that	t the applicability of the	
22	Aarhus Convention to Ireland	d was clarified by the	
23	Compliance Committee of the	Aarhus Convention just last	
24	October, 21st, and they disc	cussed in case	
25	2006/17 (INTERJECTION)		11: 36
26	I NSPECTOR:	Can you speak more clearly	
27		and slowly, please?	
28	MR. J. McELLI GOTT:	I usually talk very fast,	
29		but this is very slow. The	

1 Compliance Committee of the Aarhus Convention clarified 2 the position that Ireland has to take on the 21st 3 October, 2007, following a meeting that was held in They said it as follows: 4 Geneva in September. 5 11:36 "That the Community, in 26 of the 27 current Member States, are parties of the Aarhus Convention, I reland being 6 the only Member State which is yet to ratified. The need for ratification or 7 parallel approval by the community and the Member States is explained *inter alia* by the fact that the community on its own is not in a position to guarantee full compliance with all the Convention's provisions, such as article 8. As already explained, the Aarhus Convention became an integral 8 9 10 11:37 11 part of community law through the Council decision of 17th February, 2005. As a result, although it is not a party to the Convention, Ireland will be obliged to respect the commitments arising from the Convention where they concern provisions falling within the competence of the Community. Thus, the fact that Ireland has not yet ratified the convention does not affect the 12 13 14 15 11: 37 Thus, the 16 the convention does not affect the commit the scope of which has been explained above". 17 18 19 20 This is just to signify that sometimes the Irish 11:38 21 planning authorities use the fact that we have not 22 ratified the Aarhus Convention. But this latest 23 clarification by the Compliance Committee of the Aarhus 24 Convention says that I reland has a duty to the 25 directives that the European Community has signed up 11: 38 26 to, which includes the environmental directives, 27 updated following the Aarhus Convention Directive, that 28 we have a duty to comply with all the updated EIA 29 di recti ves. So, that would go against the submission

1	that people should be funded	d and have timely access to	
2	information and speedy acces	ss to justice in	
3	environmental matters, and a	affordable access to	
4	justice. We have been denie	ed affordable access to	
5	justice, because we have no	funding. We do not have	11: 38
6	any top counsel and all tha	t. So, just to point that	
7	out.		
8	I NSPECTOR:	I don't think that's a	
9		question for you, Mr.	
10	Shearer.		11: 39
11	MR. J. McELLI GOTT:	No, but he replied to the	
12		question and he gave his	
13	response, so I have to conti	radict that.	
14	MR. SHEARER:	My reply, Mr. Inspector, in	
15		his submittal was one	11: 39
16	specific report which was ci	ted in the Kilcolgan	
17	Residents submittal, which i	s not "Our House" it is	
18	this Ahango Group that he ci	ted as a source that	
19	required Ireland to fund the	ese. That's all.	
20	MR. J. McELLI GOTT:	Thank you. I have one	11: 39
21		final question. Shannon	
22	LNG is giving no assurances	of supply and we were	
23	asking about the possibility	y of enforcing that's not	
24	to say that we agree with th	nis whole project but	
25	that the Board would conside	er a use it or lose it	11: 39
26	condition. Because, for ins	stance, I think last year	
27	there was some problem in Te	eesside, where 10% of the	
28	gas was unloaded onto a terr	minal and then the price of	
29	gas changed in the stock man	rket and the rest of the gas	

1	was exported to America. Something like that. So,	
2	there is a problem going on about use it or lose it	
3	conditions and that Shannon LNG here say that they	
4	expect that I think they said something here that	
5	they expect a possible something similar. Yeah, 1	1: 4
6	that Shannon LNG expects something similar may be	
7	required in this case. So the question is: When you	
8	say they expect it, for us to have a use it or lose it	
9	condition, that you do not object to us putting in a	
10	use it or lose it condition?	1: 4
11	MR. SHEARER: If I might respond,	
12	Mr. Inspector. The concept	
13	of use it or lose it is a concept that is under, I	
14	would say, active development within the European Union	
15	energy policy sector. It is generally something that	1: 4
16	is reviewed as a condition of third party access	
17	exemptions for LNG terminals such as the terminals in	
18	Milford Haven and on the Isle of Grain. Those	
19	conditions would be imposed by the CER, subject to	
20	review by, I think it is DG Trends is the European	1: 4
21	Commission with final oversight of that. And so that	
22	is something that would become part of our approval	
23	process for third party access exemption if and then we	
24	file well, we are going to file that with the CER.	
25	1	1: 4
26	Let me also add, in the context of the Teesside thing,	
27	it illustrates a very interesting issue of some of the	
28	alternatives. That is an LNG terminal that is not	

really a terminal, it involves tying a ship up to the

1	jetty, but only a ship with onboard regasification, of
2	which there are only 3 or 4 in the world out of 230 can
3	call in there. So, if that ship is not able to deliver
4	its cargo, for whatever reason, that terminal is not
5	accessible to any third party, so the concept of use it 11:
6	or lose in the context of that terminal has absolutely
7	no meaning, because there is not enough ships to supply
8	it. And I think it illustrates that the issue, that we
9	will discuss in more detail later on, that some of
10	these alternatives that are touted as being a solution 11:
11	in fact have multiple problems of their own.
12	MR. J. McELLIGOTT: I was thinking more of on
13	an Ireland perspective, to
14	have a strategic supply of LNG coming in, that Ireland
15	could say 'you must supply us with LNG' and that would $_{ m 11:}$
16	force you to hedge the price in the future markets
17	to hedge the future price of LNG so that it would
18	buffer our exposure to price fluctuations. So that it
19	would be more reasonable from an Irish perspective to
20	enforce an obligation to supply to the LNG terminal at $_{ m 11:}$
21	prices that were either fixed in the present or in the
22	future.
23	MR. SHEARER: Mr. Inspector, if I can
24	respond to that. In the
25	first case, I believe that any country in the European 11:
26	Union trying to impose limitations on the supply of
27	natural gas would be in violation of several EU
28	Directives. But this case arose very recently, in
29	fact, in Europe, where both Algerian pipeline gas and

l	LNG supplies and Russian pipeline gas contracts	
2	contained provisions that, basically, limited where the	
3	gas that was supplied under those contracts could be	
4	supplied. So, for example, Algerian LNG contracts with	
5	France limited the resale of that gas within the	1: 44
6	borders of France. Likewise, Russian contracts with	
7	Germany limited the resale of that gas within Germany.	
8		
9	Those cases were taken up by the EU Commission in a	
10	very contentious dispute with both Russian and Algeria, 11	: 44
11	some of which I don't think is fully resolved yet, and	
12	they are attempting to force the incumbents to re-write	
13	those contracts to allow free and liberal market access	
14	of the those supplies. I think it is unrealistic to	
15	think that in that environment a member of the EU would $_{ m 11}$: 44
16	be able to find a supplier who thought they would not	
17	be in violation of EU law by entering into those types	
18	of contracts. So, I think it is a commercial and legal	
19	impossibility to meet that kind of standard.	
20	MR. J. McELLIGOTT: The points you just 11	l: 45
21	referred to there were	
22	about the onward sale of gas. But if Ireland had no	
23	objection to that gas going elsewhere then we could	
24	enforce those provisions.	
25	MR. SHEARER: Mr. Inspector, one could 11	l: 45
26	certainly attempt to find	
27	suppliers that would be willing to live with that	
28	condition. In my experience, that would be impossible	
29	in the market environment in which we operate today.	

1	The notion that if gas prices were staggeringly low in	
2	Ireland, for whatever reason, and that suppliers should	
3	be compelled to supply into a market that was already	
4	oversupplied, when there were other markets looking for	
5	the product, that's just not commercially realistic.	: 4!
6	It would never happen. The only way to ensure that	
7	would be for the Irish Government to go out and,	
8	basically, agree that it would pay a price above any	
9	other buyer of LNG in the world and guarantee to do	
10	that. Which in turn will certainly guarantee that the 11	: 40
11	Irish consuming public will pay a price for energy in	
12	excess of any other LNG importer in the world.	
13	MR. J. McELLIGOTT: Does that not so mean that	
14	if ever there is a crisis	
15	of gas supply in the future it would be the richer	: 40
16	countries and the bigger economies, like china and	
17	America, that can pay the big prices for gas. So it is	
18	not guaranteeing that Ireland could cope with those gas	
19	pri ces.	
20	MR. SHEARER: Mr. Inspector, my response 11:	: 40
21	to that is whether Ireland	
22	receives its gas supply by pipeline or in the form of	
23	LNG, or even in the form of domestic gas production, as	
24	it would in the case of Corrib, the price of gas is	
25	increasingly subject to international market forces and 11	: 40
26	there is no way to insulate any consuming country from	
27	those market forces, that I am aware of. And	
28	generally, that kind of Government intervention is	
29	doomed to failure.	

1	
2	

However, I would note, as I noted in my remarks, that Ireland represents a potential very small component of the world's market. So relative, let's say, to other areas, Ireland could in fact access that marketplace 11:47 with less disturbance than, let us say, the United States or China or Japan could. And, therefore, I am much more confident that Ireland will be able to secure those supplies it needs on terms that are at market base conditions, which is the terms that are prevailing 11:47 on a worldwide basis.

MR. J. McELLI GOTT:

Okay now, at the moment,

since there are less LNG

11: 47

11: 48

importation terminals in the world than will be in the future, does that mean that the price of LNG does not fluctuate as quickly or change as rapidly as it does, say, for petroleum products? What I am thinking here is that the more LNG terminals you have you are

creating a commodity product that will move in price as

quickly as petroleum. Whereas at the moment you have a 11:48

product which does not change prices that quickly.

Would that be correct?

MR. SHEARER:

Mr. Inspector, I will

respond to that in two

ways. It is true that the number of import terminals around the world is growing. It is also true the number of export terminal and the capacity of existing export facilities around the world is also growing.

The second thing I would observe is that natural gas is already a commodity, it is a commodity that is traded freely on the commodity markets in the United States, in the UK and to an increasing extent in continental Europe. It is not a commodity type product in the Far East because the markets are not liberalised and open as matter of policy at this time.

11:48

11: 49

11: 49

11: 49

11: 50

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

1

2

3

4

5

6

7

Once you create a commodity market you are subject to market forces. We cannot obviate and we cannot ignore that and we cannot stop that. What, in my experience, though is the case is that while there may be a market that reflects daily or monthly price conditions, such as The National Balancing Point Market in the UK, that market is either often driven or influenced by financial players rather than people who are physically buying and selling gas and, in fact, a very small proportion of the gas that is ultimately sold and delivered on a physical basis is subject to those kind of wild gyrations. There is no question that there will be a long term influence. But, also, I think it is fair to say that in the market offerings that gas suppliers in the US and in the UK make to their end consumers, that is the residential customer, just by the nature of the business, they generally offer fixed or firm prices for extended periods of time, even though the underlying commodity they are purchasing may be fluctuating and gyrating. Very different than the petrol market, where your petrol station can change the

1	price on a darry or weekry basis. It is very difficult
2	to do that in a natural gas market. For one thing, the
3	gas companies don't read the gas metres every day. So
4	that you only can read the gas metre once a month so
5	you can't possibly calculate the daily consumption and, $_{11:5}$
6	therefore, apply any kind of daily price fluctuation.
7	
8	I mentioned the situation in the UK. Where, yes, there
9	is an affect on the UK market of high oil and gas
10	prices in Europe and that's resulting in increases in 11:5
11	natural gas prices at the consumer level in the UK.
12	But those tend to happen on widely spaced intervals,
13	every 6 to 12 months. And I believe, and i am not an
14	expert in this area, but I believe similar dynamics are
15	also seen on the Irish and Northern Ireland markets.
16	MR. J. McELLIGOTT: And currently so in the
17	European market, our
18	prices, do they tend to be bought at the current market
19	prices or do they generally, and the other LNG
20	importation terminals, do they generally fix a price in $_{11:5}$
21	the future, at the moment? Do they try to go into the
22	future, fix the price for a future supply of gas?
23	MR. SHEARER: Mr. Inspector, I am not
24	quite sure I understand the
25	question. I will try and answer what I think the
26	question is.
27	
28	Any company that is buying or selling natural gas or
29	LNG, and let's just stick to LNG, will often purchase.

and particularly in the European environment, the LNG	
is normally purchased under long term contracts,	
oftentimes with a price that is fixed with reference to	
the price of petroleum products either crude oil, or	
heating oil, distillate oil, No. 2 oil or heavy fuel 11	: 52
oil and that price is adjusted on a quarterly or	
other interval basis. However, that buyer is then in	
no way constrained, the LNG buyer is no way constrained	
from going into the financial markets and taking	
whatever financial decisions, in terms of commodity	: 52
hedging or speculation, depending on which one you are	
more interested in, in terms of using that to affect	
their realised or realisable price on a financial	
basis. And in turn, their decision, as I described in	
my last response, to sell into a consumer market does 11	: 52
not reflect necessarily their decisions as far as	
anything they may have done on the financial or	
commodity side of the business. And oftentimes they	
see the financial side is offering them a competitive	
advantage. So, where British Gas, maybe, is seeking to $_{ m 11}$: 53
raise its gas prices in the UK by 15%, I believe I read	
that one of their competitors is seeking an increase of	
only 7%. Presumably, they have been able to find a way	
of mitigate those price rises, by either physical	
transactions they had undertaking on financial 11	: 53
transactions they had undertaken.	
MR. J. McELLIGOTT: When they do that fixing	
does that guarantee them a	
supply of the LNG as well?	

I	MR. SHEARER: Mr. Inspector, the issue of	
2	the terms and conditions	
3	for the supply of LNG are issues that are generally	
4	written into the supply contracts between the LNG buyer	
5	and the LNG supplier. The decisions to enter into the 11:8	53
6	financial markets by and large, in my experience, are	
7	decisions that are made independent of those decisions.	
8	Obviously it is not obvious, maybe to me it might be	
9	and maybe I should explain. If we enter into a 20 year	
10	contract for the purchase of LNG we cannot go into the 11:5	54
11	financial market and hedge that forward for 20 years.	
12	There is no such financial instrument that exists.	
13	MR. J. McELLIGOTT: But would the supply be	
14	guaranteed?	
15	MR. SHEARER: Mr. Inspector, the LNG 11:8	54
16	supply terms and conditions	
17	are a function of the terms and conditions imbedded in	
18	the LNG supply contract, which is a matter of	
19	commercial negotiation between the buyer and the	
20	seller. They can vary for all sorts of reasons and	54
21	they it can have all sorts of exceptions and conditions	
22	attached to them. One example would be force majeure.	
23	We have an incident with a ship that's delayed by	
24	weather, there is a pipeline break somewhere, you can	
25	come up with all sorts of examples of what they call	54
26	"acts of God" that might result in the temporary	
27	suspension of deliveries.	
28		

There can be commercial considerations in contracts,

and these are varied and many, that could change the rate of flow of LNG supply. For example, Ireland has a much stronger or a much more pronounced need for natural gas in the wintertime, as you might imagine, and less in the summertime. So, it may well be that an 11:55 LNG supply contract for Ireland would incorporate a different level of delivery and purchase obligation in the winter period and a much lesser one in the summertime, when the island market cannot absorb the entire throughput potentially.

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

1

2

3

4

5

6

7

8

9

10

That's one of the reasons, for example, that you will see in our submissions and in our comments or evidence in the EIS, this flexibility of regasification that is at the facility. Yes, it is designed to provide 400 11: 55 million cubic feet of natural gas a day to the Island. But it is also designed to be able to raise that very rapidly and at very short notice to 50% more. million cubic feet a day. That would reflect, for example, market conditions, which very often in this 11: 56 part of the world, as you might imagine, and influenced by northwest Europe, are driven by the weather. have a warm stretch of weather, prices will come down. If we have a very sustained cold period of weather prices will tend to jump up. That's the experience in the American market, it is the experience in the European market. Increasingly, the UK market is characterised by very low prices in the summer and very high prices in the winter.

1	MR. J. McELLI GOTT:	Who will own the LNG
2		when it is put into the
3	storage tanks? Will it be E	Bord Gáis? Will it be Irish
4	owned at that stage? Or wil	I it still belong to
5	Shannon LNG?	11: 56
6	MR. SHEARER:	It will be Irish owned
7		because it will belong to
8	Shannon LNG. Shannon LNG is	s an Irish company,
9	incorporated in Ireland.	
10	MR. J. McELLIGOTT:	So it will be owned by 11:57
11		Shannon LNG, the LNG that
12	is in the tanks?	
13	MR. SHEARER:	Ri ght.
14	MR. McELLI GOTT:	It will only be sold
15		with yeah, okay.
16	Is there a possibility to be able to export the LNG	
17	that's in the storage tanks and to ship it back out	
18	again, put it back into tank	kers?
19	MR. SHEARER:	Mr. Inspector, it is
20		possible to take LNG out of 11:57
21	the storage tanks and onto a ship. I mentioned in my	
22	rebuttal evidence that that, in fact, would be very,	
23	very unusual. I am only per	rsonally aware of one
24	instance that ever occurred	anywhere in the world, and
25	that had to do with somethin	ng in Spain, a couple of 11:57
26	years ago, where they had mu	ultiple terminals and they
27	had an inventory problem in	one terminal and so they
28	solved it by shipping LNG fr	rom another terminal. So
29	they took LNG out of one Spa	anish terminal and moved it

1	to an adjacent Spanish terminal. I don't see that		
2	situation ever applying in the Irish context.		
3	MR. J. McELLIGOTT:	That's all, thank you very	
4		much.	
5	I NSPECTOR:	Thank you, Mr. McElligott.	11: 58
6		Does anybody else wish to	
7	ask questions of either Mr.	Power or Mr. Shearer?	
8	Okay, Mr. Brani gan.		
9	MR. BRANI GAN:	Thank you Mr. Shearer, that	
10		was quite interesting.	11: 58
11	There was no need, and shou	ld never be any need, for	
12	yourself or Mr. Power to ha	ve to tell us how	
13	experienced you actually are	e. That is accepted. Now,	
14	you made one cardinal error	, and that is to say that	
15	Ireland has no gas fields.		11: 58
16			
17	Now, in our archives I have the records since 1921 of		
18	the coal deposits in Ireland. That is a beautifully		
19	produced map of one particular field down in Kilkenny,		
20	in Tipperary. Now, not alo	ne are there deposits, they	11: 59
21	have never been good quality, and I am using a term		
22	that I only used when I was a boy, they are using		
23	anthracite, which is very s	low burning and not	
24	highly well, certainly as	s far as domestic use is	
25	concerned, and perhaps indu	strial use, it wasn't very	11: 59
26	good. But there is a possi	bility that gas can be. The	
27	anthracite may be not as po	rous as, say, down off	
28	Kinsale, where the rock mate	erial can contain the actual	
29	das But nevertheless it may very well be that some		

1	of the coal fields that we	have I have got the	
2	charts of eight in fact may be able to be useful in		
3	working out an alternative	suppl y.	
4			
5	Now, there is one other poin	nt. In the recent	12: 00
6	legislation on energy the G	legislation on energy the Government has given notice	
7	that they intend, if possib	le, and if necessary, to	
8	reclaim these various coal	feeds and explore them.	
9	Now, as you probably know,	the technique by which this	
10	is done, it is not a questi	on of digging out the coal,	12: 00
11	but rather setting fire to	it in situ and releasing	
12	whatever gas that may actua	lly be there. And, as I	
13	say, we have gas I beg ye	our pardon. We have coal,	
14	it may not be as good as we	would like, but	
15	nevertheless it is there and	d the Government is,	12: 00
16	according to recent legislation, reserving the right to		
17	have it explored.		
18			
19	Now, there is one very good	field off the Kish bank, in	
20	the Irish Sea, coming quite	close to our coast, etc.	12: 01
21	and I understand that there are commercial bodies at		
22	present exploiting that particular field. However, I		
23	just wanted to correct you	on that one particular	
24	issue. Thank you, sir.		
25	MR. SHEARER:	Thank you.	12: 01
26	I NSPECTOR:	Okay. You have no comment	
27		on that I take it.	
28	MR. SHEARER:	All I would observe is	
29		Ireland has got some very	

qualified independent oil and gas companies who, I		
think, would be very interested in Mr. Branigan's		
views. I am not in the oil	and gas exploration	
business so I really don't	personally qualify to	
comment on that. I am fami	liar with anthracite though. 12:	: 01
MR. BRANI GAN:	My hearing is not good and	
	l am missing an awful lot	
of what is being said.		
MR. SHEARER:	I am sorry, Mr. Branigan.	
	I was saying that there are 12:	: 02
some very, very highly rega	rded independent oil and gas	
companies located here in l	reland and I am sure they	
would be very interested to	hear your views on the	
potential for gas explorati	on, be it in the coal beds	
or in the offshore. And ou	r company is, in fact, 12:	: 02
looking at parts of Ireland	looking at parts of Ireland, as we look elsewhere in	
the world, in the upstream and the exploration		
production sector. But tha	t's not my specific area of	
experti se.		
I NSPECTOR:	Okay. The Lady beside 12:	: 02
	Mr. Brani gan.	
MS. McMULLAN:	Thank you. I am Catherine	
	McMullan, I am representing	
the Kerry association of An	Taisce. I have listened	
with great interest to Mr.	Shearer's presentation. 12:	: 02
There are a number of point	s I would like to bring up	
though, I have a few questi	ons.	
One just short comment. I	noticed when you were	
	think, would be very intereviews. I am not in the oil business so I really don't comment on that. I am familm. BRANIGAN: of what is being said. MR. SHEARER: some very, very highly regared companies located here in I would be very interested to potential for gas exploration or in the offshore. And our looking at parts of Ireland the world, in the upstream production sector. But the expertise. INSPECTOR: MS. McMULLAN: the Kerry association of An with great interest to Mr. There are a number of point though, I have a few questi	think, would be very interested in Mr. Branigan's views. I am not in the oil and gas exploration business so I really don't personally qualify to comment on that. I am familiar with anthracite though. MR. BRANIGAN: My hearing is not good and I am missing an awful lot of what is being said. MR. SHEARER: I am sorry, Mr. Branigan. I was saying that there are 122 some very, very highly regarded independent oil and gas companies located here in Ireland and I am sure they would be very interested to hear your views on the potential for gas exploration, be it in the coal beds or in the offshore. And our company is, in fact, looking at parts of Ireland, as we look elsewhere in the world, in the upstream and the exploration production sector. But that's not my specific area of expertise. INSPECTOR: Okay. The lady beside Mr. Branigan. MS. McMULLAN: Thank you. I am Catherine McMullan, I am representing the Kerry association of An Taisce. I have listened

1	reading it, Mr. Shearer, that you correctly translated
2	gasoline as petrol. I just wanted to make sure that
3	wherever we see "gas" written in a document that comes
4	from America can we take it, it is methane they are
5	talking about and not petrol? 12:03
6	MR. SHEARER: Mr. Inspector, in respect
7	of this application, this
8	EIS, I think it is fair to say that we have tried to be
9	extraordinarily careful to make sure that when we say
10	gas we mean natural gas. Because I know that I am 12:03
11	familiar, having spent the first 21 years of my life in
12	Scotland, I am more than familiar with the difference
13	between gas and petrol, so. But I have spent enough
14	time in the States and I am not always culturally
15	sensitive, so if I do slip up and I talk about a gas 12:03
16	station I mean a petrol station. So, please, if you
17	have a question as to whether I am referring to one or
18	the other don't hesitate to ask me for clarification.
19	MS. McMULLAN thank you. Now, my next
20	question is relating to 12:04
21	your own list of experience over the years. You
22	mentioned that you worked for Poten & Partners, who are
23	now part of the Shannon LNG Group. I was reading the
24	Annual General Report from Hess and it mentioned Poten
25	& Partners, but it really didn't give us any insight as 12:04
26	to what they do, so maybe you could tell us a bit about
27	that?
28	

The other one I want to ask you about was you worked

1	for the Cabot Corporation, who, obviously, do have	
2	experience with LNG, during that time had you any	
3	direct experience with setting up the new LNG plant on	
4	behalf of the company?	
5	MR. SHEARER: Very good questions. Yes.	12: 04
6	Now, let me deal with Poten	
7	& Partners first. Poten & Partners is a privately held	
8	company, it has a large consulting business, it also	
9	operates in the commercial sector, in the energy	
10	business, it is one of the world's larger brokers of	12: 05
11	petroleum tankers, oil and product tankers. We have	
12	I shouldn't say we I used to work for Poten and now	
13	I work for Hess. Poten has offices in London, New	
14	York, Perth, Athens and China. The web site is	
15	www.poten.com and there is a lot of information about	12: 05
16	the company there that probably would be helpful to	
17	you. There is no annual report because it is a private	
18	company and does not have public shareholders. But	
19	there is a lot of background on the company available	
20	there. I am happy to take whatever other time you like	12: 05
21	to talk about that. Mr. MacIntyre, who will be coming	
22	up, is an employer of Poten, he is also very familiar	
23	with the company. They are very experienced in LNG and	
24	have been involved in many projects.	
25		12: 06
26	Turning to the Cabbitte Corporation. I joined that	
27	company in 1978. My first assignment was to work on	
28	tariff and fees for the LNG terminal that was located	

in Boston Harbour and, also, surprisingly enough,

involved in public outcry about the risks of accidents to LNG ship and in terminals and from accident and, believe it or not, terrorists, they were a big issue in the 1970's as well.

5

7

8

9

10

11

12

13

1

2

3

4

12:06

12: 06

As far as setting up business. I ran the business, the company, that LNG company, from 1987 until we sold it in 2000. I was directly responsible for the activities of the LNG terminal in Boston Harbour, including several expansion to were conducted at that terminal. We had, I think we would argue, an impeccable safety record. We regularly won the corporation's prize for the best safety performance.

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

As far as direct experience in setting up an LNG 12: 07 project, somewhere on the internet there is an article from the Wall Street Journal that describes the liquefaction project in Trinidad and Tobago, it is called Atlantic LNG. I was heavily instrumental in both conceiving of and founding that business. think of a liquefaction project, it is like an import terminal with a lot more kit, as they say over here, bolted on to the front end of it. That's the part of the process that takes the natural gas and converts it into the liquid. Then it is placed into storage tanks, 12: 07 with are identical to those that we would install in Shannon, and it is exported onto ships at a jetty very similar to the one that will be going into Shannon as So, the back end of that plant is almost well.

1 identical to the Shannon plant, it is just they cool 2 the gas down and we warm it up. 3 MS. McMULLAN thank you. Now, I have 4 some other points that were actually raised by the Kilcolgan Residents Association 5 6 and they were part of An Taisce's submission to An Bord 7 Pl eanál a. One of them was the difficulty of getting 8 the QRA report, which I have not seen yet. I was not 9 able to get it from the internet. I was not aware that 10 a hard copy was available from the office. I think 11 maybe it is something that should be made available to 12 the hearing here in time for the health and safety module. 13 If you could arrange that. 14 15 The other thing that we asked for as well was a typical 16 set of analysis for the different sources. That was 17 brought up this morning. Now, I am more interested in it from the point of view of is there any great 18 19 difficulty from the hazard point of view? The physical properties of these different sources, are they very 20 12: 08 21 much different? Or are they fairly close together? 22 And whether it makes much difference where you bring it 23 from. 24 25 The other thing we had also asked for was Material 12: 09 26 Safety Data Sheets. Again, I can't see why there 27 should be any difficulty with supplying these to the 28 You comment they are available on the

internet.

Now, perhaps you don't appreciate some of us

1 here are here in a purely voluntary capacity, we have 2 no access to offices and all the modern equipment, and 3 it simply isn't really feasible for us to be looking 4 for that sort of thing. And it should be something that is readily available in your corporation. 5 12:09 6 again, I would like to see those made available to the 7 heari ng. 8 9 I noticed, too, that you co-authored a book "LNG, A Non-technical Guide". Now, I don't know if that would 10 11 be of use to us. But, maybe, again, if it is it could 12 be something that could be made available. 13 14 A lot of these questions that I have raised are 15 probably more health and safety ones, so if you want to 12:10 16 leave them over to the health and safety module that's 17 fi ne. But I will leave it at that. 18 MR. SHEARER: Let me, first of all, on 19 the matter of the QRA. there is a copy sitting on the table of documents right 12:10 20 21 in the middle of the room here. So, that's available 22 and I am sure we will make additional copies available. 23 I apologise for the difficulties people have had 24 getting hold of that. As I said, in the ordinary 25 course of events we wouldn't even be required to 12: 10 26 release that into the public domain and we made a 27 decision to do that. I don't think we realised it was 28 going to be this complicated for everybody.

we have also been willing to send it out and make hard

I	copies available through the Listowei office. So, if	
2	somebody was having difficulties we have not always	
3	heard about it. In the future, I would say if you are	
4	having difficulty getting something just call the	
5	office in Listowel and ask them and they will get it to	12: 10
6	you, just giving the time that it takes to get.	
7	Whether there has been communication breakdown in the	
8	past or not, we will commit that we will get the	
9	documentation to you that we can.	
10		12: 11
11	We will also attempt to locate whatever Material Safety	
12	Data Sheets. They tend to be very short in nature, but	
13	we have got some technical people here and they will	
14	talk about that in more detail when they get up for	
15	their part of the presentation.	12: 11
16		
17	Finally, I think you raised a question on the	
18	composition of the LNG. That is a question that was	
19	asked by the HSA. We responded to that and, I believe,	
20	both the question they asked and the response is on the	12: 11
21	web site. But we will certainly make sure there is	
22	hard copies of that available here as well.	
23	INSPECTOR: Ms. Griffin?	
24	MR. SHEARER: Oh, sorry, you asked about	
25	the book. We have a	12: 11
26	limited number of copies of the book and,	
27	unfortunately, I hate to say this, it is expensive. It	
28	is not a freebie. I say that with proprietary	
29	interest, as an author. But we can make a couple of	

1	copies available on the	table here.	
2	I NSPECTOR:	Will there be a charge for	
3		those?	
4	MR. SHEARER:	As long as they are there	
5		at the end of the	12: 12
6	proceeding and we can re	cover them.	
7	I NSPECTOR:	Right. And you will sign	
8		any that anybody wants to	
9	buy?		
10	MR. SHEARER:	I am happy to autograph	12: 12
11		them. My co-author is not	
12	with me, but I will happ	ily autograph them for whoever	
13	would like one.		
14	MS. GRIFFIN:	Catriona Griffin again.	
15		Mr. Shearer, just that	12: 12
16	second last comment you	second last comment you made before you were speaking	
17	about the book, about th	e LNG coming from different	
18	source and would there b	source and would there be molecular differences. Well,	
19	as part of my written su	bmission I put in a report from	
20	the USA, March 2005:		12: 12
21	"ING causes ninelin	e Leaks and house	
22	explosion. On July sponsored study law	e leaks and house 7th, 2005 a company nched after a use exploded in late	
23	district heights ho March found subtle	use exploded in late	
24	di fferences"	mor cear ar	
25			12: 13
26	I NSPECTOR:	Sorry, I am not catching	
27		the names of the places.	
28	MS. GRIFFIN:	Sorry, I will speak up.	
29			

1	"USA March 2005On July 7th, 2005 a company sponsored study, launched after	
2	a district heights house exploded in Late March. Found subtle molecular	
3	differences in the imported liquified natural gas the utility began using in	
4	August 2003 were drying the rubber seals of ageing metal couplings that	
5		12: 13
6	pipelines led to about 1400 gas leaks during the past two years and has	
7	required the company to launch a 144 million dollar project to replace lines	
8	300 E00 00E0 1WO 010E1 100SE	
9	explosions in the area are now under investigation."	
10	1	12: 13
11	MR. SHEARER: Mr. Inspector, I believe	
12	that refers to a proceeding	
13	that was taken up by the Federal Energy Regulatory	
14	Commission, the US safety regulators. It was a	
15	complaint by a company called Washington Gas Lite,	12: 14
16	which serves the area around Washington DC. I am sure	
17	one of our safety experts will be a lot more detailed	
18	on this than I am. But my understanding, the bottom	
19	line of that investigation conducted by the Federal	
20	Energy Regulatory Commission found that it was the	12: 14
21	company that was at fault for maintenance practices.	
22	The couplings in question were decades old.	
23	Fortunately, Ireland, as a relatively new gas consumer,	
24	I believe I would be correct in saying, probably	
25	doesn't employ anything like that in its system. So	12: 14
26	that's not even an issue here.	
27		
28	But the root bottom line cause, as I understand it, was	
29	found not to be LNG but Washington Gas Lite's own noor	

1	practices in maintaining its system. But we will get a	
2	more detailed answer by the time the safety and	
3	operating experts are up.	
4	I NSPECTOR:	And you are saying that, as
5		far as you are aware, it is 12:15
6	not due to the particular c	ontent of the gas?
7	MR. SHEARER:	No. That was the claim
8		they made and they were
9	unable to support it and my	understanding is that the
10	safety regulator found that	they had, I hate to say it, 12:15
11	almost made a spurious clai	m. But it was almost as if
12	they were looking for someo	ne to blame for their own
13	failures. It was not attri	butable to LNG.
14	MS. GRIFFIN:	Sorry, what was the name of
15		the company, Mr. Shearer? 12:15
16	MR. SHEARER:	Washington Gas Light was
17		the name of the company
18	that operated the system with the couplings. Good	
19	question. I think if you search the web site you will	
20	find all the information you will need on it. Sorry, 12:15	
21	but I don't have that information at my fingertips, I	
22	just remember the case.	
23	I NSPECTOR:	Mr. Fox.
24	MR. FOX:	Mr. Fox, Tarbert
25		Development. Having made a 12:16
26	submission myself in relati	on to the ten year period
27	that the licence would be g	ranted for the planning
28	permission, we in Tarbert Development have serious	
29	concerns. Now, you may rul	e that you will discuss that

1 later on, and I will accept that ruling, but our 2 concern is that the traffic would be flowing back and 3 forth along that roadway for ten years. We think it is 4 an extraordinary long length of time. We have been told that the building period will take approximately 5 12:16 6 four years, to get the tanks up and to get the pipe 7 work and the plant running. We don't see the need for 8 the additional six years. That's one point. 9 10 The other is I want to be assured that the tank sizes. 12: 16 11 as indicated in the planning application, that that 12 won't change. In also concerned that Mr. Shearer made some mention about a "tank farm", and I have some 13 concerns about that as well. Is there a likelihood 14 15 that more than four tanks will be built on the site? 12: 17 16 MR. SHEARER: Let me address the first issue, which relates to 17 18 construction. I am not the right expert to talk about 19 the construction traffic impacts, but people will come 20 up and discuss that with you. The same with the height 12:17 21 of the tanks, we are going to cover that in evidence 22 subsequent to mine. 23 24 As for the number of tanks. It is my professional -- I 25 mean, I don't think I used the word "tank farm", I tend 12:17 26 to be very careful about those things, because they 27 bring to mind this horizon full of oil tanks that 28 people think of. That we have no intention of, and I

cannot see any case under which there would be more

1	than four tanks ever placed	on that property.
2	MR. FOX:	Thank you for that
3		cl ari fi cati on.
4	I NSPECTOR:	Mr. Shearer, can you
5		address the size of the 12:18
6	tanks, is there any possibi	lity?
7	MR. SHEARER:	I think we will address
8		that in the evidence coming
9	up. But, in my view, what	we have designed are tanks
10	that will not increase in s	ize. And, both from our 12:18
11	construction contractor and	from our own technical
12	experts, there will be a pro	esentation that will go to
13	that issue specifically. T	here are actually very good
14	technical reasons that the	tanks will not be any larger
15	than they are being proposed	d. 12:18
16	I NSPECTOR:	I will just point out on
17		that, that we have a
18	particular application in front of us and the tank	
19	sizes are frozen in that ap	pl i cati on.
20	MR. SHEARER:	Mr. Inspector, if I might, 12:18
21		we will address that, too,
22	again in the subsequent submittal with the designers	
23	and the operations folks.	
24	I NSPECTOR:	Briefly, Mr. McElligott, I
25		think you have had a fair 12:18
26	say.	
27	MR. J. McELLI GOTT:	Just about the tank size
28		there. I think in the
29	document they submitted the	re are two different tank

1	sizes mentioned. One says	50 metres and if you look at
2	the drawings you realise th	ney go up to 72.5 metres, or
3	something like that. 50 me	etres for the height of the
4	wall and then it goes up 10) metres, to 60 metres, to
5	the top of the dome. So I	just wonder. I raised the 12:19
6	point earlier in my initial	submission anyway, that
7	there was different sizes m	nentioned in the application,
8	so I was just wondering whi	ch was the correct one?
9	MR. SHEARER:	Mr. Inspector, that
10		specific issue was raised 12:19
11	in the submission to the Bo	pard, we will have a very
12	specific answer to that whe	en we get to that section of
13	the hearing. We will remov	ve the ambiguity or make
14	clear where that confusion	is coming.
15	MR. J. McELLI GOTT:	Wouldn't that mean then 12:19
16		it would be a different
17	thing you are applying for.	
18	I NSPECTOR:	Sorry, I didn't catch that
19	at all.	
20	MR. J. McELLI GOTT:	Wouldn't that mean then
21		that you are applying for
22	something you are changi	ng the application so; is
23	that what you mean?	
24	I NSPECTOR:	No, he's going to answer
25		the question. I think 12:19
26	there may well be a clear a	nswer and there, hopefully,
27	will not be any ambiguity.	So, I think we will leave
		I de the contract of Ma
28	it at that. Does that conc	clude the questioning of Mr.

1	MR. FOX:	I would have some questions	3
2		for Mr. Power, if I could	
3	pl ease.		
4	MR. SHEARER:	Thank you.	
5	MR. FOX:	Just give me a second to	12: 20
6		get myself together on	
7	this, because I was pa	ying so much attention to what	
8	was going on.		
9			
10	The main one is the ap	oplication for an 110kv line of	12: 20
11	supply out to the power	er site out to the LNG plant.	
12	l would have great cor	ncerns with that particular power	
13	line, and I accept tha	it it is regarded as a separate	
14	application, but for t	the purpose of the oral hearing I	
15	would like to see some	e conditions attached to that.	12: 20
16	That particular road k	Cerry County Council, as part of	
17	their Development Plar	n, if I am correct, have envisaged	I
18	that road being a tour	ist type road, and if an 110kv	
19	line and I believe	there are going to be two of	
20	them were to go out	along that road and be above	12: 21
21	ground that would spoi	I whatever bit of scenery is out	
22	there. I believe very	firmly that it should be a	
23	condition of the appli	cation for the line that it	
24	should be underground.	It will, perhaps, have to	
25	travel a distance of a	bout two, two and a half	12: 21
26	kilometres, which in c	abling terms is not very far. I	
27	also want to make sure	e, if possible, that any cabling	
28	or wire lines, overhea	nd lines shouldn't be on the site	
29	at all. If at all pos	sible they should be underground.	

1	I have made that in my pa	rticular submission to the
2	Board, because I do think	it is important.
3	MR. POWER:	Mr. Inspector, that will be
4		a separate application made
5	by EirGrid. We have init	iated discussions with EirGrid 12:2
6	on a power supply to the	terminal. I don't believe
7	that we have the final su	bmissions from EirGrid yet, or
8	if they have arrived it i	s only just recently. But we
9	will be addressing the po	wer supply issues with EirGrid
10	di rectl y.	12: 2
11	I NSPECTOR:	Can you say at this stage
12		whether there has been any
13	consideration for going u	nderground?
14	MR. POWER:	EirGrid, I understand, are
15		obliged, let's say, to 12:2
16	examine the alternative m	ethods for safe supply to the
17	terminal and that they wi	II advise on that. I
18	understand that they do I	ook at alternative approaches.
19	I NSPECTOR:	0kay.
20	MR. FOX:	I also would like to raise 12:2
21		issue with the gas line.
22	Mr. Power mentioned that	yesterday as well. It would
23	appear that LNG are now g	oing to be responsible for the
24	line as distinct from Bor	d Gáis. I think it is very
25	important, for good neigh	bourliness if nothing else, 12:2
26	for commercial reasons as	well, that there should be a
27	spur line when that li	ne is laid it should be part
28	of the condition that the	re would be a spur line, not
29	very long, maybe 6, 8 fee	t, with a blank in it, tapped

1	off with the intention of g	oing to Tralee at some	
2	future date. And there sho	uld be, likewise, a spur	
3	line to go down to the powe	r station site in Tarbert.	
4	That has many advantages fr	om an economic point of	
5	view, the overhead power li	nes down at Tarbert power	12: 23
6	station, it provides a read	y site for a new power	
7	station to be built there i	n the future, and it allows	
8	the town of Tralee to expan	d if it needs to use gas.	
9			
10	What I don't want to see ha	ppening is the gas line	12: 23
11	being put down, one straigh	t run to Foynes, and then in	
12	two, three, four or five ye	ars someone coming back and	
13	saying 'oh, wouldn't that b	e a good idea. We need to	
14	tap off to Tralee and that	means cutting off the supply	
15	and digging up', and so on.	They could have a ready	12: 24
16	connection, all they'd need	to do is weld it, for both	
17	locations.		
18	MR. POWER:	Mr. Inspector, Mr. Fox is	
19		correct. We have I ad	
20	discussions with BGE on the	m building, owning and	12: 24
21	operate the pipeline. Or a	lternatively, Shannon LNG	
22	building, owning or operati	ng the pipeline, or a	
23	subsidiary thereof. Under	both scenarios we envisage	
24	that there will be open acc	ess to the pipeline. In	
25	other words, third parties	will have access to the	12: 24
26	pi pel i ne.		
27	I NSPECTOR:	What does "open access"	
28		mean?	
29	MR. POWER:	Open access means that	

1		the third parties seeking a	
2	gas supply can seek access	to the pipeline and achieve	
3	a gas supply.		
4	I NSPECTOR:	But physically what would	
5		it involve? Would it mean	12: 25
6	cutting the supply in order	to make a spur?	
7	MR. POWER:	It is like the access that	
8		we will we will have	
9	access, open access now into	o the National Grid, that's	
10	the same type of situation.	That will involve, let's	12: 25
11	say, making a connection to	the grid and the technology	
12	is there to do that today.		
13	I NSPECTOR:	Without huge disruption?	
14	MR. POWER:	Correct. That's correct	
15		Mr. Inspector. That will	12: 25
16	continue, that methodology v	will be available for the	
17	pipeline from the terminal u	up to Foynes as well.	
18	I NSPECTOR:	Okay, Mr. Fox, that really	
19		is a matter for another	
20	day.		12: 25
21	MR. POWER:	By the way, I should add	
22		that we welcome this. This	
23	is the whole purpose of our	proposal, because that	
24	means that there are custome	ers out there looking for	
25	our gas. Thank you, Mr. Fox	×.	12: 26
26	MR. FOX:	Just for clarification. As	
27		a community we are anxious	
28	that we would get some benef	fit of the gas, real usage,	
29	local to us. If there is a	power station down in	

1	Tarbert about to close, usin	ng oil, and you can transfer	
2	gas down there and continue	on with sustainable	
3	employment and give cleaner	fuels that's wonderful. If	
4	there is potential developme	ent in Tralee, as there	
5	should be, and gas can become	me an energy source. It is	12: 26
6	a simple thing, in my view,	to make a short spur, with	
7	an isolation and a blank. I	f that can be part of the	
8	conditions coming from this.	I accept it is a separate	
9	application, but I don't war	nt it to be lost sight of.	
10	I NSPECTOR:	I think Mr. Power has	12: 26
11		answered that, that he	
12	favours that sort of approac	ch.	
13	MR. POWER:	Mr. Inspector, I should add	
14		that this was one of the	
15	primary purposes, let's say,	why this proposal has come	12: 27
16	forward, was to encourage, i	n many discussions that I	
17	have had with the Shannon De	evelopment, was to encourage	
18	regional development. I am	of the same view of Mr. Fox	
19	in that respect.		
20			12: 27
21	Also, I should point out that	at the Corrib pipeline that	
22	has been built from the Nati	onal Grid up towards Mayo,	
23	that has spurs off that as w	well. And new spurs can be	
24	added if the market evolves.	So Mr. Fox and I are on	
25	the same wavelength in this	respect. Thank you,	12: 27
26	Mr. Inspector.		
27	MR. KEARNEY:	Sorry, Inspector, I just	
28		want to make one point	
29	there.		

1	I NSPECTOR:	Could I have your name
2		agai n.
3	MR. KEARNEY:	Adam Kearney. From my
4		reading of the National
5	Spatial Strategy, I think,	maybe I can be contradicted, 12:28
6	but I would believe that it	is Bord Gáis's intention,
7	if they were supplying gas	to the Kerry area, that they
8	would do it by extended the	Mallow line to the
9	Killarney and Tralee hub.	I just want to put that on
10	the record.	12: 28
11	I NSPECTOR:	Okay. Does that conclude
12		questions to Mr. Shearer
13	and Mr. Power? Okay. Well	, it is half past twelve at
14	this stage, I was going to	suggest well, I was going
15	to suggest that we would ta	ke a five minute break, but. 12:29
16	Do people want to press on	now to lunchtime? Okay.
17	Well, who is your next cont	ributor then?
18	MR. O'NEILL:	Mr. Power might have
19		thought he got off the
20	hook, but he has got to giv	re a presentation in relation 12:29
21	to site selection. Mr. Ins	pector, apart from the
22	précis of Mr. Power's evide	nce we are also handing out
23	a reference list for the su	bmissions. Mr. Power, in
24	his report, has referred, a	nd indeed in his earlier
25	report, referred to submiss	ions by reference to certain 12:29
26	numbering and just for the	ease of the parties there is
27	a separate sheet being hand	ed out identifying to whom
28	those references are made.	
29	I NSPECTOR:	Thank you, I was wondering

1		about that, what the codes	
2	referred to and should I	be aware of them.	
3	MR. O'NEILL:	No, it is simply an	
4		internal referencing from	
5	our point of view, it has	s no other significance I don't	12: 30
6	think. And obviously, si	ir, we have as best possible	
7	identified the issues tha	at are raised by various	
8	parties and the appropria	ate expert is dealing with	
9	those. Clearly, if any o	of them fall between the stools	
10	no doubt we will be told	and we would welcome anyone	12: 30
11	raising an issue that the	ey feel has not been properly	
12	dealt with, or dealt with	h at all.	
13	I NSPECTOR:	0kay.	
14			
15	MR. POWER PRESENTED HIS S	SUBMISSION ON SITE SELECTION AS	12: 30
16	FOLLOWS:		
17			
18	MR. POWER:	Mr. Inspector, as Managing	
19			
		Director of Shannon LNG I	
20	was responsible for iden		12: 30
20 21	·		12: 30
	project. I also managed	tifying the need for the	12: 30
21	project. I also managed preferred site and superv	tifying the need for the the process of selecting the	12: 30
21 22	project. I also managed preferred site and supervolumentation, i	tifying the need for the the process of selecting the vised the preparation of the	12: 30
21 22 23	project. I also managed preferred site and supervolumentation, i	tifying the need for the the process of selecting the vised the preparation of the including the EIS. The purpose tatement is to tell you how the	12: 30 12: 31
21 22 23 24	project. I also managed preferred site and supervolution planning documentation, in of my evidence in this state.	tifying the need for the the process of selecting the vised the preparation of the including the EIS. The purpose tatement is to tell you how the site, owned by Shannon	
21 22 23 24 25	project. I also managed preferred site and supervolution, in planning documentation, in of my evidence in this standbank Development, that's the standbank project.	tifying the need for the the process of selecting the vised the preparation of the including the EIS. The purpose tatement is to tell you how the site, owned by Shannon	

The industry was aware of the forthcoming potential gas shortfall in the 90's and I was familiar with the possibilities that LNG might provide in Ireland. I believe that LNG would increase Ireland's security of supply and provide greater connectivity to the global gas market. I provided references to that in the statement.

12:31

12: 32

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

1

2

3

4

5

6

7

Japan's experience is worth noting because it imports nearly all its natural gas requirements using LNG. 12: 31 According to the University of Houston Law Centre Institute for Energy Law and Enterprise, by 2003 LNG carries had made over 40,000 voyages, covering 60 million miles and had not reported any significant accidents or safety problems in port or while at sea. 12: 32 For example, in 2000 on average an LNG ship entered Tokyo Harbour every 20 hours safely and without incident. These activities are continuing today. Hence with this as background and with the help of Peter Langford, who is the ex-Chairman of our 12: 32 consulting engineers, I set out to try and identify a potential site for the terminal.

2324

25

26

27

28

29

I was satisfied that LNG operations could be conducted safely and that Europe and Ireland were facing a gas supply shortfall. I discussed the concept with Peter to seek his input on the project concept in general and the site selection process in particular. I was familiar with the general characteristics that we would

1 require for a site. We talked about a number of 2 locations, especially existing ports around the 3 country, that might, among other things, have access to 4 deep water, provide a sheltered spot for a jetty and be 5 near the gas and electricity grids. 12:33 6 7 I will now discuss the site selection methodology and 8 cri teri a. The optimal site for an LNG terminal was 9 determined and is explained in Volume 2, Section 2.3.2 10 of the EIS. This site was determined by initially 12: 33 11 identifying coastal areas that met the marine 12 That's Phase 1 of the process. requirements. And then 13 identifying a site within the short listed coastal 14 areas that met the onshore requirements for the 15 terminal and which was available for acquisition in a 12: 33 16 reasonable timeframe. 17 18 In the first phase of site selection ports and bays 19 around the Irish coast for examined to identify 20 potential coastal areas that complied with the marine 12: 34 21 requirements given below and ease of access to the gas 22 transmission grid. The criteria used for the 23 identification of coastal areas are as follows: 24 25 Sheltered water with a minimum depth of 14 to 15 12: 34 26 metres at mean low water, to minimise the environmental 27 and economic impacts resulting from any requirement for 28 dredging or creating breakwaters or other artificial

infrastructure.

ı		
2	- Safe access for large ships to and from the sea.	
3		
4	- We were looking for a channel which is wide enough	
5	to accommodate the largest LNG ship contemplated and a	12: 34
6	nearby turning area of suitable dimensions to turn the	
7	LNG ship prior to or on completion of discharge.	
8		
9	- We were looking for a suitable location for the	
10	construction of a jetty and unloading facilities	12: 34
11	adjacent to the onshore portion of the site.	
12		
13	- We were looking for proximity to the gas	
14	transmission grid, at a point with sufficient pipeline	
15	size to ensure take way of the planned gas volumes	12: 35
16		
17	- Proximity to the electricity transmission grid was	
18	seen as a very favourable factor also, because of the	
19	relationship in modern economies between gas and	
20	el ectri ci ty, and	12: 35
21		
22	- Preferably, availability of existing marine support	
23	infrastructure, such as tugs, pilots, vessel tracking	
24	system or systems and shipping agents was seen as a	
25	favourable attribute.	12: 35
26		
27	Mr. Inspector, these criteria are compatible with	
28	Information Paper No. 14 prepared by The Society of	
29	International Gas Tanker and Terminal Operators, that	

1	is SIGTTO. That paper is entitled "Site Selection and	
2	Design of LNG Ports and Jetties" published in 1997. My	
3	colleague, Blair MacIntyreis an ex-Director and Vice	
4	President of SIGTTO and he will be happy to address any	
5	queries relating to the SIGTTO reference document.	12: 36
6		
7	Looking first at Phrase 1 - the coastal zone selection.	
8	An assessment was made of the suitability of a number	
9	of coastal areas which might satisfy the preferred	
10	marine requirements as outlined in volume 2, section	12: 36
11	2.3.3 of the EIS. Port and bays around the Irish coast	
12	were studied using Admiralty Charts and the Irish Cost	
13	Pilot Book. The coastal areas studies are shown on	
14	figure 1, which is shown on the overhead here.	
15		12: 36
16	As part of the evaluation of the port and coastal areas	
17	identified, the following areas, while affording	
18	shelter, there is 18 areas in total by the way	
19	were considered. Some of them were subsequently deemed	
20	unsuitable candidates as they did not have the required	12: 36
21	water depth or if there was sufficient water they did	
22	not have sufficient space for the port side facilities.	
23	These were Drogheda, Dundalk, Malahide Inlet, Dublin	
24	Port, Arklow Port, Rosslare Port, Waterford Estuary and	
25	Youghal Estuary.	12: 37
26		
27	In other words, these established ports were evaluated	
	cinc. no. de, these established per to no. e cra. dated	

1	The following areas, while possessing the required
2	water depths, were deemed unsuitable because they were
3	exposed to adverse weather and swell at various times
4	of the year. That is Galway Bay, it is open to the
5	west. Clew Bay, also open to the west. Broadhaven 12:3
6	Bay, open to the north. Killala Bay, open to the
7	north. Sheep Haven, open to the north. Lough Swilly,
8	open to the north.
9	
10	This left four areas that fulfil the criteria of both 12:3
11	deep water and shelter. They are Killary Harbour,
12	Bantry Bay, Cork Harbour and the Shannon Estuary.
13	Those four areas were evaluated. A summary of the
14	evaluation is provided here in my statement and it is
15	also provided in the EIS that has been submitted to An 12:3
16	Bord Pleanála. So, with your approval Mr. Inspector, I
17	do not intend to continue to read these.
18	I NSPECTOR: Okay.
19	MR. POWER: I would like though to
20	refer to, moving to section 12:3
21	6.4.4 entitled "Shannon Estuary" and I do intend
22	reading that because it turned out to be the site that
23	was selected.
24	
25	The preferred coastal Location chosen was the Shannon 12:3
26	Estuary. The Estuary is a major shipping route with
27	established marine facilities handling 10 million
28	tonnes of traffic per annum. The deep water channel
29	and shelter from the Atlantic swell ideal shipping

access for bulk carriers of 180,000 DWT which regularly enter Irish waters to deliver coal to the Money Point Power Station. The largest vessel handled to date was a 186,000 DWT and had a draft of 17.4 metres. The Shannon Estuary access is shallowest at the Ballybunion 12:39 Bar with 16.3 metres below Chart Datum, sufficient to take the largest LNG ships under construction at the time, and today as well. The estuary is very wide for much of its length, affording ample manoeuvring and turning room for LNG ships and safe clearance for all 12:39 other possible shipping activities.

In other words, it is near to being an ideal site for an LNG terminal. Additionally, our activities will not adversely impact other users of the estuary, as will be 12:39 explained by my colleague Mr. Blair MacIntyre.

There is a wave recorder buoy at Ballybunion Bar, which monitors sea and swell conditions at the bar. The data is transmitted to Shannon Estuary Port operations and are used as part of the decision making process for port entry for deep draft vessels. Deep draft -- that is more than 13 metres -- vessels sometimes take a pilot by helicopter in bag weather. There are three modern tugs based in the estuary, giving a combined total bollard pull of approximately 130 tonnes. There are some relatively small amounts of aquaculture activity at various locations in the shallower waters of the estuary west of the proposed site, these will

12: 40

1	not be impacted by the proposed development.	
2		
3	The high voltage electricity transmission grid and the	
4	gas transmission grid are located on the shores of the	
5	estuary. The gas transmission grid is approximately 25	12: 40
6	kilometres from the site and the natural gas pipeline	
7	has a 30 inch diameter in this area, sufficient to	
8	accommodate the proposed volumes without further	
9	expansion. The electricity grid has high voltage	
10	available approximately 6 kilometre from the proposed	12: 41
11	site, over at Tarbert.	
12		
13	This assessment strongly influenced our decision to	
14	prioritise Shannon Estuary at the time.	
15		12: 41
16	So, from the assessments provided above the Shannon	
17	Estuary was deemed to be the most suitable coast	
18	location for an LNG terminal. Its main advantages were	
19	its relatively sheltered deep water close to the shore,	
20	safe and unrestricted large ship access, proximity to	12: 41
21	the gas grid, the in situ support infrastructure and	
22	identification by the authorities of its suitability	
23	for marine industrial development, which dates, I	
24	suppose, back at least to 1959, but I suspect much	
25	further back than that.	12: 41
26		

So, we then turned to Phase 2 of the site selection process. We had identified the estuary as being suitable from the marine operations viewpoint and the

1	next stage of the assessment was to identify potential	
2	onshore sites. These are outlined in Volume 2, Section	
3	2.3.4 of the Environmental Impact Statement.	
4		
5	Arup Consulting Engineers agreed to investigate this	: 42
6	for me to see if they could identify a site on the	
7	estuary on which to locate the shore side facilities of	
8	the terminal. The site selection criteria were as	
9	follows:	
10	12:	: 42
11	- availability of land. We were looking for	
12	approximately 100 hectares.	
13		
14	- topography and deep water access. That's the	
15	topograph of the land adjacent to where we might have 12:	: 42
16	deep water access.	
17		
18	- We considered the ownership and zoning issues.	
19		
20	- We considered access, transport and infrastructure. 12:	: 43
21		
22	- Neighbouring land uses were considered.	
23		
24	- And the environment, of course.	
25	12:	: 43
26	- Proximity to market that's the gas and	
27	electricity was an issue for consideration.	
28		
29	- A Location suitably distant from centres of	

1	popul ati on.	
2		
3	The sites identified by Arup are listed below and shown	
4	on figure 2 of the EIS. That's figure 2.6 of the EIS.	
5	They are shown on this diagram here. They go from the	12: 43
6	Shannon Development Landbank on the west up to	
7	Aughinish island on the east.	
8		
9	A description and evaluation of these potential sites,	
10	that's Money Point, Labasheeda, Shannakea, Aughinish	12: 44
11	Island, Foynes Island, Mount Trenchard, Tarbert and the	
12	Shannon Development Landbank is given in Volume 2,	
13	Section 2.3.4 of the EIS. I do not intend repeating	
14	that description here, Mr. Inspector.	
15		12: 44
16	All these sites were reviewed and evaluated against the	
17	criteria noted above and a summary of the coastal areas	
18	evaluated is presented in the Environmental Impact	
19	Statement. It is not reproduced here.	
20		12: 44
21	The preferred site was the Shannon Development Landbank	
22	site between Ballylongford and Tarbert, near	
23	Knockfinglas Point and Ardmore Point.	
24		
25	A description of the landbank itself is covered in my	12: 45
26	statement. The site is very close to deep water and	
27	the land is relatively low-lying and relatively level.	
28	This was important for us. The nearest towns are	
29	Ballylongford, about 3.5 kilometres to the west, and	

1	larbert, about 4.5 kilometres to the east. There are a	
2	number of houses on the local coast road connecting	
3	these two towns. The site is approximately 600 acres.	
4	That's the Landbank that is owned by Shannon	
5	Development is about 600 acres. In the County	12: 45
6	Development Plan Kerry County Council had identified	
7	the Shannon Development Landbank site as suitable for	
8	the development of premier deep water port facilities.	
9	This identification, I understand, goes back many years	
10	and is referenced as well in the submission of Kerry	12: 45
11	County Council. They had identified this as a premier	
12	deep water port facilities, major industrial	
13	development and employment creation. Kerry County	
14	Council has zoned this site for industrial development	
15	and indicated in its Development Plan that the site was	12: 46
16	suitable for development as a premier deep water port	
17	facility and for major industrial development. Shannon	
18	Development had advertised the landbank as a suitable	
19	site for the development of an LNG terminal.	
20		12: 46
21	The Shannon Development owned Landbank had been put	
22	together, starting in 1959 by the IDA, and it was	
23	earmarked for marine related industrial development for	
24	many years. I think I have referred that this was well	
25	known locally and in the county and throughout the	12: 46
26	country. This makes the landbank site uniquely	
27	attractive for the establishment of an LNG terminal and	
28	I believe it is close to being an ideal site. As	

mentioned earlier, its strategic potential was

ı	recognised locally and by the State as far back as
2	1959, when the IDA began purchasing the land for
3	strategic marine industrial development.
4	
5	At the eastern end of the landbank site deep water is 12:47
6	available in close proximity to the shore. Water and
7	power supply infrastructure needs to be upgraded on
8	site. The site is served by a local road, which would
9	need upgrading to the east as far as the N69 National
10	Secondary Route at Tarbert village. Like all the other 12:47
11	sites on the estuary, the site is adjacent to the lower
12	Shannon Candidate Special Area of Conservation. It is
13	also adjacent to the Ballylongford proposed Natural
14	Heritage Area and near the Shannon Foynes Special
15	Protection Area. There is sufficient area available 12:48
16	within the site boundaries to permit the development of
17	the LNG terminal, while preserving the areas of
18	environmental and archaeological importance. There is
19	aquaculture activity in the estuary to the west of the
20	site, approximately 2 kilometres away, in shallow water 12:48
21	where LNG ships could not travel.
22	
23	No existing users of the site would be disturbed other
24	than some of the local form farmers whose short term
25	grazing leases would need to be terminated once
26	construction begins.
27	
28	Conclusion: Giving due consideration to the factors

describe in the assessment above, and also detail in

1	the EIS, the Shannon Development Landbank site was
2	selected as the optimal site for the location of an LNG
3	terminal, subject, of course, to a detailed site
4	i nvesti gati on.
5	12: -
6	I would now like to respond to certain submissions made
7	to the Board under this category.
8	
9	Submission by Kathy Sinnott, MEP, and Adam Kearney
10	associates: -
11	
12	The submission is that LNG plants are located in port
13	sites, not a greenfield site in a scenic area.
14	
15	My response to that is: In the County Development Plan 12:4
16	Kerry County Council had identified the Shannon
17	Development Landbank as suitable for the development of
18	premier deep water port facilities and major industrial
19	development. This makes the site uniquely attractive
20	for the development of an LNG terminal. As detailed in $_{ m 12:4}$
21	section 5, Site Selection Methodology and Criteria of
22	this brief of evidence and Volume 2, Section 2.3 of the
23	EIS, a number of port sites were considered but found
24	unsuitable for the siting of an LNG terminal. These
25	were ports such as Dublin, Waterford, we looked at the 12:4
26	port of Cork as well, Mr. Inspector. And the details
27	are described in the EIS.
28	

There was a submission from the Sea Energy Group.

The

"The concept of a storage 1 submission claimed that: facility offshore which combines within its structure 2 3 wave energy, offshore wind and tidal flow seems more attracti ve". 4 5 12:50 The type of concept outlined by the Sea Energy Group is 6 7 unproven in the LNG industry. A study recently carried out for the UK DTI concluded as follows: 8 9 "In some respects the tidal turbine industry of 2006 is comparable to the wind industry of the early 70's, with a large number of possible permutations of the various design options, a diversity of approach and a shortage of hard evidence to which approaches are 10 12: 50 11 12 13 likely to have a commercial future". 14 15 12: 50 16 We had a submission from Adam Kearney & Associates, a submission from DB Marine Research, a submission from 17 Friends of the Irish Environment, and a submission from 18 19 Kilcolgan Residents Association. These submissions and 20 objectors note that a study indicated that a local near 12:51 21 the Kinsale gas field would be superior to the proposed 22 I will now respond to that. 23 24 As far as I can tell, these submissions propose using 25 the infrastructure associated with the Kinsale Head Gas 12:51 26 Field platform as part of the LNG import terminal. 27 There are no known instances of offshore LNG terminals 28 integrated with existing producing gas platforms, as

the suggestion appears, so the suggestion appears

1	speculative. I personally, from my own experience, see	
2		
	major technical and safety issues association with LNG	
3	regasification at the Kinsale Head platform, including:	
4		
5	5	2: 52
6	Kinsale platforms in the exposed Celtic Sea in close	
7	proximity to the offshore gas platforms.	
8		
9	- The logistics associated with reloading regasified	
10	LNG into the platform appears very complex. If the 12	!: 52
11	LNG was regasified on the ship this would mean the	
12	LNG tanker would have to be docked near the platform	
13	for very long periods of time, increasing the risk	
14	of exposure to storms. If the LNG was to be	
15	unloaded into tanks constructed at the platforms 12	2: 52
16	this would involve using unproven concepts.	
17		
18	The Shannon LNG terminal will be capable of providing	
19	gas supplies to the Irish markets 365 days a year,	
20	regardless of weather conditions. At the Kinsale 12	2: 52
21	platform we see issues with guaranteeing the delivery	
22	of LNG during period of storm conditions in the Celtic	
23	Sea.	
24		
25	The infrastructure associated with the Kinsale Gas	2: 53
26	Field is in private ownership. The owner of the	
27	Kinsale Gas Field is free to investigate the	
28	feasibility of developing an LNG terminal to compete	
29	with Shannon LNG terminal if they so choose.	

1		
2	The Study cited in the submissions did not identify	
3	Kinsale as an "ideal" location for an LNG terminal. It	
4	stated that Kinsale could be a location for an LNG	
5	terminal.	;3
6		
7	My colleague Mr. Blair MacIntyre will provide	
8	additional details on the issues associated with the	
9	offshore siting of LNG terminals.	
10	12: 5	;3
11	We also had a submission from Friends of the Irish	
12	Environment. Their submission: "Given the proximity	
13	to centres of population and the riparian location this	
14	issue of an alternative offshore location was not	
15	properly addressed in section 2.4 of the EIS and is not 12:5	;3
16	consistent with Article 12 of the EU Seveso 2	
17	Directive. An LNG terminal near the Kinsale field	
18	should be considered".	
19		
20	My response to this is: The Health and Safety 12:5	4
21	Authority is the central competent authority in Ireland	
22	responsible for implementation of Article 12 the Seveso	
23	II Directive. The HSA has developed a risk based	
24	framework for land use in Ireland which meets the	
25	requirements of Article 12 of the Seveso II Directive. 12:5	4
26	The HSA have reviewed the Shannon LNG Quantitative Risk	
27	Assessment and informed the Board of its view.	
28		
29	Finally, to address a submission by the Kilcolgan	

I	Residents Association. Their point No. 6 and poin	IT NO.
2	8 of their submission claims that the SIGTTO stand	lards
3	were not followed in the site selection and design	١,
4	including finding a location suitably distant from	١
5	centres of population and a suitable sheltered jet	ty 12: 55
6	I ocati on.	
7		
8	This assertion is unfounded. Please refer to Volu	ıme 2,
9	Section 2 and Section 3 of the Environmental Impac	:t
10	Statement and Section 4 of this statement, Site	12: 55
11	Selection History. That concludes my statement,	
12	Mr. Inspector. Thank you.	
13		
14	END OF SUBMISSION	
15		12: 55
16	INSPECTOR: Thank you, Mr. Power.	1
17	expect there are quest	i ons
18	MR. O'NEILL: Yes. As we said befor	e,
19	questions may be addre	essed
20	on this issue and Mr. Blair MacIntyre is also goin	ng to 12: 55
21	deal with site selection, particularly offshore si	tes,
22	or the possibility of offshore sites. I don't kno	w if
23	it is more convenient to couple those two and then	ı take
24	questions on those issues. There may be questions	;
25	addressed to one witness or another witness.	12: 55
26	INSPECTOR: Yes, I think it may be	ž
27	better to go on then w	vi th
28	Mr. MacIntyre. But it is five to one now so we wi	П
29	break for lunch for an hour. I would ask people t	o be

1	back by 2 o'clock please.	Thank you.	
2			
3	LUNCHEON ADJOURNMENT		
4			
5			12: 56
6	THE HEARING RESUMED AFTER TO	HE LUNCHEON ADJOURNMENT AS	
7	<u>FOLLOWS</u>		
8			
9			
10	I NSPECTOR:	Good afternoon everybody,	14: 04
11		if we can resume our seats	
12	please. Now, before we get	into the next part of the	
13	presentation from the Appli	cants, I have a request from	
14	Mr. Richard O'Sullivan of SI	hannon Development. He	
15	really wishes to make it know	own that he is available and	14: 04
16	that he will take questions	now. I think he also may	
17	wish to clarify the position	n in relation to I suppose	
18	you would call it a potentia	al sterilisation of	
19	adjoining land as a result o	of any exclusion zones that	
20	might be around the proposed	d development so,	14: 05
21	Mr. O'Sullivan, do you wish	to make a statement at the	
22	outset.		
23	MR. O' SULLI VAN:	Mr. Inspector, I must	
24		apol ogi se. Unfortunatel y	
25	due to a prior commitment I	do have to attend another	14: 05
26	meeting this afternoon. If	there are some quick	
27	questions now in relation to	o what was heard at the	
28	previous session I would be	happy to take those now and	
29	perhaps defer if not those of	questions then all questions	

1			to perhaps a later opportun	i ty.	
2			I NSPECTOR:	Okay. Does anybody have	
3				questions at this stage for	
4			Mr. O'Sullivan?		
5					14: 05
6			MR. O' SULLI VAN WAS CROSS-EX	AMINED AS FOLLOWS	
7					
8					
9			MR. McELLI GOTT:	Sorry, Johnny McElligott	
10				here. Could he just answer	14: 05
11			the same question I asked hi	im yesterday or has the	
12			answer changed?		
13			I NSPECTOR:	Could you ask the question	
14				agai n pl ease.	
15	60	Q.	MR. McELLI GOTT:	Given the commitment that	14: 06
16				the Shannon Development	
17			always had towards the crea	tion of an industry, a	
18			marine based industry that	would create lots of jobs,	
19			how do they feel that if the	e rest of the land bank is	
20			sterilised what effect that	would have on their view of	14: 06
21			this project?		
22		A.	MR. O' SULLI VAN:	Again, Mr. Inspector,	
23				Shannon Development does	
24			not envisage the remaining	lands being sterilised.	
25			MR. McELLI GOTT:	I won't bother asking the	14: 06
26				question again.	
27			I NSPECTOR:	You are just getting the	
28				same answer. Anybody else?	
29			MR. KEARNEY:	Unless he is going to	

1		answer the question that	
2	was put to him directly yes	terday there is no point in	
3	conti nui ng.		
4	I NSPECTOR:	I think you are taking the	
5		same line, Mr. O'Sullivan; 1	4: 07
6	is that right?		
7	MR. O' SULLI VAN:	Yes, Mr. Inspector.	
8	I NSPECTOR:	Okay. Anybody el se have	
9		any questions for	
10	Mr. O'Sullivan? Well, I th	ink that concludes that 1	4: 07
11	then. I have also got a re	quest from Mr. Michael	
12	Mc (INTERJECTION)		
13	MR. McELLI GOTT:	Maybe I could ask Ogie	
14		Moran of Shannon	
15	Development does he think t	he same. 1	4: 07
16	I NSPECTOR:	Sorry?	
17	MR. McELLI GOTT:	Is Ogie Moran of Shannon	
18		Development here, Ogie	
19	Moran is the other represen	tative of Shannon	
20	Development, would he think	the same?	4: 07
21	MR. O' SULLI VAN:	Mr. Inspector, I have been	
22		authorised by Shannon	
23	Development to present the	Shannon Development oral	
24	submission to this hearing.		
25	MR. KEARNEY:	Sorry, Inspector, you asked 1	4: 08
26		yesterday that Shannon	
27	Development come back with	I suppose a more coherent	
28	reply to our question, that	doesn't seem to have	
29	happened so I think that sh	ould be entered on the	

1	record.		
2	I NSPECTOR:	Who is Mr. Ogie Moran?	
3	MR. O' SULLI VAN:	A colleague of mine,	
4		Mr. Inspector.	
5	I NSPECTOR:	Which of you is the senior	? 14: 08
6	MR. O' SULLI VAN:	I am the Project Manager i	า
7		Shannon Development with	
8	responsibilities which in	nclude the Shannon LNG project.	
9	I NSPECTOR:	So you have seniority on	
10		this project?	14: 09
11	MR. O' SULLI VAN:	Yes, Mr. Inspector.	
12	I NSPECTOR:	I don't think we can take	
13		this any further.	
14			
15	END OF QUESTIONING OF MR.	O' SULLI VAN	14: 09
16			
17	I have had a request as w	vell from Mr. Michael	
18	McElligott of Tarbert Cha	amber of Commerce and he wishes	5
19	to make a brief submissio	on so is he here now.	
20			14: 09
21	MR. MICHAEL MCELLIGOTT AD	DDRESSED THE HEARING AS FOLLOWS	<u>S</u>
22			
23	MR. M. McELLI GOTT:	Yes. Good afternoon	
24		everybody. My name is	
25	Michael McElligott, I am	the chairman of the Tarbert	14: 09
26	Chamber of Commerce and v	we are in favour of the LNG	
27	coming to the land bank a	and we want to make a brief	
28	statement.		
29			

The proposed LNG gas terminal is coming to a land bank that has been idle for more than 50 years and I think everybody should keep that in mind when you are discussing the LNG terminal in North Kerry. This is not just about Tarbert, it is about all of North Kerry 14.10 from Tralee upwards. We have had numerous promises that there would be industry coming to the land bank and they have all fell through. The economy is taking a nose dive, if anyone listened to the news last week it is getting worse. There are factories up and down 14: 10 through Ireland closing down, people are getting laid Those that not getting off are being asked for voluntary redundancies so we need industry in North The people that are objecting to the land bank have every right to do so and I think this is a great 14: 10 forum for them to air their grievances; however, we have a culture in Ireland and in North Kerry that you cannot build a local wall or a house but people will object to it and they will even go to An Bord Pleanála This is not unusual and I am glad that 14.11 everyone that has a grievance or an objection have a forum to come to here in Tralee and get that out of the way.

2425

26

27

28

29

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

However, I reland of 2008 is a much, much different place than it was some years ago. There are professional people here to answer every question, there are professional people to deal with health and safety and I know and I am happy and so are the

business community of Tarbert that all their questions will be answered and dealt with. We have to put our faith in the Irish Government and in An Bord Pleanála that they will bring experts in here to ensure that the gas terminal that is coming to Tarbert is going to be 14.11 safe and that everything will be adhered to with all the conditions they will attach to it. The business community of Tarbert have made huge investments in the village and the village has not progressed in 25 or 30 years. I mean there are no new businesses coming into the villages of North Kerry and I am not just talking about Tarbert. You have Ballybunion, you have Liselton, Listowel, you have Tralee, you have Ballylongford, you have Glen and Foynes in the counties of Limerick, now we can object to the gas terminal, but 14:12 the reality is we need employment in North Kerry. Tarbert power station is going to close, you are going to have a loss of 129 jobs in the next couple of years, who is going to replace those jobs? Kathleen Sinnott is coming here on Monday to speak. I have never in my life seen Kathleen Sinnott in Tarbert and she is the only public elected official that is going to come here to Tralee and object to the land bank and I think that is disgraceful. Politicians, we complain about them when they don't do something for us and when they bring 14:12 us something we also complain. I honestly believe if we put a garden centre on the land bank people would still object to it so we need development in North Kerry.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

1			
2	The business community of Ta	arbert are here to say that	
3	we welcome LNG with open arm	ns. We hope that Shannon	
4	Development will bring more	industry to the rest of the	
5	land bank because it is desp	perately needed. That's all 14:1	3
6	I have to say, thank you.		
7	I NSPECTOR:	Thank you, Mr. McElligott.	
8		Now, that was supposed to	
9	be one of the short submissi	ons we had yesterday.	
10	I notice one hand up raising	g a question so the idea is 14:1	3
11	that the questions would be	very brief and short. With	
12	that in mind Ms. Griffin?		
13	MS. GRIFFIN:	Catri ona Griffin. Mike,	
14		you mentioned that	
15	businesses in the villages i	n Kerry are in decline, 14:1	13
16	Tarbert included. I was bor	rn in Tarbert and I hope to	
17	spend the rest of my days in	n Tarbert and I would put to	
18	you that three of the busine	esses in Tarbert that have	
19	been closed for many years,	Tom Buckley's shop on the	
20	Main Street, O'Donagh's meat	t market in the Square and 14:1	14
21	Heaphys garage on the Listov	vel Road that have been	
22	closed for years and years h	nave re-opened in the last	
23	twelve months.		
24	MR. M. McELLI GOTT:	To be honest, Inspector,	
25		I did not plan to answer 14:1	14
26	questions, we only wanted to	o make a statement, but what	
27	Catriona says is true. Buck	kleys closed down, but	
28	Buckleys is being leased by	a pharmacy who moved from	

Hollys shop which is now closed down because they moved

1	out of it. They applied fo	or planning and that planning	
2	application has been withdr	awn at the moment. The	
3	petrol station was re-opene	ed in Tarbert Last year and	
4	it is now up for sale, they	are just not doing the	
5	business so, Catriona, I do	on't know if you knew that,	14: 14
6	but Stack auctioneers in Ab	beyfeale have the petrol	
7	station in Tarbert up for s	sale again. I do business in	
8	Tarbert myself and I can te	ell you, you could lie down	
9	on the street there on any	given night and you won't	
10	get run over it is that qui	et. We need the business in	14: 14
11	Tarbert. Not just Tarbert,	like I said Ballylongford,	
12	every village across North	Kerry, I haven't met one	
13	person in Tarbert or Ballyl	ongford or Glin that is	
14	objecting to this station o	coming to Tarbert, we are all	
15	in favour of it and I think	that message needs to be	14: 15
16	put across. The vibes that	are coming out on the	
17	radio, on the newspapers an	d on television does not	
18	represent the core people i	n North Kerry. We want	
19	development here and we wan	it LNG to come to Tarbert and	
20	once again we welcome you t	o North Kerry.	14: 15
21	MS. GRIFFIN:	Can I respond to that,	
22		Mr. Inspector?	
23	I NSPECTOR:	Even more briefly.	
24	MS. GRIFFIN:	Fair enough the people in	
25		Tarbert and Ballylongford	14: 15
26	are all in favour of the pr	oject, but the people in	
27	Tarbert and Ballylongford a	re not living 800 metres	
28	from the proposed storage t	anks. I would ask	
29	Mr. McElligott and the peop	ole in Tarbert and	

1	Ballylongford what research	they have done into the	
2	safety and all the other is	sues we have raised about	
3	the LNG plant that makes th	em so certain that it's the	
4	ideal project for the area.		
5	MR. M. McELLIGOTT:	We are not experts so we	14: 16
6		don't have to do research.	
7	ms. Griffin:	Neither am I.	
8	MR. M. McELLI GOTT:	We don't have to do	
9		research because the Irish	
10	Government have a body call	ed An Bord Pleanála that	14: 16
11	will do that research for u	s. LNG have a	
12	responsibility to the peopl	e of North Kerry to do that	
13	research so you know I don'	t have to do anything as far	
14	as researching goes. I don	't know what else to add to	
15	that, Inspector. That's th	e last of the questions, we	14: 16
16	came to make a statement, w	e have made our statement,	
17	we are happy with it and we	are not willing to answer	
18	any more questions.		
19	I NSPECTOR:	Mr. Branigan, he is not	
20		prepared to answer any more	14: 16
21	questions. He has just sai	d that, Mr. McElligott said	
22	that.		
23	MR. BRANI GAN:	I have a question.	
24	I NSPECTOR:	Can we get a microphone to	
25		you pl ease.	14: 17
26	MR. BRANI GAN:	I have a question for	
27		Mr. Power, a very simple	
28	one, relative to the Kinsal	e area about the report of	
29	the Joint Committee on Ener	gy in the Department of	

Green Paper, there are references to the usage of the Kinsale field in order to house additional gas once those fields are empty. I have been trying to find the specific references here, but in the Green Paper it is stated: "To alleviate security of supply concerns the Department and the CER have authorised a storage facility at Kinsale which is operated by"	4: 17
those fields are empty. I have been trying to find the specific references here, but in the Green Paper it is stated:	4: 17
specific references here, but in the Green Paper it is stated:	4: 17
6 stated:	4: 17
7	
To alleviate security of supply concerns the Department and the CER have authorised a storage facility at Kinsale which is operated by"	
concerns the Department and the CER have authorised a storage facility at Kinsale which is operated by"	
9 Kinsale which is operated by"	
10	4: 18
All I will ask Mr. Power, he seems to be suggesting	
12 that it wasn't a practical thing to put natural gas	
back into the field, I would like to ask Mr. Power to	
answer that, he is the expert on it.	
15 INSPECTOR: Okay, Mr. Branigan. I am	4: 18
16 going to ask Mr. O' Neill on	
17 that one. Is Mr. Blair MacIntyre going to answer that?	
18 MR. O'NEILL: I think that's probably	
something more in the field	
of Mr. MacIntyre so perhaps that question could be	4: 18
deferred until Mr. MacIntyre has made his presentation.	
22 INSPECTOR: Did you hear that,	
Mr. Brani gan?	
MR. BRANIGAN: No, I didn't. I am sorry.	
25 MR. O'NEILL: What I am suggesting is	4: 19
26 that Mr. MacIntyre is going	
to make a presentation now and he may answer those	
issues and if he doesn't you can then ask him a	
question, he is probably the better man to ask.	

1	MR. BRANI GAN:	I want to know why. Thank	
2		you. Thank you, Sir.	
3	MR. POWER:	Mr. Inspector, we will	
4		respond to that question.	
5	I NSPECTOR:	I think it's now time for	14: 19
6		Mr. MacIntyre to make his	
7	submi ssi on.		
8			
9	MR. MACINTYRE ADDRESSED THE	ORAL HEARING AS FOLLOWS	
10			14: 20
11			
12	MR. MacI NTYRE:	Thank you, Mr. Inspector.	
13		My name is Blair MacIntyre,	
14	I am a Chartered Engineer Li	censed by the Engineering	
15	Council of the UK and I hold	d a First Class Combined	14: 20
16	Steam & Motor Certificate as	s a marine engineer. I am a	
17	member of the Institute of M	Mari ne Engi neers, Sci ence &	
18	Technology and a member of L	∟loyd's Register North	
19	America, USA Advisory Commit	ttee.	
20			14: 20
21	I am Shipping Technology Adv	visor with Poten & Partners,	
22	a Joint Venture owner of Sha	annon LNG Ltd. and my areas	
23	of expertise are in LNG ship	os, shipping & port	
24	operations and LNG cargo cor	ntainment and handling.	
25			14: 21
26	Prior to joining Poten & Par	rtners in 2003, I worked	
27	with Shell including 30 year	rs in LNG shipping of which	
28	nine were spent in Japan. I	was manager of LNG Marine	
29	Operations with a fleet of r	nine ships delivering LNG to	

Japan and Korea. Latterly, I was director of Shell
Tankers UK and General Manager of Shell Shipping
Technology, responsible for worldwide design and
construction of oil and gas vessels and ship based
offshore oil and gas facilities. Other 14:21
responsibilities included oil and gas terminal site
selection, the vetting and governance of company
operated port facilities and the vetting of chartered
ships. I served on the Technical Committee of Lloyd's
Register of Shipping and for ten years up to 2002 was a 14:21
Director and Vice President of the Society of
International Gas Tanker & Terminal Operators, SIGTTO.

13

1

2

3

4

5

6

7

8

9

10

11

12

My involvement in the Shannon LNG project.

1516

17

18

19

20

21

22

23

24

25

26

27

28

29

14

I am responsible for coordinating all marine aspects of the project including confirming for Hess LNG the viability of the Shannon Estuary to accommodate the proposed LNG ships, identifying the optimum location for LNG and materials jetties and preparing the 14: 22 performance specification for the LNG jetty and the LNG offloading equipment. During this work I liaised closely with the Shannon Foynes Port Company and specifically with the Shannon Estuary Harbour Master and Pilot Superintendent. I also retained the services 14:22 of a Master Mariner who is a former marine advisor within SIGTTO, a marine superintendent with hands-on oil and gas international port experience, a fellow of the Royal Institute of Navigation and Chairman of its

1	Marine Traffic and Navigation Group. The work has been	
2	supported by marine studies undertaken by Irish	
3	Hydrodata and Fugro-Seacore, by jetty concept design	
4	work carried out by Halcrow and by ship manoeuvring	
5	simulations carried out at the National Maritime	14: 23
6	College of Ireland, (NMCI) Ringaskiddy involving six	
7	pilots from the Shannon Estuary.	
8		
9	I was responsible for compiling and reviewing all the	
10	marine aspects of the EIS, the principal ones being:	14: 23
11	Volume 2 chapter 2, marine considerations and	
12	alternatives; chapter 3, project description of marine	
13	facilities; chapter 7, construction work within the	
14	estuary; and volume 3 appendices 3A, 3B and 3C	
15	describing shipping procedures, shipping safety and	14: 23
16	major accident hazard assessment.	
17		
18	Today my principal points of evidence will cover site	
19	selection for marine related LNG facilities and	
20	alternative offshore location of LNG facilities.	14: 23
21	I will deal with safety matters in another session.	
22		
23	The primary requirement to ensure safe transfer of	
24	cargo between an LNG ship and LNG terminal storage	
25	tanks is fulfilled by having the ship securely berthed	14: 24
26	al ongsi de a jetty equi pped with strong fender and	
27	mooring arrangements for the intended ship size and	
28	connected by harm-arm LNG lines protected by emergency	
29	shut down and automatic disconnection systems. The	

1	berth should be located in deep sheltered waters having	
2	good access to the sea and as close as practical to the	
3	LNG storage tanks. The Shannon Development Landbank	
4	site described in the EIS volume 2, section 2.3	
5	provides all the essential elements required to achieve 1	4: 24
6	safe berthing and transfer of LNG cargo. This is	
7	entirely consistent with the recommendations contained	
8	in SIGTTO "Information paper No. 14, site selection and	
9	design for LNG ports and jetties" from which the	
10	following extracts referring to site selection are	4: 25
11	taken:	
12	"At its most alementary level site	
13	"At its most elementary level, site selection for LNG loading terminals is	
14	predicated by the location of production areas and, at receiving terminals, the situation is dependent	
15		4: 25
16	With this in mind it can be appreciated	
17	that marine criteria are only part of the overall process. Therefore, at the	
18	stage of site selection input from marine experts consists mainly in	
19	optimising fleet capacity (numbers and sizes of ships) and checking civil	
20		4: 25
21	terminal approach area. This latter aspect is achieved by obtained the required depth of sheltered water,	
22	providing good access from the sea and	
23	achieving ĭmmediate adjacency to the LNG terminal. From the marine	
24	viewpoint there is little prospect to escape from these basic factors."	
25	1	4: 26
26	Having been identified as the preferred site I believe	
27	that the proposed terminal location fits these SIGTTO	
28	basic factors like a glove.	

I would now like to turn to the alternative offshore I have experience in the concept and detailed design, assessment and construction of offshore LNG and oil facilities and I am familiar with their characteristics. There are many actual and 14.26 proposed designs for offshore terminals, each have different technical and commercial attributes. most frequently proposed being described in the EIS volume 2 section 2.4. However, there is only one operational offshore terminal in the world today, it 14: 26 does not have any storage capacity and no substantial track record having only received a few infrequent cargoes.

14

15

16

17

18

19

20

21

22

23

1

2

3

4

5

6

7

8

9

10

11

12

13

Offshore LNG terminal configurations fall into two broad categories. The first is fixed terminals that include both storage and regasification. They either rest on the seabed and are defined as Gravity Based Structures or GBSs, or they are floating, defined as Floating Storage and Regasification Units or FSRUs. In 14:27 both cases conventional LNG ships berth alongside the facility and unload their cargoes as they would at the jetty of an onshore terminal.

24

25

26

27

28

29

In a GBS the LNG storage tanks are contained in a tall concrete structure which is towed to the site, then ballasted directly on to the sea floor as described in the EIS. The top of the structure extends above the water surface like a small manmade island which has to

be connected to the gas distribution by pipeline. If constructed in Ireland, a graving dock large enough to accommodate fabrication and subsequent floor type of the GBS would need to be created. It is anticipated that the environmental impacts associated with the construction of such a graving dock would, for most potential sites in the region, be equal to or greater than those for the onshore alternative.

14. 28

14: 29

GBS terminals require a narrow range of water depths,
between 15 and 30 metres, relatively gentle seabed
slopes and soft seabed soils. In Ireland such
conditions are only likely to be found within estuaries
or sheltered bays. The deployment of a GBS would be
limited to more sheltered waters close to the shore,
such as within estuaries, but it would still experience
more adverse wind and sea conditions than an onshore
terminal. Siting such a facility within an estuary or
elsewhere close to the shore would negate one of the
claimed advantages, namely that the facility and ships
supplying it would be located far from the land and the
population.

No terminals of this type exist, most proposals have been abandoned and only one is under construction. As initial investment costs have proved to be much higher than expected, the commercial viability as a source of long-term gas supply of this offshore design is highly questionable. Given the lack of operating experience,

1 and the extremely high cost and potential environmental 2 impact of construction, pursuing such a terminal in 3 Ireland would be highly speculative and would 4 dramatically increase the risk of economic and technical failure. 5 14.29 6 With a floating or an FSRU terminal, as described in 7 the EIS, LNG storage and regasification facilities are provided on board a floating vessel moored to a 8 9 permanent unloading buoy. The FSRU hull has to have a 10 larger capacity than the largest LNG ship expected to 14: 29 11 discharge into it. Optimal water depth for a floating 12 terminal system is 30 to 50 metres. Based on 13 information filed for a proposed FSRU, LNG ships can 14 only come alongside and depart from these facilities in 15 wave heights less than 2 metres and can only unload in 14: 30 16 wave heights less than 3 metres. As in the case of a 17 GBS terminal, this implies the facility must be located in relatively sheltered waters near to the shore if 18 19 security of gas supply is to be assured.

2021

22

23

24

25

26

27

28

29

14: 30

14: 30

An FSRU terminal is essentially similar to a very large LNG ship and as such must be constructed in a shipyard. Maintenance to ship based floating structures in the oil industry invariably requires them to be completely shut down on station for specific periods or removed off station to a ship repair yard involving an even longer shut down period. Either alternative would result in the LNG terminal being unable to provide continuous security of supply.

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

No example of an FSRU terminal exists today and none are even under construction. Pursuing such a terminal in Ireland would involve high technical and operational ri sk.

14:31

14: 32

A common feature of offshore terminals, either GBS grounded type or FSRU floating type, recorded in the EIS is that they are exposed to more adverse weather conditions than onshore terminal; therefore, they require ships with increased strength mooring equipment 14:31 and cargo transfer arrangements able to tolerate an extended range of movements. Such requirements usually translate into the need for the LNG deliveries to be made by specifically modified ships potentially eliminating the use of the majority of the world's 14: 31 fleet.

17 18

19

20

21

22

23

24

25

26

27

28

29

In the oil industry offshore cargo transfer operations are invariably carried out through flexible hoses. Although these generally give reliable service, the LPG 14:31 industry has experienced some serious accidents involving rupture of cargo transfer hoses. flexible hoses have been developed for LNG service, but to date have only been used infrequently under emergency conditions or under strictly controlled situations in very calm waters and at low transfer rates. There are no agreed industry guidelines for LNG ship to ship transfer. The only commercial LNG transfer operations that have been carried out to date

have been in very calm waters such as the single exercise carried out within Scapa Flow in Scotland, not in the offshore locations where conditions can be See figures 1 and 2 which show totally unsuitable. North Sea offshore conditions and figures 3 and 4 which 14:32 show offshore support vessels of the size that would be required to act as berthing tugs, standby vessels and fire vessels during LNG transfer. Similar weather conditions to the ones illustrated can and do occur off the Irish coast especially during the winter months 14: 33 when reliable gas supplies are most needed. It would not be possible for an LNG ship to approach a GBS or FSRU terminal in even moderate weather conditions.

Offshore LNG facilities require LNG transfer equipment capable of operating reliably in offshore conditions. At this time there are no proven flexible hoses with a reliable track record in LNG service. The onshore industry has established a high safety record of LNG cargo transfers employing hard-arm connections and has developed effective safety devices to protect them and minimise release of cargo in the rare event of the movement of the ship during unloading. No such systems are available for exposed offshore locations and the concept designs that exist would require a fleet of special modified non-standard ships.

14: 33

14: 34

27

28

29

I, therefore, believe that the combination of adverse weather conditions and the lack of suitable LNG

transfer equipment capable of providing safe and reliable service under such conditions is sufficient to rule out offshore GBS and FSRU terminals except in the most calm locations.

5

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

1

2

3

4

14: 34

The second category of offshore terminals involving submerged offshore buoy technology, as described in the EIS, have no storage except for the inventory of LNG in the cargo tanks of the ship when its arrives. regasification equipment is located on board ship and 14:34 also comes with the LNG ship when it arrives. type is usually referred to as LNG Regasification Vessels or LNGRVs. They typically regasify the LNG on board and discharge the gas through a patented submerged buoy system which locks into a recess in the 14: 35 bottom of the ship and also anchors the ship in position while it is unloading. The entire operation takes about five to seven days to complete during which time the ship remains on the buoy. From the buoy the gas goes through a flexible line or riser from the 14: 35 seabed which is connected to a submarine pipeline leading to the shore. There are some other concept designs having regasification equipment mounted on the fixed or floating unit alongside the LNG ship, but none of the proposals have any independent LNG storage 14: 35 Neither do they have the ability to adjust the quality of the gas to meet the shore pipeline specification prior to injection.

The submerged buoy is anchored to the seabed and can only be accessed by specially designed LNG ships. only offshore submerged LNG buoy system in the world is in the Gulf of Mexico and although it has been in place for nearly three years it has received very few 14:36 Another submerged buoy terminal is being installed in Boston Harbour. To supply gas on an uninterpreted basis it would be necessary to use two submerged buoys allowing a fleet of LNGRVs to overlap their arrivals and departures. Otherwise gas 14: 36 deliveries would have to suspended during the period when one LNGRV completes its unloading and disconnects and the next one arrives, connects and commences unloading. A feature of this arrangement common to all gas and oil vessels, either loading or discharging the 14: 36 buoy system, is that the product flows through a flexible hose connected under the buoy. Such out of sight pieces of equipment subjected to the constant fatigue inducing movements of the ocean have not been trouble free. They have experienced unpredicted 14: 37 failures, the most recent having resulted in a very large oil pollution incident in the North Sea as shown in figure 5 now on the screen.

2425

26

27

28

29

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

Given the limited operating history of the single existing facility of this type, the need to use special LNGRV ships and the reliance on high pressure flexible hoses, this design creates technical and reliability concerns. The lack of storage capacity and the very

1	low activity at the existing terminal in the US Gulf of	
2	Mexico also raise questions at its commercial viability	
3	as a source of long-term gas supply.	
4		
5	Mr. Inspector, I would like now to respond to some	14: 37
6	submissions made to An Bord Pleanála. The first	
7	submission from Adam Kearney Associates refers to other	
8	terminals are located in developed port areas. I would	
9	respond to that that LNG terminals can be found in	
10	fully developed ports, e.g. Zeebrugge and Barcelona; in	14: 38
11	semi developed rural area e.g. Isle of Grain and	
12	Milford Haven. South Hook LNG terminal is partly	
13	within the Pembrokeshire National Park and the Milford	
14	Haven Waterway is part of the Pembrokeshire Marine SAC	
15	within which both South Hook and Dragon LNG jetties are	14: 38
16	located. Other terminals are located in undeveloped	
17	rural areas such as Cove Point, Elba Island and Costs	
18	Azul. Developed ports in Ireland were considered in	
19	the alternative analysis as described in the ELS and by	
20	Paddy power in his witness statement.	14: 38
21		
22	The next submission which was from the Sea Energy Group	
23	suggests:	
24	"Thomasia a mond for diversity of	
25	"There is a need for diversity of energy supply and LNG should be	14: 39
26	inclŭded.''The concept of a storage facility offshore which combines within	
27	its strúcture wave energy, offshore wind and tidal flow strikes me as a	
28	much more attractive proposition."	

In response Shannon LNG is not aware of any proposed

project anywhere in the world which combines an LNG receiving terminal with wave, wind and tidal energy production facilities, nor does Shannon LNG have any idea as to what such a structure would look like or what its technical or commercial viability might be. As such, Shannon LNG cannot comment on this proposal, but we would note that if Sea Energy Group wishes to pursue such a facility nothing in Shannon LNG's proposed project prevents Sea Energy from doing so.

14: 39

14:39

It has been proposed that alternative sources of energy rather than LNG could be tapped such as wave or tidal current energy. While there are many concept designs in existence, the reality of capturing such energy in a commercial manner still faces huge technical challenges 14:40 and also raises many environmental issues.

Wave energy like wind power is unpredictable and many prototype devices have been unable to withstand the full power of the oceans, something which my own 14:40 maritime experience has led me to respect. Unlike ships these devices have to permanently installed in one location and cannot seek shelter when the weather deteriorates. Constructing devices that can withstand storm damage and saltwater corrosion generally leads to 14:40 heavy weight designs or the employment of exotic materials which are neither operationally inefficient or prohibitively costly.

1	The harnessing of tidal current energy although more	
2	predictable raises many environmental issues especially	
3	where dams or barrages are proposed across estuaries or	
4	where underwater tidal turbine farms are proposed.	
5		14: 41
6	The following extracts are taken from a study "Ocean	
7	Energy in Ireland" prepared for the Department of	
8	Communications, Marine and Natural Resources in October	
9	2005. In that report it describes issues facing ocean	
10	energy on page 9:	14: 41
11	"Tochnology dovolonment romains the	
12	"Technology development remains the critical issue for ocean energy	
13	systems. There have been a handful of prototype developments at sea,	
14	including most recently the Pelamis wave energy converter and the Seaflow marine current turbine, both in the UK,	
15		14: 41
16	However there are many more examples of troubled prototype testing, or device	
17	concepts that have languished in the	
18	laboratory for years. There is a need for a successful commercial device to reach the market and provide access to	
19	data verifying that ocean energy is economically viable."	
20		14: 42
21	Another study carried out for the UK DTI concluded as	
22	follows:	
23	"In come respects the tidal turbine	
24	"In some respects the tidal turbine energy of 2006 is comparable to the	
25		14: 42
26	of the various design options, a diversity of approach and a shortage of	
27	hard eviðence as to which prototypes are likely to have a commercial future."	
28	ruture.	
29	The next submission from DB Marine Research &	

1	Associ ates:	
2	WINC can be delivered convented to me	
3	"LNG can be delivered, converted to gas on board the carrying tanker and pumped	
4	now nearly depleted Kinsale field and	
5	on board the carrying tanker and pumped into an offshore gas cavern such as the now nearly depleted Kinsale field and as recommended by the Joint Committee on Marine and Natural Resources JCMNR."	14: 43
6		
7	In response I would say that the current technology for	
8	on board regasification is described in the EIS and as	
9	discussed in my witness statement. Technical and	
10	reliability concerns coupled with the lack of storage	14: 43
11	capacity and the very low activity in the existing	
12	terminal in the US Gulf of Mexico designed to accept	
13	special ships with on board regasification equipment	
14	raises questions as to its technical and commercial	
15	viability as a source of long-term gas supply. The	14: 43
16	JCMRN actually stated that:	
17	"The full notential of this method of	
18	"The full potential of this method of storage needs to be explored, quantified and costed."	
19	quantified and costed.	
20	Which in fact is a call for research as opposed to a	14: 43
21	recommendation for adoption. The issue of using the	
22	Kinsale field infrastructure is addressed separately by	
23	Paddy Power.	
24		
25	The next submission from Friends of the Irish	14: 44
26	Environment regards alternative analysis did not	
27	properly address locations near to populations or	
28	riparian location.	
29		

1	The issue of potential risk to populations are	
2	addressed in the QRA submitted to the HSA. Riparian	
3	location and the impact to the waters of the Shannon	
4	Estuary are addressed in later witness statements by	
5	Dr. Andrew Franks.	4: 44
6	The next was an oral submission by Mr. John McElligott	
7	yesterday which stated that Italy does not have any	
8	onshore LNG terminals.	
9		
10	Shannon LNG would respond that the Panigaglia LNG	4: 44
11	terminal near Genoa has been in operation since 1971	
12	and Brindisi on the heel of Italy on the east side is	
13	under construction at this time.	
14		
15	The next oral submission also from John McElligott said 14	4: 45
16	that Golar LNG are deploying two offshore FSRUs in	
17	Brazi I .	
18		
19	Shannon LNG would respond that Petrobras, the Brazilian	
20	national oil and gas company, has signed ten year	4: 45
21	charters for two existing Golar LNG ships which will be	
22	converted to FSRUs and moored alongside jetties in	
23	Brazil, not in offshore locations. They are intended	
24	to be employed for a quick start-up supply of gas	
25	principally for onshore power generation while	4: 45
26	conventional shore terminals with storage tanks are	
27	constructed.	
28		
29	The next oral submission also by Mr. John McElligott	

1	said that ExxonMobil are experienced LNG terminal	
2	operators.	
3		
4	Shannon LNG would respond that ExxonMobil do not	
5	operate and have not operated any LNG regasification	14: 46
6	termi nal s.	
7		
8	The next oral submission by Mr. John McElligott said	
9	that ExxonMobil have submitted a planning application	
10	for a Blue Ocean Energy offshore LNG terminal to be	14: 46
11	located 20 miles off New York.	
12		
13	Shannon LNG would respond that ExxonMobil have not	
14	submitted any planning application to any permitting	
15	authority with respect to the Blue Ocean Energy	14: 46
16	project. ExxonMobil have only made a press release of	
17	concept publicity material giving no detail of the	
18	project proposed timescale. Although the sea	
19	conditions off New York are more moderate than off	
20	Ireland the project, if it succeeds, will face	14: 46
21	challenging technical issues.	
22		
23	In conclusion, Mr. Inspector, I would say that	
24	accordingly it is my view that the Shannon Estuary	
25	provides ideal safe deep water access for the proposed	14: 47
26	large LNG ships of up to 265,000 cubic metre capacity	
27	and that a jetty can be constructed at the location	
28	proposed in the EIS to safely and securely berth and	
29	unload the vessels.	

1			
2	The geography of the	Irish coastline and the weather	
3	conditions it experi	ences do not favour the alternative	
4	of offshore faciliti	es given the current lack of	
5	suitable LNG handlin	g, transfer and storage technology. 14:4	7
6	Thank you, Mr. Inspe	ctor.	
7			
8	END OF SUBMISSION OF	MR. MACINTYRE	
9			
10	I NSPECTOR:	Thank you, Mr. MacIntyre. 14:4	7
11		Mr. O'Neill?	
12	MR. O' NEI LL:	I have one further	
13		presentation to make in	
14	this module in relat	ion to planning and policy and with	
15	your leave I will do	so now and then perhaps questions 14:4	7
16	can be addressed on	any of the issues arising in the	
17	last three submissio	ns to the appropriate personnel.	
18	I NSPECTOR:	0kay.	
19	MR. O' NEI LL:	It is going to be delivered	
20		by Ms. Ri a Lyden.	8
21			
22	MS. LYDEN ADDRESSED	THE ORAL HEARING AS FOLLOWS	
23			
24	MR. LYDEN:	Qualifications and	
25		experience. My name is Ria 14:4	9
26	Lyden. I am an Asso	ciate Director of Arup Consulting	
27	Engineers. I have a	Bachelor of Engineering Degree in	
28	Civil Engineering an	d Master of Business Administration	
29	Degree. Both degree	s are from University College Cork.	

1	I am a Chartered Engineer, I am a Fellow of the	
2	Institution of Engineers of Ireland and a member of the	
3	Institution of Structural Engineers. I have worked as	
4	a civil and environmental engineer for 27 years.	
5		14: 49
6	Since 1992 I have prepared or supervised the	
7	preparation of numerous Environmental Impact Statements	
8	for a wide range of industrial, infrastructure,	
9	institutional, commercial and residential projects.	
10		14: 49
11	Arup Consulting Engineers is a multidisciplinary firm	
12	of consulting engineers based in Ireland. The scope of	
13	work on Arup Consulting Engineers on the Shannon LNG	
14	project included the preparation of the Environmental	
15	Impact Statement.	14: 50
16		
17	Project Involvement. My role was to supervise the	
18	preparation of the EIS and I prepared the section of	
19	chapter 4 of the EIS on national and local plans and	
20	policies. My evidence will be an overview of the	14: 50
21	national, regional and local planning and policy	
22	framework of the Shannon LNG project.	
23		
24	Plans and Policies. Mr. Paddy Power has given evidence	
25	to show that the Shannon LNG terminal project will	14: 50
26	further the objectives of the European Union's energy	
27	policies and the Irish Government's energy policies.	
28	My evidence will cover the Kerry County Development	
29	Plan, the Tarbert Local Area Plan, the Ballylongford	

1	Local Area Plan, the National Spatial Strategy, the
2	Southwest Regional Planning Guidelines, the National
3	Development Plan and the Strategic Plan for the Shannon
4	Estuary.
5	14: 5
6	Kerry County Development Plan 2003-2009. The Kerry
7	County Development Plan 2003 provides the overall plan
8	for sustainable development in the county. The plan
9	provides a coherent integrated statement of the
10	policies and objectives that need to be implemented in 14:5
11	order to achieve the vision of how the county is to
12	develop in the future. The Shannon LNG terminal
13	project is reviewed in the context of the Plan's
14	objectives in section 4.6 of volume 2 of the EIS.
15	14: 5
16	In their submission to the Board, Kerry County Council
17	has compiled a list of objectives of the Kerry County
18	Development Plan which have relevance to the Shannon
19	LNG terminal project. This list is reproduced in
20	appendix 1 below to my document here.
21	
22	Amongst the overall objectives of particular relevance
23	to the Shannon LNG project are: The references as
24	given are in the Kerry County Development Plan. So
25	ECO 2-1: Encourage economic and employment growth in a 14:5
26	sustainable manner and in accordance with the
27	principles and objectives of this Development Plan.
28	

ECO 2-2: Ensure the county maximises its potential as

1	a functional area to create the critical mass necessary	
2	for economic growth.	
3		
4	ECO 2-6: Identify lands in key strategic locations	
5	that are particularly suitable for development by	14: 52
6	specific sectors. Land in such locations will form	
7	part of a strategic reserve that would be protected	
8	from inappropriate development that would prejudice its	
9	long-term development for these uses.	
10		14: 52
11	The overall objectives in relation to employment and	
12	economic development include: ECO 5-1: General	
13	strategy. Encourage economic and employment growth in	
14	sustainable manner and in accordance with the	
15	principles and objectives of this Development Plan.	14: 53
16		
17	ECO 5-2: Maximising economic potential. Ensure the	
18	county maximises its potential as a functional area to	
19	create the critical mass necessary for economic growth.	
20		14: 53
21	As outlined in section 4.6.2 of volume 2 of the EIS the	
22	plan states that the majority of lands zoned for	
23	industrial use throughout the county would be within	
24	the urban zones. However, there are instances where	
25	lands outside of urban areas may be zoned for	14: 53
26	industrial purposes. These reasons relate primarily to	
27	the strategic location of the lands or to locations	
28	where there is a need for industrial land in the area	
29	and where no alternative provision can be made. In	

1	this respect the plan has identified the lands in the	
2	Ballylongford/Tarbert area in which the proposed	
3	Shannon terminal is located as suitable for development	
4	as a premier deep water port facility and for major	
5	industrial development and employment creation.	14: 54
6	It is also an objective of the Plan to facilitate the	
7	provision of the necessary infrastructure required to	
8	promote the sustainable development of the county and	
9	to facilitate the provision of the infrastructure	
10	necessary to cater for the needs of industry.	14: 54
11		
12	A key concern in relation to the provision of	
13	infrastructure in Co. Kerry is the issue of	
14	peri pheral i ty:	
15	"One of the greatest difficulties food	14: 54
16	"One of the greatest difficulties faced by Kerry is its peripherality. The	
17	provision of proper external infrastructure linkages from the county to the national and international	
18	infrastructural networks reduces the	
19	impact of peripherality and makes the county more attractive for the location of industry."	
20	or mastry.	14: 55
21	The Plan states that one of Kerry County Council's	
22	roles as a planning authority is to assess proposals in	
23	relation to the supply and distribution of power	
24	throughout the county. This includes the provision of	
25	power from both conventional (peat coal and gas etc.)	14: 55
26	and renewable sources and the necessary network	
27	infrastructure to serve these. There is a strong	
28	emphasis in the Plan on the preservation of the	
29	national environment and the heritage of the county and	

1	any development must meet this requirement.	
2		
3	Objective EN 10-1: It is an objective of the Council	
4	to take all necessary measures to prevent pollution in	
5	order to maintain the maximum quality of the	14: 55
6	environment of Co. Kerry.	
7		
8	EN 10-17: Ensure that development likely to have	
9	serious adverse effects on the areas listed will not	
10	normally be permitted. The designation of sites does	14: 56
11	not imply a total restriction on all development;	
12	however, there will be a presumption against certain	
13	damaging types of development.	
14		
15	EN 10-19: It is an objective to maintain the	14: 56
16	conservation value of those sites identified by Dúchas,	
17	The Heritage Service as Specials Areas of Conservation	
18	as well as any other sites that may be so identified	
19	during the lifetime of this plan.	
20		14: 56
21	EN 10-21: It is an objective to maintain the	
22	conservation value of all Natural Heritage Areas for	
23	designation by Dúchas for proposed sorry, do you	
24	mind if I read that again. It is an objective to	
25	maintain the conservation value of all Natural Heritage	14: 56
26	Areas proposed for designation by Dúchas, The Heritage	
27	Service, during the lifetime of this plan.	
28		
29	The objectives of the plan in relation to landscape or	

visual amenity will be addressed in the evidence of Mr. Thomas Burns.

3

4

5

6

7

8

9

10

11

12

13

1

2

The proposed Shannon LNG terminal project is in line with the objectives of the Kerry County Development Plan 2003. The terminal will be key infrastructure to cater for the needs of industry in Kerry as well as countrywide. It will be a premier deep water port facility and will bring industrial development and create employment on a site identified as suitable for such development, while maintaining the requirement of protection of the environment and maintaining the conservation value of the designated sites.

14:57

14: 57

14: 58

14

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

Variation to the Kerry County Development Plan 2003-2009. In March 2007 Kerry County Council made variation No. 7 to the Kerry County Development Plan and rezoned 188.8 hectares, which is 466.53 acres, of the Shannon Development land bank at Ballylongford. The lands which accompanied the variation are attached Mr. Inspector, I will refer you to to this statement. These maps are at the back of the document (indicating) and so if you can have a look at the map. Included in the rezoning was 105 hectares, which is 261.43 acres, which were rezoned from rural general to industrial zoning. The Shannon LNG is located on this This is the land which is in the eastern part of the map. If you look at the smaller map No. 3 and the eastern portion of land is where the Shannon LNG

1	terminal is located. 83 hectares, which are 205.1	
2	acres, of land to the west of the Shannon LNG were	
3	rezoned from secondary special amenity to industrial	
4	zoni ng.	
5		14: 59
6	As concluded in section 4.6.3 of volume 2 of the EIS	
7	the site of the proposed LNG terminal is, therefore,	
8	zoned industrial.	
9		
10	The stated purpose of the variation was as follows:	14: 59
11		
12	"The purpose of the variation is to facilitate consideration of suitable development of these lands in	
13	development of these lands in accordance with the provisions of	
14	accordance with the provisions of section 5.2.9 of the Kerry County Development Plan 2003-2009 which	
15	states:	14: 59
16	'Lands have been identified at Ballylongford/Tarbert as suitable for	
17	Ballylongford/Tarbert as suitable for development as a premier deep water port and for major industrial	
18	development and employment creation'.	
19	The adoption of this variation gives effect to objective ECO 5-5 of the	
20	Kerry County Development Plan which states:	15: 00
21	'It is an objective of Kerry County	
22	Council to identify lands in key strategic locations that are	
23	particularly suitable for development that may be required by specific	
24	sectors. Land in such locations will form part of a strategic reserve that	
25	will be protected from inappropriate development that would prejudice its	15: 00
26	long-term development for these uses'."	
27		
28	The Shannon project is in accordance with the objective	
29	of the variation. Mr. Michael Biggane will give	

1 evidence on the local employment to be generated by the 2 LNG terminal. Mr. Andy Franks will give evidence that 3 the LNG terminal will not restrict other industrial 4 uses of the remaining Shannon Development Land. 5 15:01 6 At this point I would like to correct figure 5.1 in 7 volume 3 of the EIS. The industrial zoning stops at 8 the shoreline and does not extend to the jetties. 9 Tarbert Local Area Plan 2006. 10 The Tarbert Local Area 15:01 11 Plan 2006 was addressed in section 4.6.4 of volume 2 of 12 the EIS. The Tarbert Local Area Plan is consistent 13 with the policies, provisions and objectives of the 14 Kerry County Development Plan, National Guidelines, and 15 the Kerry County Development Board policies. This plan 15:01 16 in conjunction with the Kerry County Development Plan 17 will provide the framework for future development 18 The development strategy for Tarbert is to 19 enhance the town's physical assets and promote economic 20 The plan also provides for the protection of 21 scenic and wildlife areas. 22 23 In relation to industrial development the Plan notes 24 that Tarbert has a locational advantage which could if 25 capitalised upon generate demand for industrial 15: 02 26 acti vi ti es. It also comments on the industrial land,

that's the Shannon Development Land bank, to the west

of the town. A large bank of industrial land to the

west of the town is envisaged for port related

27

28

1	industrial uses. There are no immediate plans for the
2	land bank, but continued national growth may generate
3	opportuni ti es.
4	
5	The proposed development accords with the Tarbert Local 15:0
6	Area Plan as it will promote the economic growth of the
7	local area.
8	
9	Ballylongford Local Area Plan 2007. The North Kerry
10	Settlements Local Area Plan, which includes Local Area 15:0
11	Plan for Ballylongford, was adopted in 2007. The Local
12	Area Plan for Ballylongford notes that the population
13	of Ballylongford has declined in recent years which has
14	resulted the loss of local services and closure of
15	local businesses. However, as noted in the Plan:
16	"A number of factors may centribute to
17	"A number of factors may contribute to the revival of the local economy. Development on foot of this Plan will
18	contribute to an increase in population
19	contribute to an increase in population necessary to halt and reverse the gradual decline in services and provide a measure of local employment.
20	The industrial land known as
21	Ballylongford land bank is
22	Ballylongford land bank is approximately two kilometres to the north of the village and comprises 600 acres, 281 of which is proposed to be
23	developed as a liquefied natural gas import terminal. This development
24	would, over a three year period, provide between 250 to 750 construction
25	jobs at any one point in construction. 15:0 On completion of the terminal there
26	would be 50 permanent jobs."
27	
28	The proposed development would contribute to the
29	revival of local business and would thus promote the

1	objectives of the Ballylongford Local Area Plan 2007.	
2		
3	National Spatial Strategy 2002-2020. The National	
4	Spatial Strategy 2002-2020 was addressed in section	
5	4.5.2 of volume 2 of the EIS. The purpose of the	15: 04
6	National Spatial Strategy is to provide a spatial	
7	dimension to the development policy set out in the	
8	National Development Plan. The strategy is a 20 year	
9	plan designed to deliver more balanced social, economic	
10	and physical development between regions. The Strategy	15: 04
11	proposes a significant redistribution of economic	
12	growth from Dublin and the mideast to the west of the	
13	country. It outlines four main messages for the	
14	regional approach to spatial planning, namely that:	
15		15: 05
16	Frameworks for spatial planning of cities around the	
17	country and their catchments must be developed and	
18	implemented; the county town and large town structures	
19	must be strengthened; a renewed emphasis is needed on	
20	the potential role of small town and village structure;	15: 05
21	key rural assets must be protected and local potential	
22	of rural areas developed.	
23		
24	In relation to the south west (the counties Cork and	
25	Kerry) the National Spatial Strategy states that	15: 05
26	balanced regional development will be dependent on the	
27	development of Kerry:	
28		
29	"Enhancing the contribution of the South West to balanced regional development will also be critically	

1 2 3 4	dependent on the development of Kerry. This will be driven by combining the complementary strengths of Tralee and Killarney as a hub and building on their track record and established residential, employment, retailing, education, transport and services functions."	
5		15: 06
6	In relation to the mid west, which are the counties	
7	Clare, Limerick and North Tipperary, the National	
8	Spatial Strategy states that the development of this	
9	region will require the enhancement of the functioning	
10	of the Limerick Shannon gateway at the national	15: 06
11	international level:	
12	"The contribution to belonged regional	
13	"The contribution to balanced regional development of the Mid-West (counties	
14	Clare, Limerick and North Tipperary) will require the enhancement of the performance of the Limerick Shannon	
15	gateway at the national/international	15: 06
16	revel. This is needed to lever additional investment for the overall	
17	region through its critical mass, strategic location, capacity for	
18	i nnovati on and development and connections within the national	
19	transport framework."	
20	Enhancing the choices and robustness of energy supply	15: 07
21	is described a prime consideration in relation to	
22	spatial policies:	
23	U.D. i was a sound i describing in the sound of	
24	"Prime consideration in terms of spatial policies relating to energy	
25	i hol ude:	15: 07
26	Developing energy infrastructure on an all island basis to the practical and mutual benefit of both the Republic and	
27	mutual benefit of both the Republic and Northern Ireland;	
28	strengthening energy networks in the west, the north west, border and north	
29	west, the north west, border and north eastern areas in particular;	

enhancing both the robustness and security of energy supply across the regions through improvements to the national grids for electricity and gas."

4

5

6

7

8

9

10

11

12

13

14

1

2

3

The proposed development accords with the provisions of 15:07 the National Spatial Strategy. The proposed development will provide an alternative source of gas supply to the island of Ireland, thus enhancing security of supply in a sustainable manner to the whole island. The establishment of gas infrastructure to 15:08 North Kerry and West Limerick will strengthen the gas grid in the region as well as nationally and contribute to the balanced regional development by enhancing the choices of energy supply.

15: 08

15

16

17

18

19

20

21

22

23

24

25

26

27

28

29

South West Regional Plan Authority - Regional Planning Gui del i nes 2004. Section 4.5.4 of volume 2 of the EIS addresses the South West Regional Planning Guidelines and these are referred to later as RPGs. The aim of the quidelines is to act as a bridge between national 15: 08 and local plans setting out objectives for the achi evement of sustainable growth and prosperity of the region over a 16 year period, which is 2004 to 2020. These Guidelines were produced before the adoption of the 2003 County Development Plan which is why the 15: 08 reference in the text is to the 'draft' 2003 plan. The Guidelines promote growth in line with the National Spatial Strategy and the draft 2003 Kerry County The Guidelines highlight the need to Development Plan.

1	develop energy infrastructure in the southwest to act	
2	as a stimulus to economic development:	
3	"An automoi an affe the (man) matuumly to	
4	"An extension off the (gas) network to the Kerry hub, if economically	
5	feasible, will help provide an alternative energy supply and act as a stimulus to economic development and	15: 0
6	its extension is supported by the RPGs. Planning authorities should take into	
7	account the location of strategic gas	
8	infrastructure when planning pŏlicĭes is being considered and similarly when	
9	considering detailed layout of development at the planning application	
10	stage to as far as possiblě avoid the need for relocation of gas transmission infrastructure."	15: 0
11	illi asti ucture.	
12	The Guidelines also state:	
13	"Cas provides an excellent form of	
14	"Gas provides an excellent form of energy and can be a key catalyst in	
15	secuříng industrial development. As such, its rollout is strongly supported by these Guidelines "	15: 1
16	by these Guidelines."	
17	The Shannon LNG terminal will be a key element of gas	
18	infrastructure development and will assist in the	
19	economic development of North Kerry, thus furthering	
20	the objectives of the Regional Planning Guidelines.	15: 1
21		
22	Mid West Regional Planning Guidelines 2004. The Mid	
23	West Regional Planning Guidelines 2004 set out the	
24	regional development strategy and Regional Planning	
25	Guidelines for Co. Clare, Limerick City and County and	15: 1
26	North Tipperary.	
27		
28	The Shannon Estuary is seen as a major resource in the	
29	region. In the review of the region in relation to the	

1	Shannon Estuary the Guidelines recognise that the	
2	Shannon Estuary presents significant possibilities	
3	i ncl udi ng:	
4	"Large scale industrial sites with	
5	potential at Askeaton and Ballylongford."	15: 11
6	bailt yr origi or d.	
7	There are a number of development theme for the region	
8	including a theme for energy:	
9	"Ensure that the energy needs of the	
10	"Ensure that the energy needs of the region are met and that the provision of energy resources is speedy and	15: 11
11	of energy resources is speedy and without administrative delay: Promotion of renewable energy."	
12	Tromotron or renewable energy.	
13	Chapter 3 of the Guidelines address the key issues for	
14	the region including:	
15	"Connectivity The future growth of	15: 11
16	"Connectivity: The future growth of the region will be absolutely dependent on how well the region can engage with	
17	on how well the region can engage with national and international players whether through e-trade, air transport,	
18	shi ppi ng or domesti c surface transport."	
19	transport.	
20	The development strategy proposed in the Guidelines is	15: 11
21	based on the needs of the different zones into which	
22	the region is divided. West Clare is zone 3. Amongst	
23	issues of the zone are population decline. The	
24	development potential of the zone includes it acting	
25	as:	15: 12
26	"Centre for specialised regional,	
27	social and commercial facilities e.g. Shannon Estuary and Atlantic based	
28	acti vi ty."	

I	the Shannon LNG project will further the objectives of	
2	the Mid West Regional Planning Guidelines in that it	
3	will help fulfil the potential of the region by	
4	developing the site at Ballylongford for industrial use	
5	and utilising the marine resources of the Shannon	15: 12
6	Estuary for economic development.	
7		
8	National Development Plan 2007-2013. The €184 billion	
9	National Development Plan 2007-2013 builds on the	
10	significant social and economic achievements of the	15: 12
11	National Development Plan 2000-2006 Launched in January	
12	2007 and entitled "Transforming Ireland - a better	
13	quality of life for all". This new seven year plan is	
14	a major milestone in building a prosperous Ireland for	
15	all characterised by sustainable economic growth,	15: 13
16	greater social inclusion and balanced regional	
17	development. The Shannon LNG terminal project was	
18	reviewed in the context of the objectives of the	
19	National Development Plan in section 4.5.1 of volume 2	
20	of the EIS.	15: 13
21		
22	The main objectives of the plan include:	
23	"The improvement of structural	
24	"The improvement of structural infrastructure deficits in order to increase competitiveness, regional	
25	increase competitiveness, regional development and to meet the demands of	15: 13
26	the growing population;	
27	the enhancement of enterprise development, science, technology and innovation, working and	
28	innovation, working age training and skills provision, in order to create a	
29	much economic performance to be more competitive and to increase the	

1	<pre>from both national and foreign investment;</pre>	
2	the integration of regional development	
3	within the national spatial strategy framework of gateway cities and hub	
4	towns in order to achieve economic growth in the regions and major	
5		15: 14
6	the investment in long-term environmental sustainability to (a)	
7	preserve the integrity of our natural	
8	environment for füture generations and (b) meet our climate change	
9	commitments;	
10	the promotion of an all-island strengthening in collaboration in areas	15: 14
11	strengthening in collaboration in areas of infrastructure, research and development, skills and innovation and the provision of public services;	
12	·	
13	the promotion of social inclusion and;	
14	the provision of value for taxpayers' money."	
15		15: 15
16	The overall objective of the energy programme of the	
17	Plan will be to ensure security of supply nationally	
18	and regionally, a supply which is competitively priced	
19	and for the long-term while meeting a high level of	
20	environmental standards. The energy programme will	15: 15
21	even include some 8.5 billion investment in energy over	
22	the planned period. The strategic infrastructure	
23	subprogramme has been allocated €1.2 billion of that	
24	investment. This will be funded by the Exchequer and	
25	capital investments by ESB, Bord Gáis Éireann, Bord Na	15: 15
26	Móna and EirGrid.	
27		
28	The Plan states that the:	
29		

"Ability of the economy to perform

1	successfully depends critically on the supply of adequate, affordable and	
2	environmentally sustainable energy. Security of supply is of paramount	
3	i mportance to ensuring the continued economic development of the country and	
4	the spending objective. Without an	
5	the spending under this plan will help ensure that objective. Without an expectation and delivery of the secure	15: 16
6	supply of energy, investment and output of the economy will suffer. Therefore, during the Plan period there will be	
7	significant investment in crucial	
8	i nfrastructure. "	
9	The Plan also states that security of energy supply and	
10	lessening the dependence on any one source of energy or	15: 16
11	fuel type will be a key challenge in ensuring the	
12	efficient operation of a competitive energy market.	
13	Over the period 2005-2010 energy demand is projected to	
14	increase by 1.6% per annum this and level of increase	
15	can be expected to be maintained to 2013. Within this	15: 16
16	overall growth figure annual electricity demand is	
17	expected to grow by 3.1% and annual gas demand is	
18	expected to grow by 6.5%. The Plan states that demand	
19	for energy must be managed in a sustainable way. The	
20	Plan also underpins many of the actions and targets	15: 17
21	listed in the EU Energy Green Paper 2006 to which	
22	Mr. Paddy Power has made reference in his evidence.	
23		
24	Mr. Inspector, in the EIS section 4.5.1 of volume 2 in	
25	this context the EU energy Green Paper 2006 was	15: 17
26	incorrectly referred to as the EU Energy White Paper	
27	2007.	
28		
29	The proposed Shannon LNG terminal, which will be	

developed using private funds, accords with the objective of the National Development Plan. As explained by Mr. Paddy Power in his evidence the proposed terminal will be able to source natural gas for a diverse worldwide range of countries and suppliers thus enhancing security of supply and ensuring a diversity of energy supply to compete with oil or coal in a sustainable manner. It will also contribute to the improvement of energy infrastructure in Ireland and will promote regional development in the 15:18 North Kerry area. The project represents a major investment by private funds in the rural economy.

Strategic Plan for the Shannon Estuary.

In the pre-application consultations with the Board, Shannon LNG were advised that the Board in its consideration of the project would have regard to how the proposed development would comply with the objectives of any strategic plan for port development on the Shannon Estuary. This is why information on the Department of Transport's strategic policies in

15: 18

15: 18

15: 19

relation to ports and Shannon Foynes Port Company's Strategic Development Plan were included in section

policies and the Plan do not have a statutory basis in

planning as is the case with the plans discussed above.

The Department of Transport published its policy

4.5.5 of volume 2 of the EIS, even though those

1	statement Ports Policy Statement in January 2005.	
2	While the ports are state owned, the Department's	
3	current policy is to require the ports to operate	
4	commercially without Exchequer support and to provide	
5	adequate in-time capacity for the future needs of the	5: 19
6	economy. Private sector investment is encouraged. The	
7	policy statement did not identify any specific	
8	shortfalls for Shannon Foynes Port.	
9		
10	The Department of Transport published an information 15	5: 19
11	paper based on the report of Fisher Associates	
12	consultants regarding future seaport capacity	
13	requirement for unitised trade in Ireland, October	
14	2006. This addressed potential expansion plans for	
15	Shannon Foynes Port. The expansion plans related to	5: 20
16	potential extensions to the port facility at Foynes and	
17	not to the Shannon Development Land bank or to the site	
18	of the Shannon LNG terminal. In June 2004 Shannon	
19	Foynes Port Company announced a strategic Development	
20	Plan to invest €53.5 million over the following five 15	5: 20
21	years to create new shipping, industrial and commercial	
22	facilities along the Shannon Estuary. As stated on the	
23	company's website:	
24	"The detailed strategic plan document	
25		5: 20
26	within the company's management team rather than as a document for public release. Extracts from the	
27	presentation were given at the media briefing are provided in the following	
28	file."	

1	The published highlights of the strategic plan are as	
2	follows: €53 million for the development of the	
3	estuary; commercial development of 44 acres in Limerick	
4	Docklands; proposed container transshipment at	
5	Ballylongford; enhancement of facilities at Foynes;	15: 21
6	upgrade of Shannon Airport oil jetty; container line	
7	service between Rotterdam and Shannon Estuary; new	
8	downstream port facilities within five years; new ferry	
9	service along the Shannon Estuary; partner and Leader	
10	in regional development.	15: 21
11		
12	While the reference to Ballylongford is to the Shannon	
13	Development Land bank, the Shannon Foynes Port Company	
14	has welcomed the Shannon LNG terminal proposal as	
15	fitting comfortably within the company's long held	15: 21
16	aspiration of sensible development of the lower	
17	estuary. A copy of the letter from Shannon Foynes Port	
18	Company expressing this view is attached to this	
19	statement and this is at the end of the statement.	
20		15: 22
21	I will turn now to the response to the submissions to	
22	the Board. Submission L007 (which is an addendum to	
23	L003) and also submission L004. These submissions	
24	state that variation No. 7 to the Kerry County	
25	Development Plan is invalid. This is not a matter for	15: 22
26	Shannon LNG.	
27		
28	Submission LO55 from Clare County Council. Clare	
29	County Council's submission refers the Board to	

1 sections 5.7 and 5.9 of the Mid West Regional Planning 2 Guidelines 2004. Section 5.5 states that the 3 Development Plans should facilitate the provision of 4 energy networks provided that the development provides significant economic or social infrastructure, the 5 15: 23 6 design will achieve the least environmental impact 7 consistent with not incurring excessive cost and impact 8 mitigation has been included. The existing 9 infrastructure and its safety requirements should be 10 taken into account and not compromised. Section 5.9 15: 23 11 relates to the protection of the quality and character 12 of the landscape. It also requires the consideration 13 of the impact of developments on water bodies. 14 15 Clare County Council's submission refers the Board to 15: 23 16 policies CDP 46, CDP 51, CDP 52 of the Clare County 17 Development Plan 2005 and the ENV1 and ENV2 of the West Clare Local Area Plan 2003. Policies CDP 46, 51 and 18 19 ENV1 and 2 relate to the protection of landscapes and 20 Policy CDP 52 relates to the protection of 15: 24 21 designated sites, protected species and their habitats 22 and features of major importance to flora and fauna and 23 features of geological and geomorphological importance. 24 Clare County Council's submission makes specific 25 15: 24 26 observations in relation to the assessment of 27 cumulative impacts, visual impact, health and safety

and environmental/heritage issues.

considerations in relation to land use in the county

28

I		
2	Response: Evidence has been given to this hearing on	
3	strategic importance of the project and evidence will	
4	be given on the avoidance of impacts where this is	
5	feasible and mitigation of impacts which cannot be	15: 24
6	avoided. In particular Mr. Thomas Burns will address	
7	visual and landscape impact and mitigation. This	
8	evidence will show that the project will be in	
9	compliance with these policies and objectives of the	
10	Clare County Development Plan and West Clare Local Area	15: 25
11	Plan. In later evidence I will address the submission	
12	in relation to the assessment of cumulative impact.	
13	The specific observations on visual impact, health and	
14	safety considerations in relation to land use in the	
15	county and environmental/heritage issues will be	15: 25
16	addressed by Mr. Thomas Burns, Dr. Andy Franks,	
17	Mr. Carl Dixon, Dr. Simon Berrow and Mr. Stiofán	
18	Creavan respectively.	
19		
20	Submission LO56 from Kerry County Council. In relation	15: 25
21	to international and national plans and policies, in	
22	its submission Kerry County Council concluded:	
23	"International accessment European and	
24	"International assessment, European and national policy recognises the need for	
25		15: 26
26	Regional Planning Guidelines recognise the importance of gas infrastructure	
27	and the fact that its presence can act as a catalyst in attracting further	
28	industry. While section 4.5.1 paragraph 5 of the EIS refers to the EU	
29	Energy White Paper, Kerry County Council was unable to source such a document and is unable to confirm the	

1 2	assertion that the NDP underpins many of the actions listed in the White Paper. Notwithstanding this, the planning authority is of the opinion	
3	that all international, national,	
4	regional plans and guidelines support the strategic need and the benefits of such a development at both a national	
5	and county level."	15: 26
6		
7	As I stated above the reference to EU Energy White	
8	Paper 2007 in the EIS should have been to the EU Energy	
9	Green Paper 2006.	
10		15: 27
11	In relation to the County Development Plan and relevant	
12	Local Area Plans, in its submission Kerry County	
13	Council concluded:	
14		
15	"The site of this proposed development is zoned for industrial use. It is	15: 27
16	considered by the planning authority that the proposed development does not	
17	contravene any section of the plan and that the objectives of the plan support	
18	the provision of industrial development at this location capitalising on its strategic coastal location. It is	
19	considered that the proposal is in	
20	accordance with the provisions of the Development Plan and in accordance with	15: 27
21	the proper planning and sustainable development of the area."	
22		
23	I agree with the conclusions expressed in Kerry County	
24	Council's submission.	
25		15: 27
26	Conclusions. The Shannon LNG terminal site is zoned	
27	for industrial development and in particular for a	
28	premier deep water port and major industrial	
29	development. I am of the opinion that the Shannon ING	

1	terminal project supports th	ne objectives of	f the Kerry	
2	County Council Development P	Plan and the Tar	rbert and	
3	Ballylongford Local Area Pla	ns. The projec	ct will	
4	further the objectives of th	ne South West Re	egi onal	
5	Planning Guidelines, the Mid	l West Regional	PI anni ng	15: 28
6	Guidelines, the National Dev	velopment Plan,	the National	
7	Spatial Strategy and Governm	nent policies.	In	
8	particular in relation to ba	al anced regional		
9	development, the improvement	of infrastruct	ture	
10	provision in the southwest a	ınd midwest regi	ons, the	15: 28
11	economic development of Co.	Kerry and diver	rsity and	
12	security of energy supply.	Thank you.		
13				
14	END OF SUBMISSION OF MS. LYD	<u>DEN</u>		
15				15: 28
16	I NSPECTOR:	Thank you, Ms.	Lyden. It's	
17		now getting on	for 3:30,	
18	I take it there are plenty o	of questions to	the last	
19	three speakers, but maybe we	e will take a fi	ve minute	
20	break before we get in on th	nat.		15: 29
21				
22	(SHORT ADJ	JOURNMENT)		
23				
24				
25				
26				
27	THE HEARING RESUMED AFTER A	SHORT ADJOURNME	ENT AS	
28	FOLLOWS.			
9				

1						
2			INSF	PECTOR:	Okay, I think it's about	
3					time to resume so if people	
4			can	take their seats again.	Before we get back to the	
5			prod	ceedings I have a special	request from the Kerryman	15: 39
6			who	are going to press this	evening and they just asked	
7			if	they might take a few pho	otographs so we will	
8			faci	litate them for a moment	or two with your	
9			i ndı	ul gence. (Short pause)		
10						15: 41
11			We v	will resume at this point	Do we have any questions	
12			for	the previous three speak	kers please. Ms. Griffin	
13						
14			<u>THE</u>	APPLI CANTS WITNESSES WEF	RE CROSS-EXAMINED BY THE	
15			<u>OBJI</u>	ECTORS AS FOLLOWS		15: 41
16						
17	61 Q		MS.	GRI FFI N:	My first question is to	
18					Mr. MacIntyre. On page 16	
19			of y	your statement, Mr. MacIr	ntyre, the bottom of the	
20			page	e, yesterday John McEllig	gott mentioned ExxonMobil	15: 41
21			are	experienced LNG operator	rs and in your response you	
22			say:			
23				"ExxonMobil do not oper	rate and have not	
24				operated any LNG regasi terminals."	fication	
25				torminars.		15: 42
26			Are	you, therefore, saying t	that they are not	
27			expe	erienced energy operators	5?	
28	A	•	Mr.	Inspector, I am saying t	that they have not operated	
29			anv	LNG regasification termi	1	

1	62	Q.	But the question or what you have responded to says:	
2			"ExxonMobil are experienced LNG	
3			"ExxonMobil are experienced LNG terminals operators."	
4				
5			And you have responded to that that they do not operate	15: 42
6			and have not operated any LNG regasification terminals	
7			so are you saying that they are not experienced or are	
8			you are implying and they are not experienced?	
9		Α.	Sorry, Mr. Inspector, I was responding that ExxonMobil	
10			do not and have not operated any LNG regasification	15: 42
11			termi nal s.	
12	63	Q.	So you are saying they are not experienced?	
13		A.	Mr. Inspector, I am saying they have not operated any	
14			LNG regasification terminals.	
15	64	Q.	I think I will leave it at that then. My second	15: 43
16			question is for Ms. Lyden. Starting at the very end of	
17			page 6 of your statement of evidence you say:	
18			"The Level Area Dian for Dellad and ford	
19			"The Local Area Plan for Ballylongford notes that the population of Ballylongford has declined in recent years which has result in the loss of	
20			years which has result in the loss of	15: 43
21			local services and closure of local business."	
22				
23			Can I just point out that the most recent figures from	
24			the Central Statistics Office show that in 2002	
25			Ballylongford had a population of 405 people and in	15: 43
26			2006 it was 406 people so it is actually up 0.2%.	
27			Likewise, in case people think that Tarbert is ghost	
28			town, the population of Tarbert in 2002 was 548 people	
29			and in 2006 was 550 people which was up 0.4%.	

1		Α.	MS. LYDEN:	I was quoting directly from
2				the plan. If you give me a
3			minute I will find it for y	ou. I was referencing page
4			21, fourth paragraph of the	Ballylongford Local Area
5			PI an.	15: 44
6	65	Q.	Right. So does that mean t	hen that the Plan is right
7			and the Central Statistics	Office is wrong or vice
8			versa?	
9		A.	I just quoted from the plan	
10			MS. GRIFFIN:	Okay. One more item, 15:45
11				Ms. Lyden. Quite a few
12			times in your report you ha	ve mentioned the site at
13			Ballylongford, the land at	Ballylongford, the land is
14			actually in Tarbert and not	in Ballylongford.
15			I NSPECTOR:	Okay. A gentleman here? 15:45
16			MR. LYNCH:	Noel Lynch, Ballylongford.
17			I NSPECTOR:	Sorry, could I just have
18				your name please.
19			MR. LYNCH:	Noel Lynch, Ballylongford
20				Enterprise Association. In 15:45
21			relation to the latest stat	istics available to us
22			between the years of 1991 a	nd 2002 the townland of
23			Lislaughtin and Carraig in	Ballylongford have had a
24			population loss. Carraig h	as had a population loss of
25			14%. During the same perio	d Tarbert in the same census 15:46
26			population has had a popula	tion loss of 18%.
27			MS. GRIFFIN:	Well, the reports are
28				obviously conflicting
29			because according to the la	test census records it says:

1		
2	"The population of Ballylongford is up in all 0.2%. There is a decrease in	
3	Carraig, but there is an increase in Lislaughtin."	
4		
5	That is 2006 so that is the last six years. The quote 15:	46
6	is "Ballylongford has declined in recent years", how	
7	long ago is recent years.	
8	MR. LYNCH: Kerry County Council a	
9	number of years ago have	
10	instigated what is called an Integrated Services 15:	46
11	Project in Ballylongford. One of the primary reasons	
12	for this was the decline in Ballylongford. We live	
13	there, we know about this decline and one of the major	
14	declines has been in our population. I haven't got the	
15	figures from 2002 upwards, I am just quoting the	47
16	figures which I have from 1991 to 2002 which shows the	
17	decline in the Carraig area of 14% and in Tarbert of	
18	18%.	
19	MS. GRIFFIN: Well, 2002 is six years	
20	ago. I am saying that 15:	47
21	since 2002 the population has actually increased.	
22	MS. MURPHY: Mr. Inspector, Joan Murphy,	
23	Tarbert Development.	
24	I think the confusion here is that the population	
25	figures which are published by the Central Statistics 15:	47
26	Office refers to DEDs, District Electoral Divisions.	
27	We talk in terms of parish and they don't coincide and	
28	that's why it is very difficult, we are not comparing	
29	like with like. So when we talk about population	

1	decline in Tarbert or Bally	longford we are basically	
2	talking about the parish of	Tarbert or the parish of	
3	Ballylongford as distinct t	o the DEDs. In the case of	
4	Tarbert I know it also take	s in another parish so it's	
5	a bit confusing really beca	use they are two different	15: 48
6	figures. Thank you, Mr. In	spector.	
7	I NSPECTOR:	Okay. Any further	
8		questions? The gentlemen	
9	here with the beard.		
10	MR. ROBI NSON:	Mr. David Robinson	15: 48
11		representing Save Haven of	
12	Milford Haven. We are a gr	oup of concerned residents	
13	and we have safety concerns	about the two LNG	
14	terminals, namely South Hoo	k and Dragon. My question	
15	is to Mr. Blair MacIntyre.	I would like to point out	15: 48
16	that in Milford Haven we do	on't have a Quantitative Risk	
17	Assessment for a spill of L	NG on water except for a	
18	guillotine cut of one 10 in	ch hard-arm which goes from	
19	ship to jetty. In SIGTTO i	t states that the maximum	
20	credible spill and its esti	mated gas cloud range should	15: 49
21	be carefully established.	My question is what is your	
22	estimate of a maximum credi	ble spill and, secondly,	
23	what is your estimate of a	gas cloud range.	
24	MR. MacI NTYRE:	Mr. Inspector, I would	
25		propose that these issues	15: 49
26	are dealt with under the sa	fety module because	
27	I understand the evidence I	have given is related to	
28	site location and offshore	and this matter will be	
29	dealt with in the safety se	ecti on.	

1	I NSPECTOR:	Mr. Robinson, do you have
2		any pressing need for an
3	answer at this point, you wi	II be with us tomorrow?
4	MR. ROBI NSON:	I will be here tomorrow.
5	I NSPECTOR:	I think then it is best to 15:50
6		defer it to tomorrow. Any
7	further questions.	
8	MR. McELLI GOTT:	Yes.
9	MR. BRANI GAN:	I will make another
10		mi stake. The new 15:50
11	information that we have got	t today is really
12	extraordinary and useful.	
13	I NSPECTOR:	Sorry.
14	MR. BRANI GAN:	Do I go ahead?
15	I NSPECTOR:	I think we can hear you 15:50
16		now, yes.
17	MR. BRANI GAN:	As I say an immense amount
18		of extremely valuable
19	information has been provide	ed by the Applicants today.
20	Now, may I take this opportu	unity to say to the Board, 15:51
21	and we will be saying it aga	ain and again and again, we
22	are not on a level playing f	ield. This is a
23	multimillion pound organisat	tion with a plethora of
24	experts that few could argue	e with and on the other side
25	there are people like our ow	vn organisation which is 15:51
26	empowered by its articles of	association to conduct
27	marine research and we have	been doing that for half a
28	century, but we haven't got	the same facilities, to say
29	nothing of the finance end of	ofit, so consequently we

will be asking for the opportunity also to conduct the necessary investigations into some of these statements which have been made and which appear to be in conflict with certain information that we have. Now, very broadly our information comes on a daily basis from 15:52 Lloyd's List. Now, those who know Lloyd's Lists have been published in 1734 and are still published daily and every morning I get a copy of what's happening on the international scene and marine affairs, it is all carefully noted by our people. Now, what we will 15: 52 require is to be able to consult with a geologist, which we have, coastal experts in relation to what Mr. Power has given, an very interesting analysis of the surveys they did, we will have to consider that as We have economists, mathematicians, legal well. 15: 53 advisors, a whole plethora of people and the information that we have on aspects of the marine industry and specifically what we are addressing here comes initially from what we find on a daily basis in Lloyd's List which is an internationally recognised 15: 53 authority and they don't play games with trying to put a spin on one thing or another, they are too professional for that and consequently we are guided by them.

25 26

27

28

29

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

15: 53

Firstly, I want to say that we are not on a level playing field, that's quite obvious and it is going to be very difficult for us to get all the information that we require in order to deal with the statements

1	that have been made. Now, I do not at this stage	
2	suggest we get involved in any contradiction of what	
3	that was said because I am simply not in a position to	
4	do that until I get, for example, advice from our	
5	geologists on certain of the things that are said. One 1	5: 54
6	question that I asked, and this really surprised me,	
7	when we refer to the possibility of using the Kinsale	
8	field, we were working on the basis of information that	
9	is contained in the Department of Energy, the Joint	
10	Committee, who discussed all that type of thing and	5: 54
11	they recommended we should do that. Then it came out	
12	in the Green Paper to say that they are complying with	
13	that particular requirement. What appeared to be said,	
14	and they could be totally correct in what they are	
15	saying, I will have to talk to the geologist about	5: 54
16	this, I would like to ask one question: Did our	
17	friends on the other side advise the Government that	
18	what is contained in the Joint Committee's report and	
19	what is contained in the Green Paper, insofar as	
20	Kinsale is concerned, was not a practical matter	5: 55
21	because it is a belief at departmental level at any	
22	rate, and I take my guidance on certain matters, not	
23	just from the department, but from geologists and	
24	economists and all sorts of other people so we have an	
25	impression that that Kinsale field could be used in a $^{-1}$	5: 55
26	particular way, maybe not. They may be quite correct	
27	in what they are saying.	

29

Secondly, I will like to ask Mr. MacIntyre to explain

to me the nature of the Kinsale field which I understand to me what I would call rock formation. It is not a cavern as you would get with salt caverns and we have asked people, including the Marine Institute and others, to give us as much information as 15:56 they can as to the availability of salt caverns as an alternative for storing the material. It's a very simple thing to create a cavern. The United States' total strategic supply is contained in salt caverns and a salt cavern can be created if the salt is there. would be one thing to discover the salt cavern, but to discover it in a place where these vessels could operate without being exposed to violent weather etc., that is another matter altogether, we are not necessarily confining ourselves to just the Kinsale 15: 56 We have made it quite clear that any subaqua areas which are suitable, having regard to the necessity of safety etc., that they would be examined and where possible try and find a means by which the gas can be actually stored. Now, that is a matter for 15: 57 discussion and as I say I am not entering into any contradiction, I don't challenge anything that is said, I have to get advice on it.

24

25

26

27

28

29

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

There is one other matter, it is gone out of my head anyhow. However, I very much appreciate the information that has been given. Much of it is new to me and to my colleagues and consequently it is a tribute to the occasion that this type of information

15: 57

1	can be made available. Than	nk you, Sir.	
2	I NSPECTOR:	Thank you. Mr. Power?	
3	MR. POWER:	Mr. Branigan asked the	
4		question what is the nature	
5	of the Kinsale Head gas fiel	d reservoir. He is	5: 58
6	correct, the nature of the k	Kinsale Head reservoir, it's	
7	sand stone, there were two p	orimary reservoirs and they	
8	are sand stone reservoirs.	It is not a cavern, it is	
9	not a salt cavern and Mr. Br	ranigan is also correct to	
10	say that gas can be stored i	n the Kinsale head gas 1	5: 58
11	reservoir. In fact, it has	been stored there for tens	
12	of millions of years over ge	eological time and	
13	Mr. MacIntyre has explained	how difficult it is or how	
14	difficult it would be to bri	ng an LNG facility or merge	
15	an LNG facility with the exi	sting facilities so 1	5: 59
16	I believe we have answered t	the two questions or queries	
17	that were asked.		
18			
19	Now, I should also add it is	s well known, and I assume	
20	that Mr. Branigan knows this	s, that the operator of the 1	5: 59
21	Kinsale gas field today uses	s the field and offers	
22	commercial storage in the fi	el d.	
23	I NSPECTOR:	Sorry, what do you mean by	
24		that?	
25	MR. POWER:	They offer commercial 1	5: 59
26		storage, they will store	
27	gas in the field and provide	e the gas to you. Let's say	
28	store it maybe during the su	ummer months and offer then	
29	smaller volumes back into th	ne marketplace in the winter	

1	months.	
2	I NSPECTOR:	This is their own gas that
3		is already there?
4	MR. POWER:	There is their own gas
5		that is already there or it 16:00
6	may be gas that comes f	from the pipeline. I am not
7	familiar with the prese	ent arrangements, storage
8	arrangements that they	are offering, but they do offer
9	storage facilities on t	the gas field. This gas could be
10	gas that comes from one	e of the reservoirs or it could 16:00
11	be gas that could be ta	aken out of the pipeline.
12	I NSPECTOR:	Pumped back in?
13	MR. POWER:	It is possible, yes.
14	I NSPECTOR:	So I eaving aside the
15		difficulties with a sea 16:00
16	based operation, if the	e Kinsale gas field was on land
17	could you pump gas back	cinto it relatively easily if
18	you had a LNG regasific	cation facility, could that gas
19	then be pumped into a c	depleted gas field on land?
20	mr. Power:	Yes, you can inject gas 16:0
21		back into the ground and
22	that is done on many oc	ccasions. It is done while you
23	are producing oil. Ver	ry often the gas that is produced
24	with the oil, a Governm	nent requirement may be rather
25	than in some countries	where they may flare it, the 16:0
26	requirement generally t	today would be to re-inject the
27	gas back into the grour	nd and keep it for future
28	generations, Inspector,	that's correct. The question
29	that was asked of us wa	as can we merge an LNG facility

4		1 16	
1	with the existing gas field	platform and we don't see	
2	any way of doing that.		
3	I NSPECTOR:	0kay.	
4	MR. POWER:	The answer to	
5		Mr. Branigan's question	16: 01
6	about the nature of the gas	field is that it's a	
7	sandstone body.		
8	MR. BRANI GAN:	Porous.	
9	MR. POWER:	This particular reservoir	
10	is	highly porous, its porosity	16: 02
11	maybe up to 20% in places o	r above and it's also	
12	permeable.		
13	MR. BRANI GAN:	Therefore, as I understand	
14		the answer that we have	
15	been given by Mr. Power it	is feasible	16: 02
16	(INTERJECTION)		
17	I NSPECTOR:	Sorry, I think people	
18		behind you probably cannot	
19	hear anything.		
20	MR. BRANI GAN:	It is feasible and	16: 02
21		practical and possible to	
22	inject gas back into these	fields in the Kinsale field	
23	etc., that's fair enough.	That would seem to reduce	
24	itself to the difficulties v	which I was getting from the	
25	albert als la company Marchael and a la la la company and		16: 02
26	suitable for the type of ship that have to go in there,		
27	is that the point?		
28	MR. MacINTYRE:	My point, Mr. Inspector,	
29		was that the difficulties	

I	of officating in offshore co	onditions that are difficult	
2	for ships and of the equipme	ent that is available for	
3	the transfer. The critical	point of offloading an LNG	
4	ship is the security of the	ship and the equipment used	
5	for offloading and the curre	ent technologies just do not	16: 03
6	support that.		
7	MR. BRANI GAN:	We have to get information.	
8		For example, the latest	
9	information well, not the	e latest, surely in the past	
10	year, was in Australia, Wood	dside, is it, and they are	16: 03
11	exporting gas and have the	regasification on board and	
12	they are delivering that to	the east. Now, I don't	
13	know where they are deliver	ing it to, I don't know	
14	whether it's going into sto	rage, but I will find out.	
15	However, as I say according	to the information I have	16: 04
16	and according to the freque	nt reports which we get say,	
17	and the bible as far as I ha	ave concerned is Lloyd's	
18	List, and according to the	information the usage of	
19	this regasification facility	y is much more extensive	
20	than you seem to suggest, b	ut I am not contradicting	16: 04
21	anybody, I will find out and	d it will be made known and	
22	thank you.		
23	MR. MacI NTYRE:	Mr. Inspector, if I could	
24		respond to that. I am	
25	quite well versed to say it	because I do some	16: 03
26	consulting work for Woodside	e, and they are working on a	
27	project which is at the feas	sibility and planning stage,	
28	and although I can't speak	too much about it because I	

do that, but there are difficulties involved with the

1	transfer of the ship to shi	p and other issues regarding
2	the equipment available to	do the job.
3	I NSPECTOR:	Ship to ship? Ship to
4	floating platform?	
5	MR. MacINTYRE:	Yes. They are proposing 16:04
6		and FSRU supplied by a ship
7	with transfer at sea. As I	say, I can't speak about it
8	because I do some work for	them, but it is still at the
9	concept and design stage, i	t is not operational.
10	I NSPECTOR:	Who is doing this research 16:04
11		work?
12	MR. MacINTYRE:	The company is Woodside
13		Energy of Australia. The
14	project and planning phase.	
15	I NSPECTOR:	Does that answer your 16:05
16		questi on?
17	MR. BRANI GAN:	Just this, sir. We decided
18		deliberately to make the
19	point that the facility for	storing the gas could be in
20	Kinsale and that was because it was in the	
21	Government and one of the questions I asked	
22	incidentally: Have the Department been advised that	
23	what they were doing is wrong?	
24	MR. POWER:	Obviously, I don't act in
25		any advisory role to the 16:05
26	Department. I can't speak	for the Department,
27	Mr. Inspector.	
28	I NSPECTOR:	When was this paper that
29		you might have intervened

1	i n?		
2	MR. POWER:	I am not familiar with what	
3		is being spoken about,	
4	Mr. Inspector, to tell you	the truth.	
5	I NSPECTOR:	Can you clarify that,	16: 06
6		Mr. Brani gan?	
7	MR. BRANI GAN:	Yes. Well, we are in	
8		occasional, not constant,	
9	but occasional contact with	the Department and they	
10	still hold to what is conta	ined in the Joint	16: 06
11	Committee's Report and in t	he Green Paper, on the	
12	position we have commented	on.	
13	I NSPECTOR:	Hold on a moment. It is	
14		the Joint Committee's	
15	reports and the Green Paper	?	16: 06
16	MR. BRANI GAN:	I beg your pardon?	
17	I NSPECTOR:	You are saying that this	
18		possibility was mentioned	
19	in the Joint Committee Repo	rt and in the Green Paper?	
20	MR. BRANI GAN:	That's right. In the Joint	16: 06
21		Committee's Report they	
22	recommended it. The impres	sion I have, and I can't	
23	find the specific reference	today, but the impression I	
24	have is that it is stated i	n the Green Paper that it is	
25	being done. So, as I say.	However, there doesn't	16: 07
26	seem I can only act, my	group can only act on the	
27	type of information, on thi	s kind of an issue, that we	
28	would get from the Governme	ent documentations. We are	
29	strict in one thing, we nev	er ever put forward any	

1	ideas except if they are ba	sed on facts that are	
2	related in the official doc	uments. We don't express	
3	opinions at all. We deal o	nly with facts.	
4			
5	Our impression is that it is	s still quite possible, with	16: 07
6	the possible exception, and	Mr. MacIntyre has made his	
7	position quite clear. Mayb	e it would be the	
8	difficulties of getting an	LNG ship in there and, also,	
9	the system of discharging,	with various pipes etc., it	
10	could be quite a delicate a	nd, perhaps, difficult. But	16: 08
11	how are the existing people	who are putting gas in, how	
12	do they get it in? You sai	d that there are people	
13	putting in gas now.		
14	MR. POWER:	Let me just respond to the	
15		first question first.	16: 08
16	MR. BRANI GAN:	Sorry.	
17	MR. POWER:	Because I believe,	
18		Mr. Inspector, that it is	
19	addressed in the response by	y Mr. MacIntyre and I will	
20	read it again. The submiss	ion was that:	16: 08
21	"INC can be delivered	converted to gas	
22	"LNG can be delivered, on board the carrying	tanker and pumped	
23	into an offshore gas c the now nearly deplete and as Recommended By	d Kinsale fields	
24	Committee on Marine an Resources."	d Natural	
25	Resources.		16: 08
		and in Ma Disimia (aia)	
26	The response to that is cov	ered in Wr. Blair's (Sic.)	
2627	The response to that is covevidence and it ends up by		
	·	saying that the Joint	

1	storage needs to be explored	d, quantified and costed,	
2	which is, in fact, a call fo	or research, as opposed to a	
3	recommendation for adoption.		
4	MR. BRANI GAN:	Well, that says it all to	
5		me. That's fine. I will 1	16: 09
6	be in touch with the Departm	ment and see to what extent	
7	they have gone along those	lines and will report it	
8	back.		
9	I NSPECTOR:	Okay Mr. Branigan. What	
10		about the matter of the	16: 09
11	storage in salt caverns, do	es anybody have anything to	
12	say on that?		
13	MR. POWER:	I am definitely not an	
14		expert on storage in salt	
15	caverns. I am not aware of	any salt caverns available 1	16: 09
16	for that purpose in this vi	ci ni ty.	
17	I NSPECTOR:	In which vicinity?	
18	MR. POWER:	Like where we are today, in	
19		I rel and?	
20	MR. J. McELLI GOTT:	Larne.	16: 10
21	MR. POWER:	I am not aware of them.	
22		They may be there.	
23	MR. KEARNEY:	They are, they are in Larne	
24		in Northern Ireland.	
25	I NSPECTOR:	Just on the matter of Larne 1	16: 10
26		in Northern Ireland.	
27	MR. BRANI GAN:	We know that there are salt	
28		caverns up there, but	
29	whether gas can be put into	them we don't know.	

1	I NSPECTOR:	But are they still not	
2		actively in use as salt	
3	caverns?		
4	MR. BRANI GAN:	I don't really know. But	
5		there is an organisation,	16: 10
6	and I think they have run o	ut of gas themselves now, in	
7	Northeast England, in North	Cumbria, if I am not	
8	mistaken. They have been p	umping gas into salt caverns	
9	for some time. I understand	d it has been discontinued	
10	now. But it can be done.	But whether there is any	16: 10
11	it wouldn't be sufficient,	sir, that salt caverns	
12	deposits were found. They	would have to be found in a	
13	place where you could bring	a tanker in, and that might	
14	be a very, very difficult t	hing to do.	
15	I NSPECTOR:	I think that's highly	16: 11
16		optimistic, I would have to	
17	say that.		
18	MR. BRANI GAN:	Well, again, the same, we	
19		are extremely careful that	
20	we don't say or pursue any	particular line that	16: 11
21	commonsense and good techni	cal knowledge would show	
22	that we are on the wrong tr	ack. We don't get involved	
23	in anything of that nature.	So, it may very well be	
24	optimistic, but I have rese	rvations about that.	
25	I NSPECTOR:	Okay, thank you	16: 11
26		Mr. Brani gan.	
27	MR. BRANI GAN:	Thank you sir.	
28	I NSPECTOR:	Mr. Fox.	
29	MR. FOX:	Mr. Inspector, yesterday we	

1		saw a couple of very good	
2	videos in relation to gas t	erminals, LNG terminals both	
3	onshore and offshore, and I	am somewhat confused now by	
4	Mr. MacIntyre's response to	a submission by Johnny	
5	McElligott, where he said t	hat ExxonMobil have	16: 12
6	submitted a planning applic	ation for a Blue Ocean	
7	Energy offshore LNG 20 mile	s off New York. I saw the	
8	video. I saw the picture.	A picture is worth a	
9	thousand words. And Mr. Ma	cIntyre is saying that there	
10	is no application, there is	no permission, so what's	16: 12
11	the position there from Mr.	MacIntyre?	
12	MR. MacINTYRE:	Mr. Inspector, I think it	
13		was on the 11th December of	
14	last year that ExxonMobil r	eleased some publicity	
15	material, which, I think, s	ome of it we saw yesterday,	16: 12
16	on a proposed terminal off	New York. As I stated,	
17	there has been no applicati	on to any regulatory	
18	authority submitted by Exxo	nMobil. Only that publicity	
19	material, which is very vag	ue in detail and gives no	
20	time scale. It is purely a	publicity release of	16: 13
21	concept.		
22	MR. FOX:	Thank you, Mr. Inspector.	
23		I missed that part, thank	
24	you.		
25	I NSPECTOR:	Mr. McElligott?	16: 13
26	MR. J. McELLI GOTT:	Yeah, hi. I would like to	
27		go back to the ability to	
28	store LNG directly into sal	t caverns. I read in a	
29	Poten report that there is	now new technology that	

1	allows LNG carriers to pump	directly from an LNG	
2	carrier into salt caverns.	I am wondering would the	
3	technology be the same to p	ump into an underground	
4	reservoir as it would be to	pump into a salt cavern,	
5	Mr. MacIntyre?		16: 14
6	MR. MacINTYRE:	The technology would be	
7		broadly the same, yes.	
8	MR. J. McELLIGOTT:	Okay, because that's the	
9		latest technology. Now, to	
10	go back to Mr. Power about	putting gas into the	16: 14
11	reservoirs in Kinsale. The	y have stated that one of	
12	their aims in this project	here, in Shannon LNG, is to	
13	have a strategic supply of	natural gas. But if the	
14	ability already exists to p	ump and it does exist and	
15	it is happening pumping	gas into the depleted gas	16: 14
16	field, or near the depleted	gas fields still controlled	
17	by Marathon, does that not	mean that we can have a	
18	strategic supply of gas? L	ike, for instance, the CER	
19	says that each tank in Tarb	ert will hold ten days	
20	supply of the country's nat	ural gas, could we not have	16: 15
21	the depleted gas fields, ne	ar depleted gas fields in	
22	Kinsale to do exactly the s	ame thing and then to pump	
23	it out when we need it? Be	cause we are still importing	
24	natural gas. So, through t	he pipeline, in the summer	
25	months, we can just fill up	the Kinsale underground	16: 15
26	reservoir and then pump it	out when we need it. But if	
27	the disruption of supply wa	s only for ten days or 15	
28	days you would have that am	ount.	
29	MR. KEARNEY:	But just the security of	

1		supply in the EU Directive,	
2	it relates to situations wh	nere, continental countries l	
3	suppose, in particular, the	ere could be severely cold	
4	weather and they need a gas	s reserve if there is a	
5	disruption of the primary s	supply. So, in effect, what 16	b: 16
6	Mr. Branigan is saying abou	ut pumping gas into depleted	
7	reservoirs in Kinsale, or e	else the caverns in the north	
8	of Ireland, will actually o	cover that requirement.	
9	I NSPECTOR:	Sorry, was that a question?	
10	MR. KEARNEY:	No, just a statement of 16	o: 16
11		fact.	
12	I NSPECTOR:	Do you have anything to say	
13		on that?	
14	MR. J. McELLIGOTT:	Okay, I will ask the	
15		question again so. From me 16	o: 16
16	the question is: If our ai	m is to have a strategic	
17	supply of natural gas, whic	ch would allow us to, if,	
18	say, the interconnector was	s cut in Moffat and it was	
19	taking five or ten days to	get fixed, then could we not	
20	take the gas out of the dep	oleted gas field, or near 16	b: 16
21	depleted gas field, in Kins	sale and use that while the	
22	interconnector is being fix	ced?	
23	MR. POWER:	Could I respond to that	
24		Mr. Inspector? The concept	
25	behind our proposal here, w	ve have explained in great 16	b: 17
26	detail how the United Kingo	dom, North Sea gas reserves,	
27	that source of gas is deple	eted rapidly. What the LNG	
28	terminal provides is direct	access to a number of other	
29	worldwide sources. In rela	ation to Kinsale, the Kinsale	

1	Head Gas Field is operate	ed by another operator and they	
2	may develop their own pro	oposals in the future in	
3	relation to gas activition	es.	
4	MR. J. McELLIGOTT:	Weren't you President of	
5		Marathon? So you should 16:	18
6	know what they can do do	wn in Kinsale. I asked you can	
7	it be done first of all?		
8	MR. POWER:	Mr. Inspector, it would be	
9		inappropriate for me to	
10	speak on behalf of Maratl	hon. I am not an employee of 16:	18
11	Marathon Oil Company at	this stage.	
12	MR. J. McELLIGOTT:	Okay, I'll put it another	
13		way. Would you know that	
14	of the gas industry here	, isn't it possible and isn't	
15	it happening that gas is	being pumped into the depleted 16:	18
16	gas fields at the moment	, through the existing	
17	pipelines infrastructure	, into the depleted gas fields	
18	in Kinsale?		
19	MR. POWER:	Again, Mr. Inspector, I am	
20		not involved on a	18
21	day-to-day basis with Ma	rathon's activities, so he	
22	should really put this q	uestion to Marathon.	
23	MR. J. McELLIGOTT:	But you are supposed to	
24		have an overall view of	
25	what's happening in the	gas industry here. 16:	18
26	I NSPECTOR:	ls it technically feasible	
27		to reverse the flow in the	
28	pipeline from Kinsale, s	o that you would effectively	
29	pump back into the deple	ted gas field? Is there any	

1	likelihood that that is hap	pening at the moment?	
2	MR. POWER:	It is technically feasible	
3		to move gas to reverse	
4	the gas flow in Kinsale and	put it back into the	
5	ground, yes.		16: 19
6	I NSPECTOR:	Who would control that?	
7		Is it Bord Gáis?	
8	MR. POWER:	No. Marathon are the	
9		operators of the gas field,	
10	so to take gas out of the re	eservoir or out of the gas	16: 19
11	field, for whatever is rema	ining there, or to put gas	
12	back into it that would be	an issue for Marathon.	
13	I NSPECTOR:	But they can't effectively	
14		purge the Bord Gáis network	
15	and suck out of it.		16: 19
16	MR. POWER:	No, the Bord Gáis network	
17		it would have to be kept at	
18	a proper pressure regime.	Something like this would	
19	have to be done with the co	operation of Bord Gáis.	
20	That's correct.		16: 20
21	I NSPECTOR:	So, when you are talking	
22		about using it for storage	
23	you are, maybe, pumping out	from one part of the field	
24	and pumping it back in to a	nother part of the field, is	
25	that it?		16: 20
26	MR. POWER:	That might be possible.	
27		But they have been	
28	depleting all the reserves	that they have had at the	
29	field over the last 20 years	S.	

1	MR. J. McELLIGOTT: My point is that we already	
2	are still importing gas	
3	from the UK and that's coming through the existing	
4	pipeline interconnector from the UK. So in the	
5	existing gas that we are importing we can put the extra $_{ ext{1}}$	6: 20
6	gas into the reservoir through the existing	
7	infrastructure. And that is happening already, from	
8	what I could read, they can inject it in. They call it	
9	injecting. But I think the problem is that, from what	
10	I have read, is that Marathon control that and while $_{\scriptscriptstyle 1}$	6: 21
11	they still have a little bit of gas in it they control	
12	it. But there is problem, something about Bord Gáis	
13	now have applied for more percentage of that ability to	
14	put the gas in there. Separate from Marathon. And	
15	they are the experts, they should be able to explain	6: 21
16	that very clearly, because they should know the gas	
17	business and what are the current operating procedures	
18	down there. But my understanding is that those gas	
19	reservoirs in Kinsale can be used and are being used	
20	and if they store, say, 20, 50, 100 days of gas in	6: 21
21	there then if there is a problem, that the	
22	interconnector is cut for a short time, then we can	
23	just use the gas from the depleted gas fields. Then we	
24	will still have a constant supply in Ireland. And in	
25	the meantime the Corrib gas field will come on stream 1	6: 22
26	and, I think, we do not have any short term supply of	
27	gas problems. The Government White Paper, I think,	
28	said that we had no energy gas supply problems in the	
29	short term or the medium term.	

provide an alternative source and you would also

29

1	provi de storage.
2	MR. POWER: Can the Kinsale reservoirs
3	store gas? The answer,
4	Mr. Inspector, yes, of course. But you still have to
5	source the molecules to put it into the reservoir. Our 16:2
6	proposal is to source the gas and to store it.
7	Although we are not proposing at this stage strategic
8	storage because that is being considered by the
9	Government. We are not proposing strategic storage at
10	this stage. But our proposal is to source the gas, 16:2
11	import it and have it in the LNG tanks at the terminal,
12	regasify it and then put it into the pipeline as it is
13	required on a daily basis.
14	MR. J. McELLIGOTT: The National Development
15	Plan says that one of the 16:20
16	aims of the National Development Plan is to have a
17	storage for greater security of supply. So, what I am
18	saying is that the LNG is coming to Exxon, the people
19	you say don't know anything. Exxon, who will be
20	controlling the Milford Haven terminal. Kinsale would 16:2
21	prove to be both a source of the LNG that would come to
22	Milford Haven. It can come through the existing
23	pipeline and go into the reservoir. The reservoir can
24	also be used as a strategic extra amount of gas that we
25	would hold. Because it is already gasified when it 16:20
26	goes through the network. It is just injecting the
27	full gas, not LNG, but gas into the caverns. Then Des
28	Branigan's plan would be to Ireland, if they want to
29	have their own LNG ships coming in, they can use the

1	latest technology to pump into the underground Kinsale	
2	reservoirs. So, that is an alternative that is	
3	feasible. Also, another point is that(INTERJECTION)	
4	INSPECTOR: Hold on a moment,	
5	Mr. MacIntyre has really 16:	: 26
6	said that it is at the experimental stage at this	
7	stage. The sea conditions are too rough and it is	
8	premature to(INTERJECTION)	
9	MR. J. McELLIGOTT: No, Accelerate Energy, for	
10	pumping into the Kinsale 16:	: 26
11	reservoir, Accel erate Energy al ready have that	
12	submerged buoy technology, were they can gasify and	
13	pump into it. They already have a working facility in	
14	deep water, off the coast of Louisiana.	
15	MR. SHEARER: It is 110 feet of water, 16:	: 26
16	which I don't know how deep	
17	Kinsale is.	
18	MR. KEARNEY: Kinsale is in about 300	
19	feet of water.	
20	MR. SHEARER: It is too deep for 163	: 26
21	Accel erates technology. I think we'd have to check	
22	that. But I believe their technology is only viable	
23	between 100 and 200 feet of water depth. So, it could	
24	not be located adjacent to the Kinsale field.	
25	16:	: 27
26	Let me address though the aspect of storage, because I	
27	think the US experience might be illustrative of here.	
28	It is technically correct that LNG or gas could flow	
29	through the interconnectors and be stored in Kinsale,	

setting aside the commercial considerations which would be, I think, probably staggeringly expensive potentially during the summer period and then regasified in the winter period. However, that would leave a very interesting concern for Ireland. If there 16:27 was problem with the interconnectors in the summertime and the storage field had been drawn down, for purposes of supplying winter volumes, there wouldn't be any gas in Kinsale to cover the rupture to the pipeline that could occur in the summertime. That is one 16:27 observation.

So, Kinsale only operates providing there is gas in Kinsale and it is relatively full. Of course, the minute you start withdrawing gas from Kinsale to meet market demand you don't have it full anymore and so you have got that issue to it and it depends on the pipeline network.

16: 28

So, when you look at the way the US operates, and the
US gas network is the most advanced in the world, as
far as its flexibility, volume and certainly the volume
of storage, it is the largest. Underground storage
reservoirs are normally filled during the summer period
and then they are depleted starting in early to mid
November, depending on weather conditions. They are
drawn down at a relatively constant rate over the
balance of the winter season. As you drawn down on an
underground reservoir you generally lose pressure and

1	the rate of which you can withdraw gas from that	
2	reservoir tends to fall off as the winter proceeds.	
3		
4	However, what the US also has, in areas where there are	
5	fluctuations in demand, either there are temperature	16: 28
6	variation or for power generation, such as the north	
7	eastern United States, then you have additional	
8	storage, normally in the form of LNG facilities, that	
9	allow you to rapidly inject natural gas into the grid	
10	from storage to respond to peak demands on the grid.	16: 29
11	The UK has that attribute also. I reland has none of	
12	these facilities. In my reading of the Governments	
13	mandate here, in terms of its proposed All Island	
14	analysis of storage, is to consider that underground	
15	gas storage and aboveground LNG storage could actually	16: 29
16	perform separate and independent functions in terms of	
17	ensuring the reliability of the grid and strategic	
18	storage for the countries gas requirements.	
19	MR. J. McELLIGOTT: May I just point out here	
20	that it is obvious that	16: 29
21	there is more information needed to be gathered and we	
22	do not have the ability or the resources to do that.	
23	But to make a perfect decision it is up to An Bord	
24	Pleanála to employ the independent experts that can	
25	give that information.	16: 30
26		
27	Secondly, I would like to say that the All Island Gas	
28	Storage Policy Document is due out in the beginning of	

this year. It has already been completed. There was a

29

1	policy document prepared, o	or research document prepared	
2	for an All Island Gas Stora	age Policy, that the	
3	Government would implement	Government would implement between north and south.	
4	Talking about such things a	as Larne storage salt mines,	
5	etc. And we do not know wh	hat the outcome of that	16: 30
6	policy formulation process	is going to be. We will not	
7	know for another few months	s. So, I also find that it	
8	is difficult to make a deci	ision on the planning	
9	application at this time, u	until it is clear what the	
10	Government's policy will be	e.	16: 31
11	I NSPECTOR:	Mr. Power, I think you	
12		al ready covered that, or	
13	somebody on your team alrea	ady covered that, the purpose	
14	of this All Island Policy.		
15	MR. POWER:	Is to cover gas storage.	16: 31
16		That's correct,	
17	Mr. Inspector, we addressed	d that this morning I	
18	bel i eve.		
19	I NSPECTOR:	Mr. Brani gan?	
20	MR. BRANI GAN:	Yes, sir. There is two	16: 31
21	questions which arose and l	I didn't quite get around to	
22	dealing with them. Insofa	r as the Kinsale end is	
23	concerned, I did ask at	least I think I did, or I	
24	ought to have done what	type of ship is actually	
25	delivering gas into the Kir	nsale fields? Because it has	16: 31
26	been said that to deliver (gas in there would be very	
27	difficult and dangerous. \	What type of ship is that,	
28	that is delivering it?		
29	MR. MacINTYRE:	Mr. Inspector, there is no	

1		ship delivering at this	
2	point of time.		
3	MR. BRANI GAN:	Excuse me, I thought I	
4		am getting a bit confused.	
5	l thought it was said t	hat there is gas being put into	16: 32
6	the Kinsale fields. Wh	ether you can bring it out	
7	again, etc. What are t	hey putting it in from?	
8	MR. J. McELLI GOTT:	Via the pipeline.	
9	MR. MacINTYRE:	My understanding is that it	
10		is being put in from the	16: 32
11	pipeline. It certainly	is not being put in from any	
12	shi p.		
13	MR. BRANI GAN:	Oh fair enough. Again, we	
14		understood that it is was a	
15	ship. But that is posi	tive, no ship is put in. That's	16: 32
16	fine. I had to get tha	t clear.	
17			
18	There is one other matt	er, sir. I want to refer to, if	
19	you would give me madam	e for refer to your first name,	
20	Ria Lyden. She said so	mething quite interesting,	16: 32
21	insofar as the plans fo	r the usage of that land is	
22	concerned. She stated	that I don't know who the	
23	devil it was, but a pub	lic body anyway the purposes	
24	of the variation is to:		
25	"To facilitate con	usideration of such a	16: 33
26	development of lan	sideration of such a nd."	
27			
28	And she goes on to say	that the Kerry County Council	
29	Development Plan says:		

1 2 3 4	"Lands have been identi Ballylongford Tarbert a development as a premie port and for major indu developments"	as suitable for er deep water	
5			16: 33
6	In point of fact, one of the	e difficulties that we	
7	foresee is that, in the ever	nt that the land is	
8	available, for one reason or	another, that they don't	
9	get planning permission or a	appoint an alternative, a	
10	very substantial submission,	l made it at international	16: 34
11	conferences twice, I referre	ed to this yesterday, of the	
12	full facilities of a modern	port to be established in	
13	that particular area. That	has the support not just of	
14	Shannon Development, but I v	was at the conference with	
15	the Chief Executive, as they was then, of Shannon		16: 34
16	Foynes and I had to meet mar	ny people. I was in charge	
17	of our own display there and there was a great deal of		
18	interest in it. But the point I am making anyway,		
19	Madame, if you forgive my sa	aying so, is that because	
20	the Kerry County Council, or	whosoever, said such a	16: 34
21	thing, that doesn't necessarily mean for your		
22	applicants. It can be for what we have tried to do all		
23	along, and get a major port established there.		
24	MS. LYDEN:	Mr. Branigan is correct.	
25	MR. BRANI GAN:	l usually am Madame.	16: 35
26		Sorry, I didn't mean to be	
27	rude.		
28	I NSPECTOR:	He's correct, but do you	
29		have any comment on it?	

1	MS. LYDEN: Well, the industrial zoning
2	didn't apply just to this
3	project, the landbank was rezoned for these uses, so,
4	the Shannon LNG project doesn't preclude another port
5	related industry on the landbank, or any other marine 16:3
6	activity that Mr. Branigan might propose for this
7	landbank, the LNG project doesn't preclude that. And
8	the rezoning is in favour of a marine and industrial
9	project on this landbank.
10	INSPECTOR: But could it not be argued 16:3
11	that it squanders an awful
12	lot of the landbank, and that it doesn't fit that well
13	with the wording of the Development Plan?
14	MS. LYDEN: We would we believe that it
15	does fit very well with the 16:3
16	wording of the Development Plan. I can sort of read
17	the it is:
18	"Londo hovo boon i donti fi od oo ovi toblo
19	"Lands have been identified as suitable foras a premier deep water port and major industrial development and
20	employment creation."
21	
22	And our project fits that zoning objective. Kerry
23	County Council, in their submissions to the Board, has
24	agreed with us, that our proposal fits their objectives
25	for the Landbank and their Development Plan objectives 16:3
26	in general.
27	MR. J. McELLIGOTT: Mr. Inspector, that's the
28	argument I was asking
29	Shannon Development yesterday, and why they would not

1	give an answer to the quest	ion I asked about 20 times.	
2	It was we would not be able	to have deep water port	
3	facilities if there is goin	g to be a major employer,	
4	and major industrial develo	pment, if there is going to	
5	be an exclusion zone around	that LNG proposal, LNG	16: 37
6	terminal, which would compl	etely contradict both what	
7	Shannon Development have le	d us to believe over the	
8	years and the County Develo	pment Plan as just declared	
9	by her.		
10	MS. LYDEN:	Mr. Inspector, Dr. Andy	16: 37
11		Franks will give evidence,	
12	presumably when you get to	the safety module tomorrow.	
13	There is no question of an	exclusion zone which would	
14	prevent any other industria	I zoning on that Landbank.	
15	There is no question of tha	t. So, the land, other than	16: 37
16	what the Shannon LNG projec	what the Shannon LNG project will use, will be	
17	available for other port re	lated uses that meet the	
18	objectives of the zoning.		
19	MR. J. McELLI GOTT:	Now, that's why I want to	
20		ask the same question to	16: 38
21	her as I asked Shannon Deve	lopment. If it turns out	
22	that the rest of the Landba	nk excludes other ship	
23	activities in the proximity	to that LNG, jetties etc.,	
24	will that not contradict th	e aims of the County	
25	Development Plan as(INTE	RJECTI ON).	16: 38
26	MS. LYDEN:	Mr. Inspector, it won't	
27		turn out. There is no if	
28	in this case. The evidence	that Dr. Franks will give,	
29	there is no if. The advice	from the Health and Safety	

1	Authority didn't impose an exclusion zone. The
2	question doesn't arise in this case.
3	MR. J. McELLIGOTT: Yeah, because the Health
4	and Safety Authority only
5	deal with land use planning and they do not deal with 16:3
6	marine exclusion zones. And there is no Quantitative
7	Marine Risk Assessment being undertaken. So, while
8	this planning application is going through you do not
9	know what effect it is going to have on shipping. So I
10	therefore ask you the question: if it turns out that 16:3
11	there is an exclusion zone Ria Lyden I am talking
12	to. If it turns out that there is an exclusion zone,
13	Ria, preventing other development of that landbank, is
14	that not contradicting the County Development Plan if
15	that would happen? I am not saying that it is going to 16:3
16	happen, but if it turns out that an exclusion zone of,
17	say, 2 kilometres or 1 kilometre, and if no further
18	industrial development can take place on the landbank,
19	is that not contradicting the County Development Plan,
20	Ri a?
21	MR. MacINTYRE: Mr. Inspector, Shannon
22	Foynes Port Authority is
23	carrying out a Quantitative Risk Assessment and will
24	address that matter. And I believe the Harbour Master
25	will be coming to present his evidence here.
26	MR. J. McELLIGOTT: Okay. So how can you do a
27	planning application and
28	proceed with this planning application if we do not
29	know the consequences of a Marine Risk Assessment? We

1	are entitled under the ELA [Directive to have full	
2	access to environmental info	ormation, environmental	
3	impact, and also under the S	Seveso II Directive, to know	
4	the environmental impacts of	f a proposed development in	
5	siting terminals, in the sit	ting decision, as per	16: 40
6	Article 12 or 13. So, we no	eed to know this information	
7	before we can proceed and th	hen the general public	
8	should have an opportunity	to participate and take part	
9	in that planning decision ar	nd have a right of reply.	
10	MS. LYDEN:	Mr. Inspector, we believe	16: 40
11		that this EIS provides more	
12		than sufficient information	
13	to determine this application	on. The information on both	
14	the marine safety issues and	d the Land based safety	
15	issues and the land use issu	ues relating to development	16: 40
16	are provided in the EIS. Fu	urther information will be	
17	given by various witnesses	to come, particularly in the	
18	safety module. But there is	s more than sufficient	
19	information for me to conclu	ude that the development,	
20	the LNG proposal, is in full	accordance with the	16: 40
21	objectives or that variation	n to the County Development	
22	Plan. I note that the plan	ning authority came to the	
23	same conclusion as ourselves.		
24	MR. J. McELLI GOTT:	Which planning authority?	
25	MS. LYDEN:	Kerry County Council.	16: 41
26	MR. J. McELLIGOTT:	We have had no right of	
27		reply to Kerry County	
28	Council up to now. I want t	to take them up to task	
29	next, because they put in th	heir submission after the	

1	16th November, they put in their submission to An Bord	
2	Pleanála after the closing date for submissions for	
3	everybody else. So, we have only got access to their	
4	submission only a couple of weeks ago. But, it does	
5	not obviate from the obvious reality that there is an 10	6: 41
6	information deficit at the moment. We do not have	
7	access to the information on a Marine Risk Assessment	
8	or on the impact. You cannot preempt the result of a	
9	Marine Risk Assessment before it is even started.	
10	16	6: 41
11	So, you are saying the information is there, the	
12	decision is made. The HSA said that they did not	
13	object under LUP criteria, on 9th January. But after	
14	we made a submission to them, based on input from three	
15	LNG experts, as well as information from Alan Coughlan 16	6: 42
16	of Shannon & Foynes Port Company, that they were	
17	undertaking the Marine Risk Assessment and they wanted	
18	our input. Therefore, the HSA, on the 11th January, we	
19	were informed that they had already made their decision	
20	on the Wednesday, which was posted out to everybody.	6: 42
21	But the following week the HSA made a declaration that	
22	they are now reassessing everything. So, the HSA now	

27 tell us.

MR. FITZGERALD:

23

24

25

26

28

29

With respect, Inspector, it would appear that we are

have admitted in writing, Pat Conneally, that they are

preempt or claim to know more than the HSA are able to

decision of 9th January is no longer valid. You cannot 16:42

going to reassess everything. So that means that

1	straying into matters that	are very definitely within	
2	the next module, which is health and safety. We have		
3	expressly invited represer	expressly invited representatives of both Shannon	
4	Foynes Port Company and th	ne Health and Safety Authority	
5	to address the oral hearin	ng in relation to their 16:43	
6	positions and, perhaps, ir	n that context it might be	
7	more appropriate to leave	the matter over to the next	
8	modul e.		
9	I NSPECTOR:	Did you say you had?	
10	MR. FITZGERALD:	No, no, sorry, that you had 16:43	
11		invited. No, sorry, that	
12	you had invited, sir, repr	esentatives expressly	
13	yesterday and indicated a	number of issues which you	
14	would like them to deal wi	th expressly. And it seems	
15	that Mr. McElligott's ques	that Mr. McElligott's question are now very definitely 16:43	
16	touching upon those areas. It is a suggestion to you		
17	that perhaps they should b	that perhaps they should be left over to the next	
18	module.		
19	MR. J. McELLIGOTT:	Yes, but whatever result	
20		comes out of that we have 16:43	
21	to go back and discuss thi	s planning issue here, about	
22	how it fits in with the cu	how it fits in with the current policy.	
23	I NSPECTOR:	Well, that's an implication	
24		of it and we will take it	
25	at that stage. But you ha	ave made an accusation there 16:43	
26	about the HSA reversing it	s stance and I think it is	
27	only fair that the HSA wil	I be here to answer that.	
28	So, I think it is best deferred until tomorrow.		
29	MR. J. McELLIGOTT:	Okay, I will bring in all	

1		the information then.
2	I NSPECTOR:	Have you any further
3		matters. Mr. Branigan, do
4	you want to speak again?	
5	MR. BRANI GAN:	May I just, before I 16:44
6		started this row. May I
7	say that the situation, as	it say appears to me now, if
8	their application is grante	d and they get the
9	opportunity to erect this to	erminal, then the question
10	of the use of the land in the	he way that we had put it 16:44
11	forward as a modern port, w	ith all the facilities, that
12	wouldn't arise. In the even	nt that their application is
13	refused then we can reintro	duce this concept of a joint
14	modern port, providing all	the facilities that are in
15	demand, including the size	of the ships, extensive 16:45
16	means of dry dock, etc. Bu	t until such time as there
17	is a decision as to what is	going to happen with this
18	application, the question w	on't arise.
19		
20	But just one other point, s	ir. If it is, and I don't 16:45
21	consider it is germane, but	that's a matter for your
22	decision, I can make availal	ble a copy of this proposal
23	for a giant port, which I ha	ave presented at two
24	international conferences.	I don't think it is
25	relevant to this, but if it	is I can provide a copy of 16:45
26	it. Okay?	
27	I NSPECTOR:	Do the applicants have
28		any
29	MR. FITZGERALD:	It is a matter for you,

1		sir. There is no questions
2	arising from that.	
3	MR. BRANI GAN:	Do you want a copy of not?
4		Yes or no? No problem.
5	MR. FITZGERALD:	It is a matter for you, 16:45
6		Sir, whether you decide to
7	accept a copy. Certainly,	if you accept a copy we
8	would be very grateful for	a copy as well. But the
9	matter is entirely in your	hands.
10	I NSPECTOR:	I think it is not 16:46
11		particularly relevant at
12	this stage.	
13	MR. BRANI GAN:	That would be my opinion
14		too. So, it isn't directly
15	relevant at this time. Tha	nk you, sir.
16	I NSPECTOR:	Mr. McElligott?
17	MR. J. McELLIGOTT:	l would also like an
18		opportunity to question the
19	industrial zoning of the la	nd, the site. We have
20	already submitted an appeal	to the European Union, a 16:46
21	petition on the rezoning, w	hich we believe was done
22	illegally, Because it did n	ot undertake an SEA
23	Directive. Ria Lyden said	it was not a matter for
24	Shannon LNG, but I would li	ke to be able to get Kerry
25	County Council's feedback o	n that, either now or later. 16:46
26	I NSPECTOR:	Kerry County Council will
27		be making their own
28	submission and there will b	e an opportunity to question
29	at that stage.	

1	MR. J. McELLI GOTT:	Oh, I thought they said
2		yesterday they weren't
3	making any submission. Are	you making a submission?
4	MR. SHEEHY:	Mr. Inspector, we will deal
5		with that question now, if 16:47
6	you would like. I think it	is appropriate that we deal
7	with it now.	
8	I NSPECTOR:	Okay. But not the
9		question that is before
10	Europe.	16: 47
11	MR. SHEEHY:	No. The lands in question
12		are zoned for industrial
13	development by the 7th varia	ation to the Kerry County
14	Development Plan. It was do	one totally and entirely in
15	accordance with the relevant	and the appropriate 16:47
16	legislation, the Planning Ad	cts and the SEA. There was
17	a full SEA process carried of	out and, as far as I am
18	aware, there is no judicial	review or anything against
19	that decision. As far as Ke	erry County Council are
20	concerned, the land is zoned	d industrial and there is no 16:47
21	question about it.	
22	MR. J. McELLIGOTT:	Yes, there is a question
23		about it.
24	MR. O' NEI LL:	If I could just interrupt
25		on this matter, sir. This 16:47
26	is clearly a legal matter ar	nd I am sure, as
27	Mr. McElligott is aware, hav	ving gone through the
28	various procedures, that und	der the Planning Act any
29	challenge to a decision of t	the planning authority to be

1	made under the Planning Act	, including the adoption of	
2	a Development Plan, must be	challenged within eight	
3	weeks. The variation to th	e Development Plan took	
4	place in March 2007. As I	understand it, no such	
5	challenge has been mounted	and perhaps that's the	16: 48
6	reason why Mr. McElligott h	as tried to short circuit	
7	the Irish jurisdiction and	go straight to Europe. But	
8	as far as you are concerned	and as far as the Board is	
9	concerned, you must treat t	he Development Plan and the	
10	variation as legitimate unt	il you are told by some	16: 48
11	competent authority, some c	court, that it is invalid.	
12	Therefore, I would suggest	that any examination as to	
13	the validity of that variat	ion is not an appropriate	
14	discussion for this forum.		
15	MR. J. McELLIGOTT:	Okay. I will inform the	16: 48
16		Inspector that we have not	
17	yet commenced legal proceed	lings, we have just put in a	
18	complaint. That is not a I	egal procedure under the	
19	court system.		
20	MR. O' NEI LL:	It makes it even more	16: 48
21		difficult then for	
22	Mr. McElligott to raise thi	s issue.	
23	MR. J. McELLI GOTT:	Because I am dealing with	
24		it in the planning	
25	situation. If that was an	invalid planning rezoning	16: 48
26	then it was never there in	the first place.	
27	MR. O' NEI LL:	Sir, you are constrained	
28		under the Planning Act to	
29	have regard to various matt	ers, include the development	

1	sorry. The Board is con	strained to have regard to	
2	various matters, including	the Development Plan, which	
3	includes any variation to t	he Development Plan. Unless	
4	and until the variation is	declared to be invalid you	
5	must have regard to it and	you cannot entertain this. 1	16: 49
6	MR. J. McELLIGOTT:	But then we have also	
7		complained to the Minister	
8	for Environment about this,	what we consider to be an	
9	invalid rezone, that the re	zoning never took place and	
10	we are waiting for a reply.	1	16: 49
11	I NSPECTOR:	Mr. McElligott, the	
12		position at the moment is	
13	that the zoning, as worded,	stands. Now, what I was	
14	getting at is how well does	the proposed development	
15	fit in with the wording of	that zoning. That's what I 1	16: 49
16	would like either the plann	ing authority to address or	
17	that you would address and	ask questions of the	
18	pl anni ng authori ty.		
19	MR. SHEEHY:	I will address that now	
20		Mr. Inspector, if that is 1	16: 49
21	appropri ate.		
22	I NSPECTOR:	Could I have your name	
23		pl ease.	
24	MR. SHEEHY:	Tom Sheehy, Senior	
25		Engineer in the Planning	16: 50
26	Section in Kerry County Council. I think Shannon LNG,		
27	in their submission, Ria Lyden has made it quite clear		
28	that there will be no exclusion zone and that the		
29	evidence that they will sup	ply tomorrow will indicate	

1	that there is no exclusion zone.	
2		
3	Mr. McElligott subsequently raised a point that that	
4	relates to terrestrial QRA assessment. But I would	
5	draw your attention to the wording of the County	16: 50
6	Development Plan which states:	
7	"Landa hava boon identified at	
8	"Lands have been identified at Ballylongford Tarbert as suitable for	
9	Ballylongford Tarbert as suitable for development as a premier deep water port and for major industrial development."	
10	deveropilient.	16: 50
11	So, notwithstanding any issue which may arise tomorro	W
12	regard the construction of additional facilities for	
13	additional deep water facilities, additional industri	al
14	development can take place on that land, which may no	t
15	be dependent on the construction of other port	16: 51
16	facilities. Do you understand the point I am making	
17	Mr. Inspector?	
18	INSPECTOR: Just give it again, pleas	e?
19	MR. SHEEHY: The point I am making is	
20	that there is an assumpti	on 16: 51
21	that any further development subsequent to the LNG	
22	proposal, if it is to proceed, would also require dee	p
23	water facilities and marine facilities. But that	
24	assumption is not valid, in that other industrial	
25	development and employment creating activities can ta	ke 16: 51
26	place on that land without the construction which	
27	are not dependent on deep water port facilities. We	
28	feel that the proposal being brought forward by the	
29	Shannon LNG creates a source of energy, it creates	

I	precedent for the provision	of the infrastructure on	
2	the site, and the point whi	ch has not been raised, and	
3	it becomes relevant, and po	ssibly for pharmaceutical	
4	industries and things like	that, is that there is also	
5	a source of cold arising fr	om this proposal. In that	16: 52
6	cooling, the regasification	of the gassing plant is	
7	also providing a possible s	ource of cold which, again,	
8	in addition to heat, can be	very beneficial to other	
9	industries, including the p	harmaceutical industry.	
10			16: 52
11	So, the point that we would	make is that the LNG	
12	proposal fits very well wit	h the policies and	
13	objectives of the County De	velopment Plan. The LNG	
14	proposal does not preclude	future industrial	
15	development on the site. I	would just like to clarify	16: 52
16	that point.		
17	MR. J. McELLI GOTT:	Can I answer that please?	
18	I NSPECTOR:	Well, can I just ask: Do	
19		you consider the employment	
20	of 50 people on a site of t	his size to be a major	16: 52
21	empl oyer?		
22	MR. SHEEHY:	What I would say,	
23		Mr. Inspector, is that the	
24	land has been there for clo	se to 50 years with nobody	
25	working on it. We see this	as being a catalyst for	16: 53
26	future development. 50 peo	ple in the context of the	
27	length of time that the site	e has been there, you know,	
28	is a significant employer,	in our view, and we feel	
29	that the benefits of the pr	oject overall, it has	

1	potential to act as a major	catalyst for employment in	
2	the future. Lands far in e	xcess of the LNG site have	
3	been zoned in industrial in	the variation. So, there	
4	are additional lands outsid	e of the LNG application	
5	zoned for industrial develo	pment and we feel that by	16: 53
6	the LNG project going ahead	it will put the site up in	
7	light, if you like, to othe	r potential investors and	
8	employers to come to that a	rea. They will be able to	
9	assess, you know, knowing t	hat if a project of this	
10	scale goes ahead, it will g	ive confidence that the	16: 53
11	infrastructure is in place	to facilitate other large	
12	projects. On this basis we	feel that, while the	
13	immediate number is not hug	e, we feel it is very	
14	si gni fi cant.		
15	I NSPECTOR:	Now, three hands up.	16: 54
16		Mr. McElligott first.	
17	MR. McELLI GOTT:	Can I just ask the same	
18		question to Tom Sheehy as I	
19	asked to Shannon Developmen	t and to Ria Lyden. If it	
20	turns out that no other ind	ustrial development could	16: 54
21	take place on the landbank would you be able to give a		
22	viewpoint on how just 50 jo	bs would tie in with what	
22			
23	you just said before this?		
24	you just said before this? MR. O'NEILL:	Sir, I don't want to	
	3		16: 54
24	3	Sir, I don't want to interrupt that question,	16: 54
24 25	MR. O' NEI LL:	Sir, I don't want to interrupt that question, this witness, what	16: 54
242526	MR. O'NEILL: but I think, to be fair to Mr. McElligott has suggested	Sir, I don't want to interrupt that question, this witness, what	16: 54

I	be a rand based excrusion zor	ne.	
2	MR. J. McELLI GOTT:	The Land based is with the	
3	Į.	HSA and the marine based,	
4	it is not the HSA that were s	saying it. He said that	
5	the Development Plans said th	nat the development of the	16: 55
6	land bank for marine for p	oort facilities and major	
7	industrial development. Not	or. Port facilities and	
8	industrial development. So,	if there is either an	
9	exclusion zone on land or on	sea that will stop any	
10	other development would you r	not say that that's	16: 55
11	contradicting all the policy	documents in the county,	
12	in Tarbert, everything?		
13	MR. O' NEI LL:	Sir, again I am sorry to	
14		interrupt. I am conscious	
15	of the hypothetical nature of	f these questions. If	16: 55
16	there is going to be evidence	e to suggest that there	
17	will be some exclusion zone,	either on the land or on	
18	the sea, so be it, but it sho	ould be identified now.	
19	Which of those two exclusion	zones is going to apply?	
20	Or, indeed, if both are going	g to apply that should be	16: 55
21	identified. There is no poir	nt having these	
22	hypothetical questions when a	all the evidence is leading	
23	towards no exclusion zone. I	If there isn't going to be	
24	evidence of an exclusion zone	e well let us identify that	
25	now and, perhaps, move on and	d ask questions which are	16: 56
26	more pertinent to the issues	before you.	
27	MR. J. McELLI GOTT:	I have a letter here from	
28]	Pat Conneally of the HSA on	
29	15th January. He says:		

1	"Door Mr. McCll; woth	
2	"Dear Mr. McElligott,	
3	The Authority"	
4	That's the Health and Safety Authority.	
5		16: 56
6	"has been reviewing its handling of this matter and considers that further	
7	clarification would be beneficial. The authority would like to make it clear	
8	that it is in the process of reviewing the material your group submitted, which will take some time.	
9		
10	As you know, the oral hearing by An Bord Pleanála into this application	16: 56
11	will open on Monday next, January 21st, in Tralee. Inspectors of the Authority	
12	will attend the hearing and make themselves known to the Chairman of the	
13	hearing and indicate their availability to attend and give evidence in relation to the major accident hazard aspects of	
14	the effects of Land use planning."	
15		16: 57
16	It says:	
17	"If the additional information you have	
18	"If the additional information you have submitted alters the view of the	
19	Authority in anyway in relation to its advice from An Bord Pleanála, letter of January 9th, 2008, then the authority	
20	will communicate this to the Board both at the oral hearing and more formally	16: 57
21	by letter."	
22		
23	What this means is that it is also very hypothetical to	
24	assume that there will be no exclusion zones. So, you	
25	have asked questions based on the hypothetical idea	16: 57
26	that there will be no exclusion zones. I am asking you	
27	now to consider the hypothetical idea that there will	
28	be exclusion zones. Which is actually not to	
29	hypothetical given that it is a top tier Seveso II	

1	sites and similar sites can have exclusion zones of up
2	to 2km.
3	INSPECTOR: I think we will wait until
4	tomorrow for the health and
5	safety module on the issue of whether or not there may $_{16}$:
6	be an exclusion zone.
7	MR. J. McELLIGOTT: Okay. But the three
8	groups: Shannon
9	Development, who own the land in trust for the people
10	of North Kerry; the developer, Ria Lyden; and Kerry 16:
11	County Council have all emphasised time and time again
12	that this ties in with the Development Plan to develop
13	the landbank. Now, if it turns out that there is no
14	possibility to develop the rest of the landbank for
15	meaningful industrial development then they have all a 16:
16	lot of questions to answer. Thank you.
17	INSPECTOR: I think it is highly
18	hypothetical at this stage
19	and we will just wait till tomorrow on that issue.
20	Now, two more hands. Mr. Branigan?
21	MR. BRANIGAN: I will be very brief, sir.
22	The land belongs to the
23	State, it is in the care, not the ownership, it is in
24	the care of Shannon Development, and they have
25	specifically said that it should be used for marine
26	development. That's all. They said so. It is in
27	their care, they, presumably, have the authority to do
28	it and it is a Government owned land.
29	INSPECTOR: Ms. Griffin?

1	MS. GRIFFIN:	Just a few points I want	
2		clarified by Mr. Sheehy.	
3	First of all, in the Shannor	n LNG brochures it doesn't	
4	say 50 jobs it says "up to 5	50 jobs". A plant I	
5	researched in the United Sta	ates, in Pasmaquadi,	16: 59
6	advertised up to 60 jobs and	d there was actually 48	
7	j obs.		
8			
9	Secondly, at a Council meeti	ng in November, which the	
10	Kilcolgan Residents Associa	tion attended, a counselor,	16: 59
11	Counselor Beasley I believe,	asked the question to	
12	Mr. Sheehy why the ground wo	ork was being done for four	
13	LNG storage tanks when initi	ally there was only going	
14	to be two LNG storage tanks.	Mr. Sheehy responded that	
15	once the LNG was being store	ed in the first two tanks	16: 59
16	that no heavy construction v	work, blasting, would be	
17	permitted on the rest of the	e Landbank. Now, if you	
18	knew the Landbank Like L kno	ow the Landbank, there is a	
19	lot of rock on the landbank.	So, does that mean that	
20	once those two storage tanks	s are in place with LNG that	17: 00
21	there won't be anymore heavy	y construction on the	
22	I andbank?		
23	MR. SHEEHY:	Mr. Inspector, the point I	
24		was making at the council	
25	meeting, when I was asked th	nat question, was	17: 00
26	reiterating what had been co	ontained in the EIS, that	
27	where it was stated that it	was likely that the ground	
28	works for the four tanks and	d the platform, the	
29	construction platform if you	u like, would be carried out	

1	at the initial stages, to prec	lude the developer in	
2	possibly developing the second	two tanks, having to	
3	blast in proximity to two cons	tructed tanks that might	
4	have gas in them, or even empt	y and which might cause	
5	any structural damage to the ta	anks. Breaking of the	17: 00
6	rock by blasting is probably t	he quickest way to do	
7	that. But there are many othe	r ways of breaking rock.	
8	You can use freezing, chemical	means, rock ripping.	
9	There is a number of different	technologies and methods	
10	available. So, to say that who	en the tanks are	17: 01
11	constructed the answer, in sho	rt, is that it does not	
12	preclude rock removal for futu	re construction projects.	
13	MS. GRIFFIN: Th	ese other methods of	
14	re	moving rock, are they	
15	more expensive than blasting?		17: 01
16	MR. SHEEHY:	am not familiar with the	
17	СО	sts of the modern methods	
18	of technology. Ripping, I imag	gine would be a lot	
19	cheaper. I have seen the chem	ical ones used and it	
20	seems to me to be quite a chea	p process. My	17: 01
21	understanding as well of the re	understanding as well of the rock in the Ballylongford	
22	area is that it's kind of cars	ified (sic.) limestone to	
23	it and that means it is alread	y fractured to a certain	
24	degree. So, I think that will	, again, facilitate the	
25	extraction of rock.		17: 01
26	I NSPECTOR: Co	uld I ask the developers:	
27	Yo	u are opting for	
28	blasting, is that right? Or is	s it just one option.	
29	MS. LYDEN: Mr	. Inspector, Mr. Eoin	

1		Lynch will be giving a	
2	paper on the construction and all these construction		
3	related questions would be k	oest left to him, if you	
4	don't mind.		
5	I NSPECTOR:	Okay. But what I am	2
6		getting at, and we will	
7	leave it now Mr. Lynch, but	what I am getting at is if	
8	you have chosen to go the bl	asting route would it not	
9	be likely that the developer	next door would do the	
10	same? But we will leave it	for Mr. Lynch.	2
11	MS. LYDEN:	Yes, I think we can address	
12		that in Mr. Lynch's	
13	evi dence.		
14	I NSPECTOR:	0kay.	
15	MR. LYNCH:	Noel Lynch, Ballylongford. 17:00	3
16		Just a query I have in	
17	relation to Mr. McElligott h	nere in front of me which I	
18	am just not that clear on.	He refers to the coming on	
19	stream of Milford Haven term	minal and the use of the	
20	Kinsale Head Gas Field as ar	n emergency, as a different 17:0:	3
21	option to building a termina	al on the Landbank. Is that	
22	correct?		
23	MR. J. McELLI GOTT:	What I was saying was that	
24		if there is going to be LNG	
25	needed no. One of the Go	overnment policies is that 17:00	3
26	they want a source, an exter	rnal source of, another	
27	source of gas and if one of	those ideas, as put forward	
28	by Shannon LNG, is that we s	should have another source	
29	of gas, other than the pipel	ines through eastern	

1	Europe, if the LNG is already being shipped to Milford
2	Haven then that means there is no risk from the cutting
3	of the pipelines in eastern Europe, because the ships
4	would already have got as far as Milford Haven and then
5	the gas from Milford Haven, which was LNG sourced, 17:04
6	would go through the existing interconnector. That was
7	my idea there.
8	
9	I am just saying that one of the reasons they give for
10	putting forward the LNG terminal is that Ireland needs 17:04
11	another source of gas, coming through another source
12	other than the pipeline. And this is one possible way
13	to shortcut the pipelines in eastern Europe.
14	MR. LYNCH: Does that mean that you are
15	quite happy with the use as 17:04
16	Milford Haven as an LNG terminal?
17	MR. J. McELLIGOTT: It is not for me to say
18	that. It is just that I am
19	just saying this is another alternative that has to be
20	looked at by the relevant authorities. We do not have 17:04
21	the resources to analyse that in a greater detail.
22	MR. LYNCH: From your point of view, do
23	the people from Milford
24	Haven not have the same safety concerns as you have
25	about one that might be developed in the Shannon 17:05
26	Estuary?
27	MR. J. McELLIGOTT: I can't speak for the
28	people of Milford Haven,
29	but what I am saying is that if it is already there and

1	if it is built and it is completed then that is another		
2	source of LNG.		
3	MR. LYNCH:	But in your way of thinking	
4		should you not be	
5	advocating the closure of Mi	I ford Haven. 17:05	
6	MR. J. McELLI GOTT:	No, like I say, up to know,	
7		for everything else, it is	
8	not really a question of wha	at I think. I just put	
9	forward possible alternative	es and I am asking the	
10	Authority to look at all the	ose alternatives and decide 17:05	
11	if they are going to refuse	planning permission here	
12	that it is not stopping LNG	sourced gas coming into	
13	Ireland, it would be just th	nrough another route.	
14	MR. LYNCH:	Yesterday, on the radio,	
15		you described and LNG ship 17:05	
16	as being the equivalent of f	îve Hiroshima bombs. How	
17	can you advocate the use of	a terminal in Wales with	
18	the same devastating potenti	al?	
19	MR. J. McELLI GOTT:	It doesn't really matter	
20		what I think, I just stated 17:06	
21	facts. That's all.		
22	MR. BRANI GAN:	Just one point, sir, if I	
23		may, and purely for the	
24	record. When my organisation	on decided that we would	
25	favour the Kinsale preference	ce, as it were, it was only 17:06	
26	because it seemed to have su	ıfficient support from the	
27	Department. But I merely wa	ant to say that we do not	
28	want to be constrained and r	restricted in putting	
29	forward any alternative prop	oosals simply because we	

1	chose that one. If late	er on, as I understand the	
2	provisions of the Energ	y Act, 1906, you have the	
3	authority I love the	expression in your absolute	
4	discretion. You have t	he authority. In the event that	
5	there is a question of a	al ternatives you have the	: 07
6	authority to raise the	question later with whosoever is	
7	involved. And I would	like to consider that we have an	
8	alternative, that we wi	II be given the facilities to	
9	put forward any other a	Iternative that is practical and	
10	sensi bl.e. Thank you.	17:	: 07
11	I NSPECTOR:	0kay.	
12	MR. J. McELLIGOTT:	My other point was that	
13		there is already LNG coming	
14	into Ireland, possibly	from the UK, through the Isle of	
15	Grain and Teesside. Tha	at's LNG sourced gas, so it is 17	: 07
16	not only necessarily Mi	I ford Haven. And there are no	
17	tanks there but it is be	eing pumped straight into the	
18	grid system. So we have	e already been indirectly	
19	getting LNG anyway alrea	ady.	
20	I NSPECTOR:	Okay. Mr. Fox?	: 07
21	MR. FOX:	Mr. Inspector, I am just	
22		curious about something.	
23	The standards of safety	in Milford Haven and in the	
24	other place, Dragon LNG	plant, to what standard do they	
25	comply? Is it equal to	or Superior to the Irish	: 08
26	standard that would be	applied by the HSA?	
27	I NSPECTOR:	I think you are addressing	
28		the wrong person on that.	
29	It would be to the rele	vant UK standards and, possibly,	

1	the HSA may be able to say something on that.		
2	MR. FOX: Maybe I could add	lress the	
3	people on my righ	it here,	
4	that some of those experts may be able to off	er an	
5	opinion. I don't know. Again, I too am an o	rdi nary	17: 08
6	man like Johnny so I don't have the resources	. Itis a	
7	simple enough question: What standard? Is i	t equal to	
8	or less than?		
9	MR. O'NEILL: From a legal poin	nt of view,	
10	the Seveso II Dir	ecti ve	17: 08
11	applies to the UK as well and those standards	woul d	
12	then be applied, and those are the basis for	the HSA	
13	investigation and examination.		
14	MR. J. McELLIGOTT: But is it not als	o that if	
15	there are other I	aws in the	17: 09
16	UK from the HSE, The Health and Safety Execut	ive in the	
17	UK, that if we do not have a specific law in	Ireland we	
18	will tend to look at the UK laws and from the	HSE as	
19	precedent and then to other laws. In practic	e is that	
20	what happens?		17: 09
21	MR. O'NEILL: The Directive is	bi ndi ng on	
22	and has been impl	emented,	
23	as I understand it, in the UK. The guideline	s that are	
24	issued from time to time are, of course, reli	ed upon in	
25	the UK, subject to the Directive and I am	getti ng	17: 09
26	into an area of expertise which I do not have	now as	
27	I understand are also regularly applied in th	is	
28	jurisdiction. But I think you will need some	properl y	
29	qualified person to answer that, and I think	that	

1	probably comes in under the next module, so.
2	MR. FOX: Just finally. Is it a
3	reasonable assumption that
4	the safety standards in England have been applied to
5	both of those plans because they are under construction 17:0
6	at the moment?
7	INSPECTOR: I presume it is.
8	MR. O'NEILL: We can answer that
9	specifically in the next
10	module, sir.
11	MR. ROBINSON: Can I just say that in
12	Milford Haven on Land the
13	HSE have initially failed the Exxon plant and by method
14	of putting more valves in they managed to get it past
15	in building more bunds, so that the blast zones didn't 17:
16	effect the town, supposedly. But they then went on to
17	the water and failed it on the water. Now, it wasn't
18	their jurisdiction to go on to the water, it was taken
19	out of their hands by the office of the Deputy Prime
20	Minister, who was John Prescott at the time. It was
21	then handed by John Prescott to Milford Haven Port
22	Authority to do the Risk Assessments for the water.
23	Which they have not done. So, we now have two LNG
24	projects almost ready to go, but they don't have Risk
25	Assessments for a spill on water.
26	
27	Now, what you need to do here is make sure that you
28	have the Risk Assessments for a spill on water for at
29	least 1/5th of the cargo. What we have in Milford

Haven is the spill on the water for one hire down (as heard) from one ship, from ship to jetty. On that hire down there are two isolation valves, one on the jetty, one on the ship. There are emergency closures valves. There are emergency closure valves so if that hard on break, it has a guillotine cut, it will shut down and the pump on the ship will also shut down. So, the likelihood of what you are going to spill is in a ten hire down, going up and down, I would say it is about 10 cubic metres.

17:11

17: 11

17: 12

17: 13

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

27

28

29

10

1

2

3

4

5

6

7

8

9

Now, in America they look at a metre hole in the size of a ship and up to 12 metre hole in the side of a ship They never look at the cascading failure in one tank. of the other tanks once one tank is on fire. shouldn't bad mouth our Port Authority, or Exxon, but it is well known that a pool fire on the side of a ship can spread to 1.9 kilometres. Not the pool itself, but the radiant heat up to five kilowatts per metres squared. To give you an idea on what that means: That 17: 12 would burn you skin to blisters in 30 seconds. Now, that's for a 12 metre hole in the side of one tank. I should point out that our Royal Naval Institute lifeboat is 900 metres from that Exxon ship. That is how bad it can get.

26

We have been to the courts numerous times, it has cost us an absolute fortune, and we are still being turn down on a clause that said we were out of time. What I

	was hearing earlier about o	ut of time I have got a	
2	feeling of déjà vu about that quite honestly. I am not		
3	sure if you were saying that Johnny is out of time.		
4	But if the courts are going	to find this one out of	
5	time as well then there is	definitely something wrong. 17:1	13
6			
7	My advice to the County Cou	ncil here, if it is the	
8	County Council make the dec	ision, is do your own Risk	
9	Assessments. Don't let the	HSE HSA do them and	
10	don't let the companies do	them, because they come to 17:1	13
11	their own conclusions. I t	hink we will hear tomorrow	
12	from Dr. Gerry Havens just	the extent that these things	
13	could impact the local popu	lation.	
14	I NSPECTOR:	Okay, well I think that's	
15		best left until tomorrow. 17:1	14
16	MR. ROBI NSON:	Yes, I do.	
17	I NSPECTOR:	Until we hear Dr. Jerry	
18		Havens.	
19	MR. ROBINSON:		
		These are very serious	
20		These are very serious matters. We have got a	14
20 21	crude oil port there. With	matters. We have got a 17:1	14
		matters. We have got a 17:1 crude oil it is the	14
21	crude oil port there. With environment that suffers if	matters. We have got a 17:1 crude oil it is the	14
21 22	crude oil port there. With environment that suffers if if it spilled SIGTTO say it	matters. We have got a 17:1 crude oil it is the it is spilled. With LNG,	14
212223	crude oil port there. With environment that suffers if if it spilled SIGTTO say it	matters. We have got a 17:1 crude oil it is the it is spilled. With LNG, is people and property that at we are talking about. If	
21222324	crude oil port there. With environment that suffers if if it spilled SIGTTO say it are involved. So that's who	matters. We have got a crude oil it is the it is spilled. With LNG, is people and property that at we are talking about. If fect the environment.	
2122232425	crude oil port there. With environment that suffers if if it spilled SIGTTO say it are involved. So that's whit is spilled it doesn't af	matters. We have got a crude oil it is the it is spilled. With LNG, is people and property that at we are talking about. If fect the environment.	
212223242526	crude oil port there. With environment that suffers if if it spilled SIGTTO say it are involved. So that's whit is spilled it doesn't af I have got quite a bit to s	matters. We have got a crude oil it is the it is spilled. With LNG, is people and property that at we are talking about. If fect the environment.	

1	to ask the applicants on th	neir presentation?	
2	MR. KEARNEY:	In relation to the plans	
3		and policies, I would like	
4	Ms. Lyden to explain the ex	ert from the Southwest	
5	Regional Guidelines. There	e is a paragraph there on	17: 15
6	page 9 of 22. I would like	e Ms. Lyden to read out that	
7	paragraph and tell me exact	ly how that applies to	
8	Shannon LNG and not to the	existing Bord Gáis network.	
9	MS. LYDEN:	Could you give me the	
10		reference again please.	17: 15
11	MR. KEARNEY:	It is page 9 of 22, it is	
12		exert from the Southwest	
13	Regional Guidelines.		
14	MS. LYDEN:	This is a paragraph	
15		begi nni ng "an extensi on",	17: 16
16	is it?		
17	MR. KEARNEY:	Yes.	
18	MS. LYDEN:	"An extension of the gas	
19		network to the Kerry hub",	
20	that is the paragraph you a	re talking about?	17: 16
21	MR. KEARNEY:	Yes. It was written in	
22		2004, and how that applies	
23	to Shannon LNG.		
24	MS. LYDEN:	Okay so, how does this	
25		paragraph apply?	17: 16
26	MR. KEARNEY:	How does that exert that	
27		you have used from the	
28	Southwest Regional Guidelin	nes, how does that apply to	
29	Shannon LNG as a company ar	nd their provision of gas?	

1	Where, in my opinion, it cle	early refers to Bord Gáis's	
2	network.	•	
3	MS. LYDEN:	Well it applies to "the gas	
4		network".	
5	MR. KEARNEY:	Could you read it out 17:	16
6		pl ease.	
7	MS. LYDEN:		
8	"An extension of the ga	as network to the	
9	would help provide an a	aliy Teasible, alternative	
10	energy supply and act a economic development ar	nd its extension	16
11	"An extension of the game Kerry hub, if economical would help provide an action energy supply and action of strategic contracture when place in frastructure when place in the structure when place in the structure when place is the structure when the structure is the structure when the structure when the structure is the structure when the structure when the structure is the structure is the structure when the structure is the structure is the structure when the structure is the structure is the structure is the structure when the structure is	into account the	
12	i nfrastructure when pla being considered. Simi	anning policy is	
13	considering detailed la	ayout of	
14	considering detailed la development at the plar stage to as far as poss the need for relocation transmission infrastruc	sible to avoid	
15	transmission infrastruc	cture."	17
16			
17	MR. KEARNEY:	That clearly refers to Cork	
18		County.	
19	MS. LYDEN:	Cork county?	
20	MR. KEARNEY:	Yes. Well, existing gas 17:	17
21	infrastructure is not in pla	ace in Kerry.	
22	MS. LYDEN:	Well "an extension of the	
23		gas network to Kerry hub".	
24	MR. KEARNEY:	Bear in mind that this was	
25		actually written in 2004 so 17:	17
26	they are probably referring	to the Mallow.	
27	MS. LYDEN:	Well, the guidelines are	
28		looking forward for 16	
29	years so these are planning	gui del i nes whi ch	

1	should(INTERJECTION).	
2	MR. KEARNEY: Exactly, based on t	he Bord
3	Gáis network that w	as in
4	place at the time and no mention of Shannon LNG	
5	MR. O'NEILL: Perhaps the witness	would 17: 17
6	be allowed answer t	he
7	questi on.	
8	MR. KEARNEY: I am just qualifyin	g my
9	questi on.	
10	MR. O'NEILL: Yes, that's quite	17: 17
11	legitimate, but I t	hink the
12	witness should be allowed answer the question a	nd then
13	the question can be qualified if needs be.	
14	MS. LYDEN: The Regional Planni	ng
15	Gui del i nes were pre	pared in 17:18
16	2004, this proposal hadn't been made then. But	the
17	guidelines don't, and can't, under Irish and EU	
18	legislation, only refer to the extension of Boro	d Gáis's
19	network. It seems to me here the emphasis is o	n
20	providing infrastructure to Co. Kerry to improve	e 17: 18
21	economic development in Co. Kerry. So, how the	gas
22	comes, as long as it comes to Tralee and Killari	ney,
23	would seem to be the point on my reading of this	S.
24	MR. KEARNEY: Surely the author o	f the
25	gui delines at the t	i me 17: 18
26	would take into account what is actually existing	ng on
27	the ground. Sorry, just before I finish. It is	s clear
28	as day:	
29		

"The planning authority should take

1	into account the locat	ion of strategic	
2	gas infrastructure when planning policy is being considered. Similarly, when considering detailed layout of development at the planning application		
3	development at the pla stage."	nning application	
4	Stage.		
5	So that, obviously, refers	to a local authority region 17	7: 19
6	that has a gas network in p	l ace.	
7	MS. LYDEN:	But the paragraph is	
8		saying "an extension to the	
9	gri d" .		
10	MR. KEARNEY:	But they are probably	7: 19
11		referring to Mallow into	
12	the Kerry hub, which is Kil	larney and Tralee.	
13	MS. LYDEN:	There is nothing in this to	
14		say that(INTERJECTION)	
15	MR. KEARNEY:	Perhaps we should get 17	7: 19
16		clarification from the	
17	author of this document.		
18	MR. SHEEHY:	Mr. Inspector, may I	
19		comment. Mr. Inspector, we	
20	were consulted during the p	reparation of the Regional 17	7: 19
21	Planning Guidelines and it is a document that we had a		
22	lot of input into, its formulation, and I can confirm		
23	that it was part of Kerry C	ounty Council's submission,	
24	if you like, at the time, i	n discussions with the	
25	author of the document, tha	t the gas network should be 17	7: 19
26	extended into Kerry.		
27			
28	Now, there was no indicatio	n at the time that Shannon	
29	LNG would come on board. B	ut that is not the point	

1	here. What we were saying is we needed gas in Kerry to	
2	promote the economy of the county. In the view of	
3	Kerry County Council, the wording:	
4	" the extension of the mean metucody to	
5	"the extension of the gas network to the Kerry hub"	20
6		
7	Effectively, by the Shannon LNG project going ahead and	
8	the construction of the gas pipeline defines, it is	
9	effectively extending the gas pipe going into Kerry and	
10	making the feasibility of the extension of the gas 17:	20
11	network to Tralee and into the Kerry hub, obviously,	
12	more likely in the future.	
13	MR. KEARNEY: But is that what is	
14	inferred in that document,	
15	the Shannon LNG?	20
16	MR. SHEEHY: No, because they weren't	
17	there at time. But we	
18	didn't specify Mallow from Foynes from anywhere. What	
19	the document was saying was that gas infrastructure was	
20	needed in the county.	21
21	MR. KEARNEY: But do you think, in	
22	your professi onal opi ni on,	
23	that what they are referring to in this document is an	
24	extension of the Mallow Bord Gáis pipeline into Kerry?	
25	It is not too far from Killarney. Killarney is a good 17:	21
26	distance from Ballylongford.	
27	MR. SHEEHY: And tomorrow if somebody	
28	came along and said they	
29	were going to extend the Mallow pipeline to Killarney	

1	this statement would be equa	ally valid. It is not an	
2	either or, or nor is it a bo	oth.	
3	MR. KEARNEY:	I think in the absence of	
4		Shannon LNG technology or	
5	the company being touted at	that time this document	17: 21
6	actually refers to the Bord	Gáis network. I will leave	
7	the interpretation up to the	e Inspector, but that's my	
8	own opinion. I think I will	just leave it at that.	
9	MR. J. McELLI GOTT:	I would like to point out	
10		one other issue that was	17: 21
11	raised by Clare County Counc	cil when they were objecting	
12	to the rezoning of the groun	nds. They said that:	
13	" the proposed rezeni	ng is likely to	
14	"the proposed rezoni have a significant impa development of the regi	act on the future	
15	a direct impact on the	planned	17: 21
16	Guidelines for the Shar	nenen Estuary, and	
17	a direct impact on the objectives for the Midw Guidelines for the Shar in particular the plant and service infrastruct objectives for Zone 5 cindustrial development, construction of a deep will have a major impact	tural development	
18	industrial development,	including the	
19	will have a major impac	ct on both the	
20	will have a major impact visual and ecological a area and potentially or Shannon estuarine envir	the lower	17: 22
21	including the foreshore Clare County Council wo	e or co. crare.	
22	appraisal of any SEA ir which may have been und	nvestigation	
23	respect of the proposed	variation."	
24			
25	So, it was just that Clare C	County Council, just to	17: 22
26	inform the Inspector, that t	the Clare County Council	
27	were not in the least bit ha	арру.	
28	I NSPECTOR:	I am aware of that. We	
29		have been over that, that	

1	is now decide. Unless you	succeed in getting it	
2	reversed. But for the mome	nt the zoning stands.	
3	MR. J. McELLIGOTT:	Oh yeah, I am not talking	
4		about the zoning. But I am	
5	just saying they don't agre	e with their	17: 23
6	interpretation of the Midwe	stern Development Policies	
7	conflicts with Ria Lyden's	interpretation. They don't	
8	think it is positive, this	development, in that sense.	
9	MR. KEARNEY:	Clare County Council are a	
10		local authority in the	17: 23
11	Midwest region. Kerry Coun	ty Council are a local	
12	authority in the Southwest	region. If Clare local	
13	authority say that the prop	osal doesn't accord with the	
14	Midwest Regional Guidelines	then I think we should take	
15	their word over Ms. Lyden o	r Kerry County Council.	17: 23
16	MR. J. McELLIGOTT:	And, also, Kilrush Town	
17		Council say that they agree	
18	with Clare County Council i	n their submission. So,	
19	also, Kilrush Town Council	have serious reservations	
20	about the interpretation of	the regional policies.	17: 23
21	I NSPECTOR:	But the zoning stands.	
22	MR. J. McELLIGOTT:	No, it is not the zoning, I	
23		am just talking about the	
24	whole development as a whole	e.	
25	I NSPECTOR:	0kay.	17: 24
26	MR. SHEEHY:	Excuse me, Mr. Inspector,	
27		if I may comment. I just	
28	want to clarify, in case yo	u are under the impression	

1	on the site. That's not the	e case. Clare County	
2	Council have never expressed	d an unhappiness with the	
3	zoning on the site, just tha	at they wanted to see a copy	
4	of the Strategic Environment	tal Assessment which was	
5	carried out. I am not aware	e of them being unhappy with 17	: 24
6	the zoning of the site.		
7	I NSPECTOR:	I thought their argument	
8		was that no Strategic	
9	Environmental Assessment had	d been carried out.	
10	MR. SHEEHY:	No, their argument was they 17	: 24
11		had not received a copy of	
12	the Strategic Environmental	the wording of their	
13	correspondence said "we woul	d appreciate a copy of the	
14	Strategic Environmental Asse	essment".	
15	MR. KEARNEY:	They were looking for a 17	: 24
16		copy of the Screening	
17	Report and the assessment, t	that they expected to happen	
18	afterwards but which Kerry C	County Council failed to	
19	conduct, in breach of the El	S.	
20	MR. SHEEHY:	That is not true.	: 24
21	Mr. Inspector, we have gone	over this matter. It is	
22	the zoning. The zoning star	nds unless proven otherwise.	
23	But I will just clarify that	Kerry County Council	
24	carried out all the Screening	ng Reports, notified all the	
25	statutory bodies, employed a	a consultant to assess the 17	: 25
26	submissions and a recommenda	ation, the screening report,	
27	was received and signed off	and was on public display	
28	for anybody who wanted to se	ee it. So, I mean, there is	
29	not an issue with Clare Cour	nty Council with regard to	

1	the SEA or to the zoning of	that Land.
2	MR. KEARNEY:	Unfortunately Kerry County
3		council(INTERJECTION)
4	I NSPECTOR:	Just hold on a moment, I
5		just want to clarify this 17:25
6	with Mr. Sheehy. Your Scre	ening Assessment came to the
7	conclusion that a Strategic	Environmental Assessment
8	was not necessary; is that	ri ght?
9	MR. SHEEHY:	The consultants we employed
10		for it came to the 17:25
11	conclusion that a Strategic	Environmental Assessment
12	report was not necessary fo	llowing the screening
13	process as laid down in the	regul ati ons.
14	I NSPECTOR:	And Clare County Council
15		got no further than asking 17:26
16	you for the Strategic Envir	onmental Assessment, which
17	was never carried out.	
18	MR. SHEEHY:	Clare County Council asked
19		us for a copy of the
20	Screening Report.	17: 26
21	I NSPECTOR:	Ri ght. Okay.
22	MR. KEARNEY:	What Kerry County Council
23		failed to include in the
24	Screening Report was the pr	oposed likely use of the
25	lands, which is Shannon LNG	. Now, it clearly states in 17:26
26	the SEA guidelines that you	are supposed to include the
27	proposed likely use of the	lands, and, also, ifitis
28	Seveso II.	
29	MR. SHEEHY:	The proposed use of the

1		lands was for industrial
2	development, Mr. Inspector.	
3	I NSPECTOR:	Hold on a moment, let
4		Mr. Sheehy finish.
5	MR. SHEEHY:	The proposed variation was 17:26
6		for industrial zoning.
7	Mr. Inspector, you know, rea	ally, it is beyond the scope
8	of this hearing to discuss a	and get into the minutia of
9	this matter. But I just war	nted to clarify it because I
10	just thought from your last	comment that you seemed to 17:26
11	be under the impression that	t Clare County Council were
12	not in favour of the industr	rial rezoning of that land.
13	I NSPECTOR:	No, I was under the
14		impression that they felt
15	that a Strategic Environment	tal Assessment was required 17:27
16	and that they wished to see	it. But you are saying no,
17	they wished to see the Scree	ening Assessment.
18	MR. SHEEHY:	Yes, right.
19	I NSPECTOR:	Right, that clarifies that.
20	MR. SHEEHY:	And that is as far as I 17:27
21	want to go with it, Mr. Insp	pector.
22	MR. J. McELLIGOTT:	A further matter. In the
23		present application Clare
24	County Council have also made	de a submission and they
25	have said that in considering	ng facilities of this 17:27
26	nature, that traverse a numb	per of counties, or that
27	traverse one county in order	to serve another, they
28	should consider all the plan	nning policies of that
29	county. So, Clare County Co	ouncil's policies,

1 guidelines and Development Plans must also be taken 2 into account, which she has not included. 3 4 I will give you one example. In Killgisert there is a planning application for an explosives factory. 5 17.27 6 explosives factory is going to take place that might 7 work with the County Clare Development Plan, according 8 to the planning process there, from what I can 9 understand, but that will have an affect on this 10 So, I therefore ask that the Clare County 17:28 11 Council submission be looked at seriously in assessing 12 the planning policy documents, both at a local, county 13 and regional level and intercounty level. 14 I NSPECTOR: Mr. Brani gan? Okay. 15 MR. BRANI GAN: Up to now I have completed 17: 29 16 avoided the question of 17 safety, it doesn't arise at this particular, but I find myself in complete accord what our friend from Milford 18 19 Haven has said and I hope that his advice as to what steps should be taken to ensure that we have 20 17.29 21 difficulties will be taken by the relevant people. 22 We don't have to prove -- and when there is a question of safety arises and I have no problem in dealing with 23 24 it -- we don't have to prove that this is an extremely 25 volatile and dangerous thing to be playing with. 17: 29 26 Forgive me for saying playing with, but the process. 27 That has been established beyond all reasonable doubt 28 on the basis of the very regulations that existed to

try and prevent it. That is the measure of its

29

1	di ffi cul ty.		
2			
3	But insofar as those regula	tions are concerned, we find	
4	that the various operators	have applied each of the	
5	reservations and have succe	eded in holding back or	17: 30
6	preventing difficulties. B	ut, we don't say, and never	
7	will say, that an accident	will happen. But I can't	
8	say that it won't. Thank y	ou, sir.	
9	I NSPECTOR:	Okay, thank you.	
10	MR. ROBI NSON:	Could I just ask the LNG	17: 30
11		companies how much ${\rm CO_2}$ is	
12	produced when they produce	the LNG in the producing	
13	countries? How many tonnes	of LNG are produced for one	
14	tonne of CO ₂ .		
15	MR. SHEARER:	We don't have an exact	17: 30
16		figure, but we spoke to	
17	that point this morning.		
18	MR. ROBI NSON:	What was a ballpark figure?	
19	MR. SHEARER:	We didn't produce a	
20		ballpark figure.	17: 30
21	MR. ROBI NSON:	Would you agree that the	
22		Kayta Exxon liquefaction	
23	plant is producing, and tha	t's the best one in the	
24	world, supposedly, is produ	cing 5 tonnes of LNG for	
25	every one tonne of ${\rm CO_2}$ they	put into the atmosphere?	17: 31
26	Would you also agree that t	he CO ₂ that goes into the	
27	atmosphere in Kayta is not	counted what we burn that	
28	LNG in this country?		
29	MR. SHEARER:	I have no idea where your	

1	figures come from. We	
2	would be happy to take the documentation of those and	
3	look at them and comment on them with the supporting	
4	detail. What we commented on this morning was a Green	
5	Peace report and we pointed out the obvious errors in 1	7: 31
6	that Green Peace report. As far as sorry, the	
7	second point you raised was? Your question was the	
8	quantity of ${\rm CO_2}$ produced.	
9	MR. ROBINSON: When it is burned here do	
10	you take that 1 tonne that 1	7: 31
11	is produced for every 5 tonnes in Kayta, do you take	
12	that into account here in your Kyoto Agreement.	
13	MR. SHEARER: That would be a question	
14	for the Irish government	
15	and the way they measure compliance in Kyoto. But it	7: 32
16	is excuse me, sir, may I finish. But it is my	
17	understanding that the issue of who is going to be	
18	charged with the CO_2 created by the transportation	
19	industry is matter of international debate, not just	
20	for shipping, not just for shipping LNG but for	7: 32
21	shipping any product, for delivering product by road	
22	lorries across Europe and for airline travel. So, the	
23	issue is wide open, it is on the table and I am not	
24	aware that there is any convention that governs it at	
25	this point in time.	7: 32
26	MR. J. McELLIGOTT: It is my understanding that	
27	the Kyoto Protocol is only	
28	liable for the carbon ${\rm CO_2}$ emissions we create in	
29	Ireland. In the spirit of the Kyoto Protocol we should	

1	have considerations for the	CO ₂ emissions we are	
2	creating elsewhere, but we d	do not have to pay the	
3	carbon credits for what they	y are producing outside the	
4	country. Maybe I am wrong.		
5	MR. SHEARER:	What I said this morning,	17: 32
6		too, was that in countries	
7	like Nigeria and Angola and	other places in west	
8	Africa, where significant vo	olumes of natural gas are	
9	flared in conjunction with o	oil production, that gas is	
10	now being recaptured, lique	fied into LNG and shipped	17: 33
11	into the consuming nations.	Those types of analysis	
12	give no credit to the reduc-	tion in gas flaring, which	
13	it is a major source of glob	oal CO ₂ emissions.	
14	MR. ROBI NSON:	Could I ask: You are an	
15		energy company? Will you	17: 33
16	agree you are an energy comp	oany?	
17	MR. SHEARER:	We are most certainly an	
18		energy company.	
19	MR. ROBI NSON:	What percentage of your	
20		production of LNG is	17: 33
21	renewabl e.		
22	MR. SHEARER:	You would have to look, we	
23		have got it in the Annual	
24	Corporate Sustainability Rep	port right there on the	
25	table, I think the details a	are there.	17: 33
26	MR. ROBI NSON:	Do you agree that offshore	
27		here there is ample amount	
28	of absolutely free energy.	Mr. MacIntyre, you have	
29	mentioned the polamis, the	sausage-type machine. Now,	

1	this is an ideal place to bu	uild them and to operate	
2	them. Now, why don't you ir	nvest in something like that	
3	instead of a dirty energy li	ke this. Because this is a	
4	fossil fuel and there has be	een a report, which I think	
5	I have got with me, from the	e University of Carnegie 17:	34
6	Mallon in the United States	saying that LNG is dirtier	
7	than clean coal technology.	That's supposing you can	
8	seek a straight CO ₂ from a c	lean coal power station	
9	underground.		
10	MR. SHEARER:	Okay, that's a series of 17:	34
11		statements there and	
12	questions so let me try and	address those in order. If	
13	the energy is free, I don't	know why you, sir, would	
14	not be willing to go out the	ere and exploit it and sell	
15	it to Ireland at market pric	ces which(INTERJECTION). 17:	34
16	MR. ROBI NSON:	But we don't have the money	
17		to do it.	
18	MR. SHEARER:	Excuse me, sir, I am now	
19		responding to your	
20	question. But I thought it	was free, so you don't need 17:	34
21	any money. And, therefore,	sell to Ireland at a very	
22	vast profit, given that Irel	and is paying some of the	
23	highest electric and energy	prices in Europe. The	
24	second thing, as Mr. MacInty	yre said very clearly, a lot	
25	of this tech nology is unpro	oven and untested. It is 17:	35
26	also intermittent in many ca	ases in its availability.	
27			
28	Ireland is a particularly be	eneficial climate in which	
29	to build windmills. Unfortu	unately, one of the	

1	attributes of windmills is,	as you probably are aware,	
2	is wind doesn't blow all the	e time and the windmills	
3	don't turn all the time. Wh	nen the wind isn't blowing	
4	and the windmills aren't tu	rning we need to keep the	
5	electric grid running with	the lights on and that means	17: 35
6	we have to burn fossil fuel	to backup alternative	
7	energies. Please, sir, lar	m not finished yet.	
8			
9	You raised a third question.	The Carnegie oh, I am	
10	sorry, I am going too quickl	y. The Carnegie Mallon	17: 35
11	report that you referred to,	as you rightly pointed	
12	out, compared the uncontroll	ed emissions of ${\rm CO_2}$ from	
13	natural gas fired power plan	nts with the sequestered	
14	emissions from advanced coal	fired power plants in the	
15	United States. I would note	e in passing that neither	17: 36
16	the advanced coal fired power	er plants, nor the	
17	technology for sequestering	CO ₂ underground yet exists,	
18	let alone has been proven.		
19	I NSPECTOR:	So, no such plant exists?	
20	MR. SHEARER:	No such plant exists	17: 36
21	anywhere in the world that I	am aware of. There are	
22	some elements of some part o	of that energy production	
23	chain that exist in experime	ental phases. That's all I	
24	know.		
25	MR. ROBI NSON:	On your point of the	17: 36
26		windmills, the wind not	
27	blowing, the Dutch have solv	ved that problem. They have	
28	built out at see a huge tank	k, a concrete tank, on the	
29	seabed. They have got a fla	at top to it, where the	

1	windmills are. When the wi	nd is blowing the windmills	
2	are turning and they are pr	oducing power for the Dutch.	
3	Then they pump out the tank	, so you have got an	
4	underground lake, if you se	e what I mean, and then when	
5	there is no wind they let t	he sea water run into the	17: 37
6	underground tank and so you	have an accumulator, if you	
7	like. So you have got 24-h	our production from	
8	windmills.		
9			
10	So why are you intent on us	ing the dirty fossil fuels	17: 37
11	when you could be using a f	ree source of power, and	
12	making a vast profit? Afte	r all, that's what you are	
13	all about.		
14	MR. SHEARER:	Well, sir, we are not just	
15		about making a vast profit,	17: 37
16	but let me respond once aga	in. If it was free lots of	
17	people(INTERJECTION)		
18	MR. ROBI NSON:	Well, a fair profit.	
19	MR. SHEARER:	If this was free technology	
20		most people would be using	17: 37
21	it. Second of all, it is n	ot we who are burning	
22	energy, it is the consumers	in Ireland, in Europe and	
23	the rest of the world who b	urn energy. I am sorry to	
24	say we are simply in the bu	siness of delivering the	
25	energy that the customers w	ant.	17: 37
26	MR. ROBI NSON:	Do you agree climate change	
27		is taking place?	
28	MR. SHEARER:	I am not an expert on	
29		climate change.	

1	MR. ROBI NSON:	Can you see that most
2		people in this room now
3	believe that it is taking pl	ace?
4	MR. SHEARER:	I could believe it is
5		taking place, yes. 17:38
6	MR. ROBI NSON:	Do you think we should do
7		something about it.
8	MR. SHEARER:	And I believe Ireland has
9		one of the most advanced
10	regimes in Europe for doing	something about it and as 17:38
11	part of that the government	has embraced a very
12	progressive policy.	
13	MR. ROBI NSON:	Is your
14		project(INTERJECTION)
15	MR. SHEARER:	Excuse me, sir, I am not 17:38
16		finished speaking. It is a
17	very progressive policy in	the development of
18	al ternative energies and has	s one of the most ambitious
19	targets for renewable energy	y in the western world.
20	That is a third of the energ	gy produced by wind. As 17:38
21	part of the study of that pa	articular thing the Irish
22	grid operator, EirGrid, who	has no vested interest in
23	the process, performed a de-	tailed analysis of the
24	impact of the wind regime in	n Ireland and the targets
25	for wind provided electrici	ty and came to the 17:39
26	conclusion that I reland woul	d need, as a means of
27	solving its reliability requ	uirements, to install
28	significant amounts of ther	mal fired energy, probably
29	quick start gas fired power	plants, to back up the

1	windmills.
2	
3	As for the Dutch technology to which the commenter
4	refers, I am sure if it is that applicable and that
5	efficacious and profitable the Dutch will be over here 17:39
6	very quickly with it to sell to the Irish people and, I
7	am sad to say, they are going to make the profits we
8	will not get.
9	MR. J. McELLIGOTT: Can I raise just one point
10	there. Considering that 17:39
11	this project is going to have to buy carbon credits,
12	and since we do not have a yet declared policy,
13	Government policy on LNG storage, gas storage, we do
14	have Government policies that are being declared daily
15	on the climate change policies and there is a lot of 17:40
16	recent declarations by the Energy Minister and the
17	Environment Minister which seem to put more emphasis on
18	the renewable energy sector and our obligations under
19	Kyoto than there is on gas importation. So, I would
20	ask the Inspector to, when he's making his decision, to $_{17:40}$
21	look at the obligations we have clearly stated on

22

23

24

25

26

27

28

29

17: 40

Now, also, I would like to just put forward the point that in Shannon LNG's application they have clearly stated that their intention is to develop a possible gas power plant, because they even had it marked on the

statements that have been made on gas importation and

renewable energy, as opposed to the very vague

security of supply.

1	maps on their EIS and the	e non-technical summary. If	
2	you build a gas power pla	ant you are going to have to	
3	feed into that gas power	plant for the next 25 years.	
4	So, I am just asking, Ins	spector, to take into account	
5	that if they put in the h	neavy capital investment in a	17: 41
6	fossil fuel burning gas p	power plant then we are tying	
7	ourselves into that gas i	mportation, which would be in	
8	contradiction to our poli	cies of encouraging renewable	
9	energies, for the simple	reason that you are going to	
10	crowd out other probably	less commercially profitable	17: 41
11	renewable energy alternat	tives. Thank you.	
12	MR. POWER:	Mr. Inspector, I would just	
13		like to say that in the	
14	evidence that we presente	ed yesterday the Government	
15	White Paper is very, very	y clear that they support, that	17: 42
16	the Government supports t	the LNG proposal. I should	
17	also add that our energy	Minister, who is represent the $$	
18	Green Party, that is ener	rgy Minister Eamon Ryan, made	
19	the following statement i	n a recent Dáil debate.	
20	"The nlanned develor	oment of a merchant	17: 42
21	LNG storage facility	y at Shannon will	
22	"The planned develop LNG storage facility also have a positive security of gas supp connectivity to the	oly and improve our	
23	connectivity to the	grobar gas market.	
24			
25	MR. J. McELLIGOTT:	Are you saying so that the	17: 42
26		Minister for Energy has	
27	specifically stated he is	s for the Shannon LNG project	
28	in particular?		
29	MR. POWER:	Yes. I have spoken with	

1		the Minister and he has
2	advised or expressed sup	port for the project.
3	MR. J. McELLIGOTT:	But has he said it on the
4		record, that he supports
5	specifically Shannon LNG	's planning application? 17:43
6	MR. POWER:	I think I have just read
7		out what the Minister
8	actually said in the Dái	I. I am quoting what he has
9	sai d:	
10	U.The control of the color	17: 43
11	LNG storage facilit	pment of a merchant y at Shannon will e impact on the
12	securi ty of our gas our connectivi ty to	supply and improve
13	market."	the grobar gas
14		
15	I NSPECTOR:	Do you have the date of 17:43
16		that statement?
17	MR. POWER:	Yes, it was 27th November,
18		2007.
19	I NSPECTOR:	Okay, does that conclude?
20	MR. J. McELLIGOTT:	Sorry, I just want to 17:43
21	confirm. Did he just sa	y about a gas storage facility?
22	I NSPECTOR:	No, he was specific, he
23		said the LNG storage in
24	Shannon.	
25	MR. J. McELLI GOTT:	I need to look at this, can 17:44
26		I revert to that tomorrow?
27	I NSPECTOR:	Okay. Can we conclude at
28		this stage. It is quarter
29	to six so we will break	early tonight. Mr. Fox, you

1	have one last observation o	r question?
2	MR. FOX:	Just in relation to
3		tomorrow. Can you give any
4	time scales? We have jobs	to go to and I hate to miss
5	any of this, it is so enter	taining. I have things to 17:44
6	do as well. I know you are	starting at 10 o'clock, but
7	do you anticipate that you	will be on to the health and
8	safety by 12 o'clock? Afte	r lunch?
9	I NSPECTOR:	Well, I would expect that
10		the health and safety would 17:45
11	take, at least, all day, an	d possibly longer. A lot
12	will depend, I think, on Mr	. McElligott's expert
13	witness, Dr. Havens. But h	e also has two other
14	witnesses. Is that right?	
15	MR. J. McELLI GOTT:	Yes. 17: 45
16	I NSPECTOR:	So, I think it will
17		certainly take tomorrow,
18	and possibly part of the ne	xt day.
19	MR. FOX:	So you will be starting
20		that phase at 10 o'clock 17:45
21	tomorrow morning?	
22	I NSPECTOR:	The health and safety issue
23		will start tomorrow.
24	MR. FOX:	Thank you.
25	I NSPECTOR:	Thank you everybody. 17:45
26		
27	THE HEARING WAS THEN ADJOUR	NED TO WEDNESDAY, 23RD
28	JANUARY 2008 AT 10 A.M.	

\$	124 [1] - 3:12	113:8, 113:9, 114:1,	45:2, 47:3, 63:13,	3
	— 129 [1] - 119:18	126:11, 127:4, 128:9,	85:20, 85:22, 86:1, 137:9, 160:1, 162:17	
\$10.80 [1] - 29:16	13 [2] - 103:23, 201:6	130:15, 132:4,	·	3 [12] - 12:11, 15:12,
\$24 [1] - 9:5	130 [1] - 103:26	143:14, 144:21,	2005-2010 [1] -	66:2, 113:9, 126:12,
ΨΣ- [1] 0.0	14 [4] - 9:24, 99:25,	148:6, 149:11, 151:5,	158:13	126:14, 130:16,
	— 100:28, 127:8	153:17, 156:19,	2005On [1] - 86:1	132:5, 147:28, 149:7,
	14% [2] - 168:25,	158:24, 159:25,	2006 [18] - 16:20,	155:13, 155:22
	169:17	162:19, 200:17	17:3, 26:12, 32:7,	3.1% [1] - 158:17
'draft' [1] - 153:26	1400 [2] - 9:18, 86:6	2-1 [1] - 143:25	40:4, 41:1, 41:6,	
'lt [1] - 148:21	141 [2] - 3:12, 3:14	2-2 [1] - 143:29	110:10, 137:24,	3.5 [2] - 9:6, 106:29
'Lands [1] - 148:16	144 [1] - 86:7	2-6 [1] - 144:4	149:10, 149:11,	30 [8] - 5:15, 9:12,
'oh [1] - 93:13	15 [4] - 13:23, 99:25,	2.2 [1] - 26:5	158:21, 158:25,	104:7, 119:9, 124:27,
'you [1] - 66:15	129:11, 185:27	2.2.2 [1] - 11:3	160:14, 164:9,	129:11, 130:12,
you [1] = 00.10	15% [3] - 26:29,	2.2.4 [1] - 11:3	167:26, 167:29, 169:5	223:21
^	39:23, 72:21	2.2.5 [1] - 11:3	2006/17(30% [1] - 36:14
0	15th [1] - 212:29	2.3 [2] - 109:22,	INTERJECTION [1] -	300 [1] - 192:18
	16 [3] - 153:23,	127:4	62:25	31 [1] - 30:10
0.2% [2] - 167:26,	166:18, 226:28	2.3.2 [1] - 99:9	2007 [14] - 5:26,	365 [1] - 111:19
169:2	16.3 [1] - 103:6	2.3.3 [1] - 101:11	26:18, 30:10, 42:6,	38 [1] - 3:5
0.4% [1] - 167:29	165 [1] - 3:14	2.3.4 [2] - 105:3,	63:3, 147:16, 150:9,	39 [1] - 3:6
0.4 / 0 [1] = 107.29		106:13	150:11, 151:1,	3:30 [1] - 165:17
4	166 [1] - 3:16	2.4 [2] - 112:15,	156:12, 158:27,	3A [1] - 126:14
1	16th [1] - 202:1	128:9	164:8, 207:4, 245:18	3B [1] - 126:14
	17.4 _[1] - 103:4		2007-2013 [2] -	3C [1] - 126:14
1 [8] - 12:13, 99:12,	1734 [1] - 172:7	2.6 [1] - 106:4	156:8, 156:9	66 [i] 126.14
101:7, 101:14, 132:4,	17th [1] - 63:12	20 [11] - 10:4, 15:19,	2008 [6] - 1:16, 4:2,	
143:20, 200:17,	18 [2] - 50:14, 101:18	73:9, 73:11, 98:17,		4
237:10	18% [2] - 168:26,	140:11, 151:8, 184:7,	26:29, 118:25,	
	169:18	188:29, 189:20, 199:1	213:19, 246:28	4 [10] - 3:5, 9:6,
1% [1] - 15:9	18,000 [1] - 9:23	20% [2] - 13:23,	2010 [1] - 28:28	15:16, 29:13, 40:2,
1.5 [1] - 9:21	180,000 [1] - 103:1	177:11	2012 [1] - 28:29	41:9, 66:2, 113:10,
1.6% [1] - 158:14	186,000 [1] - 103:4	200 [1] - 192:23	2013 [1] - 158:15	132:5, 142:19
1.9 [1] - 223:18	188.8 [1] - 147:18	2000 [4] - 6:6, 6:12,	2015 [5] - 14:13,	4.5 [1] - 107:1
1/5th [1] - 222:29	19 [1] - 12:11	81:8, 98:16	15:5, 15:9, 39:13,	4.5.1 [3] - 156:19,
10 [8] - 42:5, 90:4,	1906 [1] - 220:2	2000-2006 [1] -	39:19	
102:27, 170:18,	1921 [1] - 76:17	156:11	2015/16 [1] - 26:25	158:24, 163:27
223:10, 246:6,	1959 [3] - 104:24,	2000s [1] - 15:3	2020 [2] - 13:24,	4.5.2 [1] - 151:5
246:20, 246:28		2001 [1] - 6:3	153:23	4.5.4 [1] - 153:17
10% [3] - 6:9, 39:22,	107:22, 108:2	2002 [8] - 125:10,	205.1 [1] - 148:1	4.5.5 [1] - 159:25
64:27	1970's [1] - 81:4	167:24, 167:28,	21 [2] - 79:11, 168:4	4.6 [1] - 143:14
10-1 [1] - 146:3	1970s [1] - 137:24	168:22, 169:15,	21st [3] - 62:24, 63:2,	4.6.2 [1] - 144:21
10-17 [1] - 146:8	1971 [3] - 6:8, 30:5,	169:16, 169:19,	213:10	4.6.3 [1] - 148:6
10-19 [1] - 146:15	139:11	169:21	22 [3] - 9:17, 225:6,	4.6.4 [1] - 149:11
10-21 [1] - 146:21	1978 [2] - 6:3, 80:27	2002-2020 [2] -	225:11	40% [1] - 27:29
100 [3] - 105:12,	1980 [3] - 12:9, 40:2		22ND [2] - 1:16, 4:1	40,000 [1] - 98:13
189:20, 192:23	1987 [1] - 81:7	151:3, 151:4	• • • •	400 [1] - 74:15
105 [1] - 147:24	1988 [1] - 6:5	2003 [10] - 49:25,	230 [1] - 66:2	405 [1] - 167:25
	1990s [1] - 15:3	86:4, 98:12, 124:26,	23RD [1] - 246:27	406 [1] - 167:26
110 [1] - 192:15	1991 [2] - 168:22,	143:7, 147:6, 153:25,	24-hour [1] - 241:7	44 [1] - 161:3
110kv [2] - 91:10,	169:16	153:26, 153:28,	245 [1] - 3:16	46 [2] - 162:16,
91:18	1992 [1] - 142:6	162:18	25 [5] - 15:19, 40:7,	
113 [1] - 3:8	1996 [1] - 6:11	2003-2009 [3] -	104:5, 119:9, 244:3	162:18
115 [1] - 3:9	1997 [1] - 101:2	143:6, 147:16, 148:14	250 [1] - 150:24	466.53 [1] - 147:18
117 [2] - 3:9, 3:11	1001 [1] - 101.2	2004 [11] - 5:29,	26 [1] - 63:5	48 [1] - 215:6
11th [2] - 184:13,		49:25, 153:17,	261.43 [1] - 147:25	
202:18	2	153:23, 154:22,	265,000 [1] - 140:26	5
12 [11] - 50:4, 50:7,	_		27 [2] - 63:5, 142:4	-
50:14, 71:13, 112:16,	2 [32] - 1:17, 12:13,	162:2, 225:22,	27th [1] - 245:17	E 40.05 400.04
112:22, 112:25,	72:5, 99:9, 101:10,	226:25, 227:16	281 [1] - 150:22	5 _[7] - 42:25, 109:21,
201:6, 223:13,	104:27, 105:2, 106:4,	2005 [16] - 6:19,	2km [1] - 214:2	134:23, 163:28,
223:22, 246:8	· · · · · · · · · · · · · · · · · · ·	12:10, 15:8, 15:14,	4NII [1] - 414.4	230:17, 236:24,
122 [1] - 3:11	106:12, 108:20,	30:23, 39:15, 40:2,		237:11

30:23, 39:15, 40:2,

122 [1] - 3:11

109:22, 112:16,

5-1 [1] - 144:12	8.0 [1] - 52:13	absolutely [5] -	98:11	acts (4) 72:26
5-1 [1] - 144:12 5-2 [1] - 144:17	8.15 _[1] - 32.13	18:22, 58:3, 66:6,	accordingly [1] -	acts [1] - 73:26 Acts [1] - 206:16
5-5 [1] - 148:19	8.5 [1] - 157:21	155:16, 238:28	140:24	actual [3] - 49:27,
5.0 [1] - 42:14	8.8 [1] - 33:11	absorb [1] - 74:9	accords [3] - 150:5,	76:28, 128:5
5.1 [1] - 149:6	800 [1] - 121:27	Abu [1] - 14:27	153:5, 159:1	acute [1] - 12:21
5.2.9 _[1] - 148:14	83 [1] - 148:1	academic [1] - 11:11	account [13] - 13:23,	acutely [1] - 16:16
5.5 [1] - 162:2	00[1] 110.1	_ Accelerate [2] -	22:2, 34:9, 34:10,	Adam [6] - 26:1,
5.7 [1] - 162:1	9	192:9, 192:11	51:13, 154:7, 162:10,	43:12, 96:3, 109:9,
5.9 [2] - 162:1,		- Accelerates [1] -	226:11, 227:26,	110:16, 135:7
162:10		192:21	228:1, 235:2, 237:12,	add [7] - 42:25,
50 [16] - 15:7, 39:14,	9 [3] - 137:10, 225:6,	accept [8] - 9:18,	244:4	65:26, 94:21, 95:13,
40:19, 60:8, 90:1,	225:11	19:7, 88:1, 91:13,	accounts [2] - 32:6,	122:14, 175:19,
90:3, 118:2, 130:12,	9/11 [1] - 51:7	95:8, 138:12, 205:7	40:29	244:17
150:26, 189:20,	90% [1] - 13:5	acceptable [4] -	accumulator [1] -	added [1] - 95:24
210:20, 210:24,	90's [1] - 98:2	30:20, 44:17, 47:4,	241:6	addendum [1] -
210:26, 211:22, 215:4	900 [1] - 223:24	49:8	accurate [1] - 1:22	161:22
50% [2] - 9:13, 74:18	91 [1] - 3:6	accepted [1] - 76:13	accusation [2] -	adding [2] - 21:4,
51 [2] - 162:16,	97 [1] - 3:8	access [42] - 11:28,	31:5, 203:25	58:4
162:18	9th [3] - 202:13,	12:1, 17:28, 25:29,	achieve [6] - 36:11,	addition [5] - 9:22,
52 [2] - 162:16,	202:25, 213:19	58:1, 58:12, 64:1,	94:2, 127:5, 143:11,	20:4, 23:5, 35:11,
162:20		- 64:2, 64:3, 64:4,	157:4, 162:6	210:8
52,000 [1] - 30:9	Α	65:16, 65:23, 67:13,	achieved [1] -	additional [16] -
548 [1] - 167:28		69:5, 83:2, 93:24,	127:21	26:25, 26:27, 34:23,
550 [1] - 167:29	A-A-R-H-U-S [1] -	93:25, 93:27, 93:29,	achievement [1] -	35:4, 61:4, 83:22,
	- 62:18	94:2, 94:7, 94:9, 99:3,	153:22	88:8, 112:8, 123:3,
6	A.M [1] - 246:28	99:21, 100:2, 103:1,	achievements [1] -	152:16, 194:7,
	Aarhus [13] - 62:11,	103:5, 104:20,	156:10	209:12, 209:13,
6 [6] - 39:11, 71:13,	62:18, 62:19, 62:20,	105:14, 105:16,	achieving [1] -	211:4, 213:17
92:29, 104:10, 113:1,	62:22, 62:23, 63:1,	105:20, 127:2, 127:22, 137:18,	127:22	Additional [1] -
32.23, 104.10, 110.1,	00 0 00 44 00 00	121.22, 131.10,	acquired [1] - 6:19	21:28
167·17	63:6, 63:11, 63:22,	140:25 196:29	•	
167:17 6.4.4 (1) - 102:21	63:6, 63:11, 63:22, 63:23, 63:27	140:25, 186:28,	acquiring [1] - 49:6	Additionally [1] -
6.4.4 [1] - 102:21		190:6, 190:8, 201:2,	acquiring [1] - 49:6 acquisition [1] -	Additionally [1] - 103:14
6.4.4 [1] - 102:21 6.5% [1] - 158:18	63:23, 63:27	190:6, 190:8, 201:2, 202:3, 202:7	acquiring [1] - 49:6 acquisition [1] - 99:15	Additionally [1] - 103:14 address [28] - 20:17,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8,	63:23, 63:27 abandoned [2] -	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13,	63:23, 63:27 abandoned [2] - 50:25, 129:25	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] -	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3,	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18,	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16,	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13,	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18,	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] -	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15,	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21,	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19,	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15,	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23,	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] -	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27,	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8,	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16,	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24 7% [1] - 72:23	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16, 69:8, 72:23, 74:17,	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3 accompanied [1] -	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24 action [1] - 1:24	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12 ADDRESSED [4] -
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24 7% [1] - 72:23 70% [1] - 36:16	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16, 69:8, 72:23, 74:17, 75:16, 77:2, 82:9,	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3 accompanied [1] - 147:20	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24 action [1] - 1:24 actions [2] - 158:20,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12 ADDRESSED [4] - 4:18, 117:21, 124:9,
6.4.4[1] - 102:21 6.5%[1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24 7%[1] - 72:23 70%[1] - 36:16 70's[1] - 110:10	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16, 69:8, 72:23, 74:17, 75:16, 77:2, 82:9, 131:11, 159:4,	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3 accompanied [1] - 147:20 accomplished [1] -	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24 actions [2] - 158:20, 164:1	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12 ADDRESSED [4] - 4:18, 117:21, 124:9, 141:22
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24 7% [1] - 72:23 70% [1] - 36:16 70's [1] - 110:10 72.5 [1] - 90:2	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16, 69:8, 72:23, 74:17, 75:16, 77:2, 82:9, 131:11, 159:4, 172:11, 189:15,	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3 accompanied [1] - 147:20 accomplished [1] - 43:7	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24 actions [2] - 158:20, 164:1 active [5] - 5:13,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12 ADDRESSED [4] - 4:18, 117:21, 124:9, 141:22 addressed [17] - 52:27, 112:15, 113:19, 113:25,
6.4.4[1] - 102:21 6.5%[1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24 7%[1] - 72:23 70%[1] - 36:16 70's[1] - 110:10 72.5[1] - 90:2 75%[1] - 14:12	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16, 69:8, 72:23, 74:17, 75:16, 77:2, 82:9, 131:11, 159:4, 172:11, 189:15, 199:2, 202:26,	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3 accompanied [1] - 147:20 accomplished [1] - 43:7 accord [2] - 231:13, 235:18 accordance [8] -	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24 actions [2] - 158:20, 164:1 active [5] - 5:13, 25:6, 37:15, 37:18,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12 ADDRESSED [4] - 4:18, 117:21, 124:9, 141:22 addressed [17] - 52:27, 112:15, 113:19, 113:25, 138:22, 139:2, 139:4,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24 7% [1] - 72:23 70% [1] - 36:16 70's [1] - 110:10 72.5 [1] - 90:2 75% [1] - 14:12 750 [1] - 150:24	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16, 69:8, 72:23, 74:17, 75:16, 77:2, 82:9, 131:11, 159:4, 172:11, 189:15,	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3 accompanied [1] - 147:20 accomplished [1] - 43:7 accord [2] - 231:13, 235:18 accordance [8] - 143:26, 144:14,	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24 actions [2] - 158:20, 164:1 active [5] - 5:13, 25:6, 37:15, 37:18, 65:14	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12 ADDRESSED [4] - 4:18, 117:21, 124:9, 141:22 addressed [17] - 52:27, 112:15, 113:19, 113:25, 138:22, 139:2, 139:4, 141:16, 147:1,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24 7% [1] - 72:23 70% [1] - 36:16 70's [1] - 110:10 72.5 [1] - 90:2 75% [1] - 14:12 750 [1] - 150:24 78 [1] - 49:4	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16, 69:8, 72:23, 74:17, 75:16, 77:2, 82:9, 131:11, 159:4, 172:11, 189:15, 199:2, 202:26, 205:24, 211:8,	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3 accompanied [1] - 147:20 accomplished [1] - 43:7 accord [2] - 231:13, 235:18 accordance [8] - 143:26, 144:14, 148:13, 148:28,	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24 actions [2] - 158:20, 164:1 active [5] - 5:13, 25:6, 37:15, 37:18, 65:14 actively [1] - 183:2 activities [11] - 8:11, 37:19, 81:8, 98:18,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12 ADDRESSED [4] - 4:18, 117:21, 124:9, 141:22 addressed [17] - 52:27, 112:15, 113:19, 113:25, 138:22, 139:2, 139:4, 141:16, 147:1, 149:11, 151:4,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24 7% [1] - 72:23 70% [1] - 36:16 70's [1] - 110:10 72.5 [1] - 90:2 75% [1] - 14:12 750 [1] - 150:24 78 [1] - 49:4 7th [3] - 85:22, 86:1,	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16, 69:8, 72:23, 74:17, 75:16, 77:2, 82:9, 131:11, 159:4, 172:11, 189:15, 199:2, 202:26, 205:24, 211:8, 211:21, 221:1, 221:4	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3 accompanied [1] - 147:20 accomplished [1] - 43:7 accord [2] - 231:13, 235:18 accordance [8] - 143:26, 144:14, 148:13, 148:28, 164:19, 164:20,	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24 actions [2] - 158:20, 164:1 active [5] - 5:13, 25:6, 37:15, 37:18, 65:14 actively [1] - 183:2 activities [11] - 8:11,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12 ADDRESSED [4] - 4:18, 117:21, 124:9, 141:22 addressed [17] - 52:27, 112:15, 113:19, 113:25, 138:22, 139:2, 139:4, 141:16, 147:1, 149:11, 151:4, 160:14, 163:16,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24 7% [1] - 72:23 70% [1] - 36:16 70's [1] - 110:10 72.5 [1] - 90:2 75% [1] - 14:12 750 [1] - 150:24 78 [1] - 49:4	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16, 69:8, 72:23, 74:17, 75:16, 77:2, 82:9, 131:11, 159:4, 172:11, 189:15, 199:2, 202:26, 205:24, 211:8, 211:21, 221:1, 221:4 above" [1] - 63:18	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3 accompanied [1] - 147:20 accomplished [1] - 43:7 accord [2] - 231:13, 235:18 accordance [8] - 143:26, 144:14, 148:13, 148:28, 164:19, 164:20, 201:20, 206:15	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24 action [1] - 1:24 actions [2] - 158:20, 164:1 active [5] - 5:13, 25:6, 37:15, 37:18, 65:14 actively [1] - 183:2 activities [11] - 8:11, 37:19, 81:8, 98:18, 103:11, 103:14, 149:26, 187:3,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12 ADDRESSED [4] - 4:18, 117:21, 124:9, 141:22 addressed [17] - 52:27, 112:15, 113:19, 113:25, 138:22, 139:2, 139:4, 141:16, 147:1, 149:11, 151:4, 160:14, 163:16, 181:19, 190:19,
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24 7% [1] - 72:23 70% [1] - 36:16 70's [1] - 110:10 72.5 [1] - 90:2 75% [1] - 14:12 750 [1] - 150:24 78 [1] - 49:4 7th [3] - 85:22, 86:1, 206:13	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16, 69:8, 72:23, 74:17, 75:16, 77:2, 82:9, 131:11, 159:4, 172:11, 189:15, 199:2, 202:26, 205:24, 211:8, 211:21, 221:1, 221:4 above-named [1] -	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3 accompanied [1] - 147:20 accomplished [1] - 43:7 accord [2] - 231:13, 235:18 accordance [8] - 143:26, 144:14, 148:13, 148:28, 164:19, 164:20, 201:20, 206:15 according [6] -	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24 action [1] - 1:24 actions [2] - 158:20, 164:1 active [5] - 5:13, 25:6, 37:15, 37:18, 65:14 actively [1] - 183:2 activities [11] - 8:11, 37:19, 81:8, 98:18, 103:11, 103:14, 149:26, 187:3, 187:21, 199:23,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12 ADDRESSED [4] - 4:18, 117:21, 124:9, 141:22 addressed [17] - 52:27, 112:15, 113:19, 113:25, 138:22, 139:2, 139:4, 141:16, 147:1, 149:11, 151:4, 160:14, 163:16, 181:19, 190:19, 190:23, 195:17
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24 7% [1] - 72:23 70% [1] - 36:16 70's [1] - 110:10 72.5 [1] - 90:2 75% [1] - 14:12 750 [1] - 150:24 78 [1] - 49:4 7th [3] - 85:22, 86:1,	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16, 69:8, 72:23, 74:17, 75:16, 77:2, 82:9, 131:11, 159:4, 172:11, 189:15, 199:2, 202:26, 205:24, 211:8, 211:21, 221:1, 221:4 above [1] - 63:18 above-named [1] - 1:24	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3 accompanied [1] - 147:20 accomplished [1] - 43:7 accord [2] - 231:13, 235:18 accordance [8] - 143:26, 144:14, 148:13, 148:28, 164:19, 164:20, 201:20, 206:15 according [6] - 77:16, 168:29,	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24 actions [2] - 158:20, 164:1 active [5] - 5:13, 25:6, 37:15, 37:18, 65:14 actively [1] - 183:2 activities [11] - 8:11, 37:19, 81:8, 98:18, 103:11, 103:14, 149:26, 187:3, 187:21, 199:23, 209:25	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12 ADDRESSED [4] - 4:18, 117:21, 124:9, 141:22 addressed [17] - 52:27, 112:15, 113:19, 113:25, 138:22, 139:2, 139:4, 141:16, 147:1, 149:11, 151:4, 160:14, 163:16, 181:19, 190:19, 190:23, 195:17 addresses [1] -
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24 7% [1] - 72:23 70% [1] - 36:16 70's [1] - 110:10 72.5 [1] - 90:2 75% [1] - 14:12 750 [1] - 150:24 78 [1] - 49:4 7th [3] - 85:22, 86:1, 206:13	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16, 69:8, 72:23, 74:17, 75:16, 77:2, 82:9, 131:11, 159:4, 172:11, 189:15, 199:2, 202:26, 205:24, 211:8, 211:21, 221:1, 221:4 above" [1] - 63:18 above-named [1] - 1:24 aboveground [1] -	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3 accompanied [1] - 147:20 accomplished [1] - 43:7 accord [2] - 231:13, 235:18 accordance [8] - 143:26, 144:14, 148:13, 148:28, 164:19, 164:20, 201:20, 206:15 according [6] - 77:16, 168:29, 178:15, 178:16,	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24 action [1] - 1:24 actions [2] - 158:20, 164:1 active [5] - 5:13, 25:6, 37:15, 37:18, 65:14 actively [1] - 183:2 activities [11] - 8:11, 37:19, 81:8, 98:18, 103:11, 103:14, 149:26, 187:3, 187:21, 199:23, 209:25 activity [6] - 103:28,	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12 ADDRESSED [4] - 4:18, 117:21, 124:9, 141:22 addressed [17] - 52:27, 112:15, 113:19, 113:25, 138:22, 139:2, 139:4, 141:16, 147:1, 149:11, 151:4, 160:14, 163:16, 181:19, 190:19, 190:23, 195:17 addresses [1] - 153:18
6.4.4 [1] - 102:21 6.5% [1] - 158:18 60 [6] - 15:20, 39:8, 39:20, 90:4, 98:13, 215:6 600 [4] - 74:18, 107:3, 107:5, 150:22 62 [2] - 40:3, 40:4 63 [1] - 15:17 7 [4] - 29:17, 126:13, 147:17, 161:24 7% [1] - 72:23 70% [1] - 36:16 70's [1] - 110:10 72.5 [1] - 90:2 75% [1] - 14:12 750 [1] - 150:24 78 [1] - 49:4 7th [3] - 85:22, 86:1, 206:13	63:23, 63:27 abandoned [2] - 50:25, 129:25 Abbeyfeale [1] - 121:6 ability [6] - 9:8, 133:26, 184:27, 185:14, 189:13, 194:22 Ability [1] - 157:29 able [30] - 15:21, 18:4, 20:29, 22:19, 40:6, 41:21, 41:23, 42:4, 54:3, 56:27, 60:18, 66:3, 67:16, 69:8, 72:23, 74:17, 75:16, 77:2, 82:9, 131:11, 159:4, 172:11, 189:15, 199:2, 202:26, 205:24, 211:8, 211:21, 221:1, 221:4 above" [1] - 63:18 above-named [1] - 1:24 aboveground [1] -	190:6, 190:8, 201:2, 202:3, 202:7 accessed [1] - 134:2 accessible [1] - 66:5 accident [7] - 44:3, 45:25, 81:2, 126:16, 190:11, 213:13, 236:7 accidents [4] - 30:11, 81:1, 98:15, 131:21 accommodate [5] - 16:10, 100:5, 104:8, 125:18, 129:3 accompanied [1] - 147:20 accomplished [1] - 43:7 accord [2] - 231:13, 235:18 accordance [8] - 143:26, 144:14, 148:13, 148:28, 164:19, 164:20, 201:20, 206:15 according [6] - 77:16, 168:29,	acquiring [1] - 49:6 acquisition [1] - 99:15 acres [7] - 107:3, 107:5, 147:18, 147:25, 148:2, 150:22, 161:3 Act [4] - 206:28, 207:1, 207:28, 220:2 act [10] - 132:7, 153:20, 154:1, 154:5, 163:26, 179:24, 180:26, 211:1, 226:9 acting [1] - 155:24 actions [2] - 158:20, 164:1 active [5] - 5:13, 25:6, 37:15, 37:18, 65:14 actively [1] - 183:2 activities [11] - 8:11, 37:19, 81:8, 98:18, 103:11, 103:14, 149:26, 187:3, 187:21, 199:23, 209:25	Additionally [1] - 103:14 address [28] - 20:17, 25:18, 26:4, 31:1, 36:9, 44:8, 44:10, 45:21, 47:1, 88:16, 89:5, 89:7, 89:21, 101:4, 112:29, 138:27, 155:13, 163:6, 163:11, 192:26, 200:24, 203:5, 208:16, 208:17, 208:19, 217:11, 221:2, 239:12 ADDRESSED [4] - 4:18, 117:21, 124:9, 141:22 addressed [17] - 52:27, 112:15, 113:19, 113:25, 138:22, 139:2, 139:4, 141:16, 147:1, 149:11, 151:4, 160:14, 163:16, 181:19, 190:19, 190:23, 195:17 addresses [1] -

220:27 adds [1] - 45:14 adequate [5] - 32:24, 35:21, 62:5, 158:1, 160:5 adequately [2] - 32:13, 190:23 adhered [1] - 119:6 adjacency [1] - 127:22 adjacent [7] - 39:26, 76:1, 100:11, 105:15,	advisors [1] - 172:16 advisory [1] - 179:25 Advisory [1] - 124:19 advocate [1] - 219:17 advocating [1] - 219:5 affairs [1] - 172:9 affect [6] - 50:2, 63:16, 71:9, 72:12, 224:25, 235:9 affiliate [1] - 53:17	199:24 air [3] - 17:16, 118:16, 155:17 aircraft [1] - 51:12 airline [1] - 237:22 Airport [1] - 161:6 Alan [1] - 202:15 Alberta [1] - 13:10 Algeria [4] - 9:28, 14:9, 14:27, 67:10 Algerian [2] - 66:29, 67:4	37:26 ambiguity [2] - 90:13, 90:27 ambitious [1] - 242:18 amenities [1] - 230:19 amenity [2] - 147:1, 148:3 America [10] - 12:23, 13:13, 46:19, 51:1, 60:6, 65:1, 68:17,	123:27, 171:3, 177:4, 177:14, 179:15, 191:3, 199:1, 203:27, 210:17, 214:16, 216:11, 221:29, 222:8, 227:6, 227:12 answered [3] - 95:11, 119:2, 175:16 anthracite [3] - 76:23, 76:27, 78:5 anti [1] - 22:17 anti-competition [1]
108:11, 108:13, 192:24	affiliates [1] - 8:10 affordable [3] - 64:3,	alia [1] - 63:9 all" [1] - 156:13	79:4, 124:19, 223:12 American [2] - 13:24,	- 22:17 anticipate [1] - 246:7
adjoining [1] - 114:19	64:4, 158:1 affording [2] -	all-ireland [1] - 19:15 all-island [1] - 157:9	74:26 Americans [1] -	anticipated [1] - 129:4
ADJOURNED [1] -	101:17, 103:9	alleviate [1] - 123:7	48:26	anticipates [1] - 20:5
246:27	affords [1] - 7:21	allocated [1] -	amount [5] - 19:11,	anxiety [1] - 21:14
ADJOURNMENT [4]	Africa [1] - 238:8	157:23	171:17, 185:28,	anxious [1] - 94:27
- 114:3, 114:6,	African [1] - 34:11	allow [3] - 67:13,	191:24, 238:27	anyhow [1] - 174:26
165:22, 165:27 adjust [1] - 133:26	AFTER [2] - 114:6,	186:17, 194:9	amounts [2] -	anyway [6] - 90:6,
adjusted [1] - 72:6	165:27 afternoon [3] -	allowed [3] - 38:18, 227:6, 227:12	103:27, 242:28 ample [2] - 103:9,	190:6, 196:23, 197:18, 213:18,
Administration [3] -	114:10, 114:26,	allowing [1] - 134:9	238:27	220:19
5:6, 11:9, 141:28	117:23	allows [2] - 93:7,	analogy [2] - 51:12,	apart [2] - 18:17,
administrative [2] -	afterwards [1] -	185:1	51:22	96:21
52:5, 155:11	232:18	almost [12] - 5:15,	analyse [3] - 51:18,	apologise [2] -
Admiralty [1] - 101:12	age [1] - 156:27	9:18, 13:24, 15:8,	54:16, 218:21 analysis [8] - 34:10,	83:23, 114:24 appeal [1] - 205:20
admitted [1] - 202:23	ageing [1] - 86:4 agencies [2] - 49:5,	16:2, 23:8, 39:15, 45:29, 81:29, 87:11,	82:16, 135:19,	appealed [1] - 45:19
adopted [1] - 150:11	190:21	222:24	138:26, 172:13,	appealing [1] - 30:28
adopting [1] - 18:27	Agency [1] - 11:8	alone [2] - 76:20,	194:14, 238:11,	appeals [1] - 52:6
adoption [5] -	agency [2] - 30:21,	240:18	242:23	appear [3] - 92:23,
138:21, 148:19,	97:27	alongside [5] -	anchored [1] - 134:1	172:3, 202:29
153:24, 182:3, 207:1 advanced [6] -	agents [1] - 100:24	126:26, 128:21, 130:14, 133:24,	anchors [1] - 133:16 AND [1] - 1:8	APPEARANCES [1] - 2:1
33:15, 34:5, 193:21,	aggressively[1] - 14:17	139:22	Andres [1] - 10:1	appeared [1] -
240:14, 240:16, 242:9	ago [11] - 13:25,	alteration [1] - 45:14	Andrew [1] - 139:5	173:13
advantage [2] -	15:19, 42:5, 75:26,	alternative [28] -	ANDREW [1] - 1:15	appellant [2] - 2:30,
72:20, 149:24	118:26, 169:7, 169:9,	4:11, 77:3, 92:16,	Andy [3] - 149:2,	3:31
advantageous [1] - 19:17	169:20, 202:4, 211:27	92:18, 112:14,	163:16, 199:10 Angola [2] - 14:29,	appendices [1] - 126:14
advantages [3] -	Agreb [1] - 9:28 agree [13] - 20:22,	126:20, 128:1, 129:8, 130:27, 135:19,	238:7	appendix [1] -
93:4, 104:18, 129:20	44:22, 60:14, 64:24,	136:11, 138:26,	announced [2] -	143:20
adverse [6] - 22:5,	68:8, 164:23, 231:5,	141:3, 144:29, 153:7,	29:14, 160:19	applicability [1] -
102:3, 129:17, 131:8,	231:17, 236:21,	154:5, 174:7, 190:28,	annual [4] - 9:5,	62:21
132:28, 146:9 adversely [1] -	236:26, 238:16,	190:29, 192:2, 197:9, 218:19, 219:29,	80:17, 158:16, 158:17 Annual [2] - 79:24,	applicable [1] -
103:15	238:26, 241:26 agreed [3] - 105:5,	220:8, 220:9, 226:9,	238:23	243:4 APPLICANT [1] - 2:8
advertised [2] -	131:27, 198:24	240:6, 242:18	annum [2] - 102:28,	Applicants [4] - 4:8,
107:18, 215:6	Agreement [1] -	alternatively [1] -	158:14	38:26, 114:13, 171:19
advice [6] - 173:4,	237:12	93:21	answer [35] - 39:21,	applicants [3] -
174:23, 199:29,	Ahango [2] - 62:5,	alternatives [9] - 4:10, 28:11, 65:28,	47:27, 54:19, 59:19,	197:22, 204:27, 225:1
213:19, 224:7, 235:19 advise [2] - 92:17,	64:18 ahead [4] - 171:14,	4.10, 28.11, 65.26, 66:10, 126:12, 219:9,	61:18, 71:25, 87:2, 90:12, 90:24, 90:26,	APPLICANTS [1] - 166:14
173:17	211:6, 211:10, 229:7	219:10, 220:5, 244:11	115:10, 115:12,	application [43] -
advised [3] - 159:17,	aim [2] - 153:19,	alters [1] - 213:18	115:28, 116:1,	30:29, 31:23, 49:23,
179:22, 245:2	186:16	altogether [1] -	118:27, 120:25,	49:27, 50:1, 50:23,
Advisor [1] - 124:21	aims [4] - 31:15,	174:14	122:17, 122:20, 123:14, 123:17,	51:1, 79:7, 88:11,
advisor [1] - 125:26	185:12, 191:16,	altruistic [2] - 31:12,	120.17, 120.11,	89:18, 89:19, 90:7,

90:22, 91:10, 91:14, 195:21 202:17, 232:4, 232:9, archaeological [1] atmosphere [2] -91:23, 92:4, 95:9, 108:18 233:6, 233:7, 233:11, 236:25, 236:27 arrange [3] - 53:18, 121:2, 140:9, 140:14, archives [1] - 76:17 53:20, 82:13 233:16, 234:15, attach [1] - 119:7 154:9, 159:16, 184:6, 234:17 Ardmore [1] - 106:23 arrangement [1] attached [4] - 73:22, Assessment" [1] -184:10, 184:17, Area [20] - 108:12, 134:14 91:15, 147:20, 161:18 195:9, 200:8, 200:27, 232:14 108:14, 108:15, arrangements [4] attack [2] - 46:18, 200:28, 201:13, assessments [2] -142:29, 143:1, 126:27, 131:11, 46:19 204:8, 204:12, 176:7, 176:8 57:2, 104:16 149:10, 149:12, attempt [3] - 17:8, 204:18, 211:4, Assessments [4] -150:6, 150:9, 150:10, arrivals [1] - 134:10 67:26, 84:11 213:10, 226:13, arrived [1] - 92:8 222:22, 222:25, 150:12, 151:1, attempting [1] -228:3, 234:23, 235:5, 222:28, 224:9 162:18, 163:10, arrives [3] - 133:9, 67:12 235:10, 243:27, 245:5 assets [5] - 9:5. 164:12, 165:3, 133:11, 134:13 attend [3] - 114:25, applications [1] -167:18, 168:4 31:29, 40:28, 149:19, Article [4] - 112:16, 213:11, 213:13 60:8 area [28] - 47:16, 112:22, 112:25, 201:6 151:21 attended [1] - 215:10 applied [12] - 34:15, 54:19, 71:14, 78:18, assignment [1] article [3] - 29:3, attention [3] - 62:10, 60:5, 60:12, 60:15, 86:8, 86:16, 96:7, 63:11, 81:16 80:27 91:7, 209:5 62:14, 121:1, 189:13, 100:6, 104:7, 108:15, articles [2] - 5:16, assignments [1] attracted [1] - 21:21 220:26, 221:12, 109:13, 122:4, 6:14 171:26 attracting [1] -221:27, 222:4, 236:4 122:28, 127:20, assist [1] - 154:18 artificial [1] - 99:28 163:27 applies [4] - 221:11, 135:11, 144:1, Associate [1] attractive [7] - 13:10, Arup [5] - 105:5, 225:7, 225:22, 226:3 144:18, 144:28, 106:3, 141:26, 141:26 16:6, 17:28, 107:27, apply [11] - 31:25, 145:2, 150:7, 159:11, 142:11, 142:13 associated [11] - 8:5, 109:19, 135:27, 59:13, 59:14, 59:28, 164:21, 169:17, 16:19, 27:20, 33:14, AS [11] - 4:1, 4:18, 145:19 60:1, 71:6, 198:2, 197:13, 211:8, 33:17, 34:9, 110:25, 39:1, 97:15, 114:6, attractive" [1] -212:19, 212:20, 216:22, 221:26, 111:9, 111:25, 112:8, 115:6, 117:21, 124:9, 110:4 225:25, 225:28 230:20 129:5 141:22, 165:27, attractiveness [1] applying [4] - 61:25, Areas [3] - 146:17, associates [1] -166:15 21:1 76:2, 90:17, 90:21 146:22, 146:26 109:10 attributable [1] as...(appoint [1] - 197:9 areas [32] - 7:5, INTERJECTION) [1] -Associates [5] -87:13 appraisal [1] -13:17, 13:19, 14:24, 26:2, 110:16, 135:7, 199:25 attribute [3] - 60:23, 230:22 69:5, 99:11, 99:14, 138:1, 160:11 aside [2] - 176:14, 100:25, 194:11 appreciate [3] -99:20, 99:23, 101:9, association [3] -193:1 attributes 121 -82:29, 174:26, 232:13 101:13, 101:16, 78:24, 111:2, 171:26 Askeaton [1] - 155:5 128:7, 240:1 101:17, 101:18, appreciated [1] -Association [8] aspect [5] - 33:10, auctioneers [1] -102:1, 102:10, 127:16 6:13, 20:18, 32:1, 43:21, 51:6, 127:21, 121:6 102:13, 106:17, approach [8] - 18:19, 82:5, 110:19, 113:1, 192:26 audited [1] - 41:5 108:17, 124:22, 18:26, 95:12, 110:12, 168:20, 215:10 aspects [8] - 6:22, Aughinish [2] -127:14, 135:8, 127:20, 132:12, 26:6, 48:27, 51:18, assume [3] - 40:9, 106:7, 106:10 137:26, 151:14 135:17, 144:25, 175:19, 213:24 125:16, 126:10, August [1] - 86:4 approaches [2] -146:9, 149:21, assumes [2] - 33:20, 172:17, 213:13 Australia [6] - 10:5, 151:22, 152:29, 92:18, 110:12 33:23 aspiration [1] -14:26, 15:1, 36:6, 157:10, 174:17, appropriate [12] -Assuming [1] -161:16 178:10, 179:13 194:4, 203:16 5:22, 16:25, 38:18, assertion [3] - 32:2, author [6] - 5:18, argue [2] - 81:11, 47:5, 49:9, 97:8, 113:8, 164:1 assumption [8] -84:29, 85:11, 227:24, 141:17, 203:7, 206:6, 171:24 assess [3] - 145:22, 27:16, 40:21, 40:23, 228:17, 228:25 argued [1] - 198:10 206:15, 207:13, 45:4, 45:5, 209:20, 211:9, 232:25 authored [3] - 5:16, argument [3] -208:21 209:24, 222:3 assessed [1] - 26:16 5:20, 83:9 198:28, 232:7, 232:10 approval [9] - 8:27, assurance [2] assessing [1] authorisation [4] arise [5] - 200:2, 29:24, 30:23, 31:2, 28:12, 37:3 235:11 48:22, 49:2, 50:13 38:3, 50:23, 63:8, 204:12, 204:18, assurances [2] assessment [14] authorised [2] -209:11, 235:17 65:22, 102:16 35:15, 51:24, 61:9, 28:6. 64:22 116:22, 123:8 arises [1] - 235:23 approvals [1] - 22:4 assured [2] - 88:10, 101:8, 104:13, 105:1, authorising [1] arising [7] - 30:15, approved [5] - 45:2, 108:29, 126:16, 50:22 30:25, 44:18, 63:14, 50:12, 50:21, 50:24, assuring [1] - 26:22 128:3, 162:26, authorities [8] -141:16, 205:2, 210:5 160:25 AT [2] - 1:17, 246:28 163:12, 163:23, 21:15, 46:10, 46:22, Arklow [1] - 101:24 approving [1] -209:4, 232:17 Athens [1] - 80:14 51:3, 63:21, 104:22, 30:22 arm [3] - 126:28, Atlantic [8] - 6:10, Assessment [16] -154:6, 218:20 132:20, 170:18 April [1] - 17:3 15:6, 33:27, 39:13, 112:27, 170:17, Authority [14] aquaculture [2] arms [1] - 120:3 54:24, 81:19, 102:29, 200:7. 200:23. 35:13, 35:16, 112:21, 103:27, 108:19 arose [2] - 66:28, 200:29, 202:7, 202:9, 155:27 153:16, 200:1, 200:4,

200-22 202-4 212-4	222-5 227-24 240-4	110:22 110:27	100.0	PCE to 20,05
200:22, 203:4, 213:4, 213:11, 213:18,	232:5, 237:24, 240:1, 240:21	119:23, 119:27, 120:5, 147:19,	108:2 begin [1] - 28:29	BGE [6] - 22:25, 24:7, 24:9, 24:18,
219:10, 222:22,	awful [2] - 78:7,	149:27, 149:28,	beginning [2] -	24:24, 93:20
223:16	198:11	150:2, 150:21,	194:28, 225:15	bible [1] - 178:17
authority [25] -	Azerbaijan [1] - 10:5	160:17, 161:13, 212:6	begins [1] - 108:26	bidding [1] - 14:16
112:21, 140:15,	Azul [1] - 135:18	Bantry [1] - 102:12	behalf [2] - 80:4,	big [3] - 48:1, 68:17,
145:22, 164:2,	Azur[i] - 133.10	Bar [2] - 103:6,	187:10	81:3
164:15, 172:21,	В	103:18	behind [5] - 6:9,	
184:18, 201:22,	D	bar [1] - 103:19	11:23, 59:22, 177:18,	Biggane [3] - 40:24, 41:29, 148:29
201:24, 206:29,		Barcelona [1] -	186:25	bigger [2] - 57:15,
207:11, 208:16,	Bachelor [2] - 5:4,	135:10	beholden [1] - 22:10	68:16
208:18, 213:7,	141:27	barrages [1] - 137:3	Belgium [2] - 11:27,	biggest [2] - 51:4,
213:19, 214:27,	back-up [1] - 36:15	base [1] - 69:10	58:10	51:5
220:3, 220:4, 220:6,	background [4] -	Based [2] - 128:18,	belief [1] - 173:21	billion [11] - 9:5, 9:6,
226:11, 227:29,	5:4, 6:6, 80:19, 98:19	130:12	belong [2] - 75:4,	9:21, 12:11, 15:7,
228:5, 231:10,	backup [1] - 240:6	based [25] - 27:28,	75:7	39:14, 156:8, 157:21,
231:12, 231:13	bad [2] - 223:16,	32:2, 32:26, 34:4,	belongs [1] - 214:22	157:23
Authority [1] -	223:25	39:9, 40:23, 103:25,	below [6] - 23:10,	binding [1] - 221:21
213:2	bag [1] - 103:24	112:23, 115:18,	23:14, 99:21, 103:6,	bit [8] - 4:29, 79:26,
autograph [2] -	balance [2] - 36:18,	125:4, 130:23,	106:3, 143:20	91:21, 170:5, 189:11,
85:10, 85:12	193:28	142:12, 155:21,	beneficial [4] - 25:4,	196:4, 224:26, 230:27
automatic [1] -	balanced [7] - 151:9,	155:27, 160:11,	210:8, 213:6, 239:28	BL [1] - 2:9
126:29	151:26, 151:29,	176:16, 181:1,	benefit [3] - 21:29,	Blair [8] - 59:9,
availability [6] -	152:12, 153:13,	201:14, 202:14,	94:28, 152:26	101:3, 103:16, 112:7,
19:17, 100:22,	156:16, 165:8	211:28, 212:1, 212:2,	benefits [7] - 7:21,	113:20, 123:17,
105:11, 174:6,	Balancing [2] -	212:3, 213:25, 227:2	17:13, 17:14, 23:11,	124:13, 170:15
213:12, 239:26	29:15, 70:14	basic [2] - 127:24,	37:17, 164:4, 210:29	Blair's [1] - 181:26
available [38] -	ballasted [1] -	127:28	Berrow [1] - 163:17	blame [1] - 87:12
17:24, 27:16, 35:8,	128:27	basin [4] - 15:6,	berth [3] - 127:1,	blank [2] - 92:29,
41:4, 41:11, 41:24,	ballasting [1] - 55:7	33:26, 39:13, 54:24	128:21, 140:28	95:7
41:27, 41:28, 61:8,	ballpark [2] - 236:18,	basis [25] - 12:26,	berthed [1] - 126:25	blast [3] - 52:18,
61:22, 80:19, 82:10,	236:20 Ballybunion [3] -	14:21, 17:24, 26:21,	berthing [2] - 127:6,	216:3, 222:15
82:11, 82:28, 83:5, 83:6, 83:12, 83:21,	103:5, 103:18, 119:12	39:13, 53:21, 56:8,	132:7	blasting [6] - 52:19,
83:22, 84:1, 84:22,	Ballylongford [43] -	56:9, 56:12, 69:11,	beside [1] - 78:20	215:16, 216:6,
85:1, 94:16, 99:15,	106:22, 106:29,	70:19, 71:1, 72:7, 72:14, 134:8, 152:26,	best [23] - 18:19,	216:15, 216:28, 217:8
104:10, 108:6,	108:13, 119:14,	159:26, 172:5,	18:24, 31:6, 52:27,	blend [1] - 10:23
108:15, 114:15,	121:11, 121:13,	172:19, 173:8,	58:23, 59:2, 59:7,	blisters [1] - 223:21
132:24, 168:21,	121:25, 121:27,	187:21, 191:13,	59:8, 59:14, 59:28,	blocks [3] - 30:26,
175:1, 178:2, 179:2,	122:1, 142:29,	211:12, 221:12,	59:29, 60:5, 60:11,	30:27, 44:19
182:15, 197:8,	147:19, 150:9,	235:28	60:14, 60:21, 61:13,	blow [1] - 240:2
199:17, 204:22,	150:11, 150:12,	Bay [5] - 102:4,	81:13, 97:6, 171:5, 203:28, 217:3,	blowing [3] - 240:3,
216:10	150:13, 150:21,	102:5, 102:6, 102:12	203.26, 217.3, 224:15, 236:23	240:27, 241:1
avenue [1] - 58:20	151:1, 155:5, 156:4,	bays [3] - 99:18,	better [6] - 55:18,	Blue [3] - 140:10,
average [2] - 26:21,	161:5, 161:12, 165:3,	101:11, 129:14	59:18, 61:18, 113:27,	140:15, 184:6
98:16	167:18, 167:19,	Bear [1] - 226:24	123:29, 156:12	board [9] - 130:8, 133:10, 133:14,
avoid [3] - 26:15,	167:25, 168:4,	beard [1] - 170:9	between [30] - 6:5,	138:3, 138:8, 138:13,
154:9, 226:14	168:13, 168:14,	Beasley [1] - 215:11	6:29, 12:9, 21:20,	178:11, 181:22,
avoidance [1] -	168:16, 168:19,	beautifully [1] -	26:8, 26:10, 34:3,	228:29
163:4	168:23, 169:1, 169:6,	76:18	40:1, 45:26, 46:2,	Board [21] - 5:22,
avoided [2] - 163:6,	169:11, 169:12,	became [2] - 6:1,	46:17, 46:24, 51:22,	35:22, 36:24, 64:25,
235:16	170:1, 170:3, 197:2,	63:11	56:26, 57:8, 73:4,	90:11, 92:2, 109:7,
avoiding [1] - 27:19	209:8, 216:21,	become [2] - 65:22,	73:19, 79:13, 97:9,	112:27, 143:16,
aware [20] - 36:23,	217:15, 229:26	95:5	100:19, 106:22,	149:15, 159:16,
48:8, 54:10, 61:19,	Ballylongford/ Tarbert [2] - 145:2,	becomes [1] - 210:3	126:24, 129:11,	159:17, 160:25,
68:27, 75:23, 82:9,	148:16	beds [1] - 78:14	150:24, 151:10,	161:22, 161:29,
87:5, 97:2, 98:1,	bank [17] - 77:19,	BEFORE [1] - 1:14	153:20, 161:7,	162:15, 171:20,
135:29, 182:15, 182:21, 206:18,	115:19, 117:27,	beg [2] - 77:13,	168:22, 192:23, 195:3	198:23, 207:8, 208:1,
206:27, 230:28,	118:1, 118:7, 118:14,	180:16	beyond [2] - 234:7,	213:20
,,	. , ,	began [2] - 86:3,	235:27	bodies [5] - 44:25,

40.00 77.04 400.40
48'28 77'21 162'13
48:28, 77:21, 162:13,
232:25
body [3] - 122:10,
177:7, 196:23
bollard [1] - 103:26
bolted [1] - 81:23
bombs [2] - 51:16,
219:16
Book [1] - 101:13
book [5] - 5:18, 83:9,
84:25, 84:26, 85:17
booked [1] - 5:20
Bord [52] - 35:3,
35:20, 41:18, 48:23,
55:11, 55:25, 55:26,
56:3, 56:5, 56:11,
56:15, 56:21, 56:29,
57:1, 57:2, 57:3,
57:17, 57:25, 58:2,
58:6, 58:17, 58:19,
58:23, 58:25, 62:3,
75:3, 82:6, 92:24,
96:6, 102:16, 118:19,
119:3, 122:10, 135:6,
157:25, 188:7,
188:14, 188:16,
188:19, 189:12,
100.10, 100.12,
190:21, 194:23,
202:1, 213:10,
213:19, 225:8, 226:1,
227:2, 227:18,
229:24, 230:6
border [1] - 152:28
borders [1] - 67:6
born [1] - 120:16
Boston [5] - 6:7,
00 4 00 00 04 0
30:4, 80:29, 81:9,
30:4, 80:29, 81:9,
134:7
134:7
134:7 bother [1] - 115:25
134:7 bother [1] - 115:25 bottom [7] - 21:25,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] -
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] -
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16 boy [1] - 76:22 BOYLE [1] - 1:15
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16 boy [1] - 76:22 BOYLE [1] - 1:15 BP [1] - 42:20
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16 boy [1] - 76:22 BOYLE [1] - 1:15
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16 boy [1] - 76:22 BOYLE [1] - 1:15 BP [1] - 42:20 branded [1] - 9:18
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16 boy [1] - 76:22 BOYLE [1] - 1:15 BP [1] - 42:20 branded [1] - 9:18 BRANDON [1] - 1:17
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16 boy [1] - 76:22 BOYLE [1] - 1:15 BP [1] - 42:20 branded [1] - 9:18 BRANDON [1] - 1:17 Branigan [19] - 76:8,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16 boy [1] - 76:22 BOYLE [1] - 1:15 BP [1] - 42:20 branded [1] - 9:18 BRANDON [1] - 1:17 Branigan [19] - 76:8,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16 boy [1] - 76:22 BOYLE [1] - 1:15 BP [1] - 42:20 branded [1] - 9:18 BRANDON [1] - 1:17 Branigan [19] - 76:8, 78:9, 78:21, 122:19,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16 boy [1] - 76:22 BOYLE [1] - 1:15 BP [1] - 42:20 branded [1] - 9:18 BRANDON [1] - 1:17 Branigan [19] - 76:8, 78:9, 78:21, 122:19, 123:15, 123:23,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16 boy [1] - 76:22 BOYLE [1] - 1:15 BP [1] - 42:20 branded [1] - 9:18 BRANDON [1] - 1:17 Branigan [19] - 76:8, 78:9, 78:21, 122:19, 123:15, 123:23,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16 boy [1] - 76:22 BOYLE [1] - 1:15 BP [1] - 42:20 branded [1] - 9:18 BRANDON [1] - 1:17 Branigan [19] - 76:8, 78:9, 78:21, 122:19, 123:15, 123:23, 175:3, 175:9, 175:20,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16 boy [1] - 76:22 BOYLE [1] - 1:15 BP [1] - 42:20 branded [1] - 9:18 BRANDON [1] - 1:17 Branigan [19] - 76:8, 78:9, 78:21, 122:19, 123:15, 123:23, 175:3, 175:9, 175:20, 180:6, 182:9, 183:26,
134:7 bother [1] - 115:25 bottom [7] - 21:25, 42:5, 86:18, 86:28, 133:16, 166:19, 190:26 bought [1] - 71:18 boundaries [1] - 108:16 Bowdoin [2] - 55:18, 61:16 boy [1] - 76:22 BOYLE [1] - 1:15 BP [1] - 42:20 branded [1] - 9:18 BRANDON [1] - 1:17 Branigan [19] - 76:8, 78:9, 78:21, 122:19, 123:15, 123:23, 175:3, 175:9, 175:20,

197:24, 198:6, 204:3,

214:20, 235:14 BRANIGAN [34] -2:20, 76:9, 78:6, 122:23, 122:26, 123:24, 124:1, 171:9, 171:14, 171:17, 177:8, 177:13, 177:20, 178:7, 179:17, 180:7, 180:16, 180:20, 181:16, 182:4. 182:27, 183:4, 183:18, 183:27, 195:20, 196:3, 196:13, 197:25, 204:5, 205:3, 205:13, 214:21, 219:22, 235:15 Branigan's [3] -78:2, 177:5, 191:28 Brazil [3] - 12:5, 139:17, 139:23 Brazilian [1] - 139:19 breach [1] - 232:19 break [6] - 73:24, 96:15, 113:29, 165:20, 223:6, 245:29 breakdown [3] -84:7, 86:5, 190:11 Breaking [1] - 216:5 breaking [1] - 216:7 breakwaters [1] -99:28 bridge [18] - 30:26, 43:29, 44:6, 44:19, 45:6, 45:9, 45:13, 45:16, 45:17, 45:27, 46:3, 46:15, 46:16, 48:21, 49:13, 49:18, 153:20 bridges [2] - 46:17, 46:24 brief [5] - 109:22, 117:19, 117:27, 120:11, 214:21 briefing [1] - 160:27 Briefly [1] - 89:24 briefly [5] - 8:26, 10:27, 11:14, 39:21, 121:23 Brindisi [1] - 139:12 bring [15] - 22:18, 54:24, 58:5, 58:22, 78:26, 82:22, 88:27, 119:4, 119:25, 120:4, 147:9, 175:14, 183:13, 196:6, 203:29

British [4] - 26:28,

29:18, 42:20, 72:20

broad [2] - 5:14,

broadly [3] - 29:28, 172:5, 185:7 brochures [2] -40:19, 215:3 broke [1] - 26:3 brokerage [1] - 8:20 brokers [1] - 80:10 brought [4] - 35:1, 54:29, 82:17, 209:28 **Brunei** [1] - 36:6 Bríd [1] - 37:23 btu [1] - 29:13 BTU [1] - 29:18 Buckley's [1] -120:19 Buckleys [2] -120:27, 120:28 buffer [1] - 66:18 build [7] - 21:29, 22:8, 24:6, 118:18, 239:1, 239:29, 244:2 building [9] - 9:2, 10:19, 88:5, 93:20, 93:22, 152:2, 156:14, 217:21, 222:15 **builds** [1] - 156:9 built [8] - 9:10, 13:6, 52:22, 88:15, 93:7, 95:22, 219:1, 240:28 bulk [2] - 14:22, 103:1 bunds [1] - 222:15 buoy [12] - 103:18, 130:9, 133:7, 133:15, 133:19, 134:1, 134:3, 134:6, 134:16, 134:17, 192:12 buoys [1] - 134:9 burn [4] - 223:21, 236:27, 240:6, 241:23 burned [3] - 13:1, 33:13, 237:9 burning [6] - 33:14, 33:17, 34:5, 76:23, 241:21, 244:6 Burns [3] - 147:2, 163:6, 163:16 burns [1] - 33:19 Business [3] - 5:6, 5:7, 141:28 business [26] - 6:5, 7:1, 7:25, 29:6, 31:13, 32:15, 32:26, 37:27, 70:25, 72:18, 78:4, 80:8, 80:10, 81:6, 81:20, 119:1, 119:7,

128:16

102:5

Broadhaven [1] -

121:10, 150:29, 167:21, 189:17, 241:24 businesses [6] -6:16, 9:4, 119:10, 120:15, 120:18, 150:15 buy [5] - 53:17, 54:3, 85:9, 243:11 buyer [5] - 68:9, 72:7, 72:8, 73:4, 73:19 buyers [3] - 16:4, 24:22, 26:14 buying [2] - 70:17, 71:28 BY [3] - 2:10, 39:1, 166:14 by-product [1] **by..** [1] - 123:9 C Cabbitte [1] - 80:26 cabling [2] - 91:26,

91:27

13:8

108:12

101:20

6:6, 80:1

Cabot [4] - 6:2, 6:4,

calculate [1] - 71:5

calm [3] - 131:26,

Canada [2] - 12:4,

Candidate [1] -

candidates [1] -

cannot [16] - 22:1,

51:22, 70:10, 70:11,

73:10, 74:9, 88:29,

118:18, 136:6,

136:23, 163:5,

177:18, 202:8,

202:25, 208:5

132:16, 133:1

22:1, 22:3, 26:27,

27:16, 28:18, 29:9,

69:27, 83:1, 127:18,

128:11, 130:10,

133:26, 134:29,

138:11, 140:26,

152:17, 156:29,

capital [4] - 9:7,

24:13, 157:25, 244:5

160:5, 160:12

cake [1] - 55:3

132:1, 133:4

capable [3] - 111:18, capacity [21] - 19:12,

capturing [1] -136:14 carbon [6] - 17:10, 33:25, 53:24, 237:28, 238:3, 243:11 cardinal [1] - 76:14 care [5] - 31:5, 47:24, 214:23 214:24, 214:27 career [1] - 6:14 careful [3] - 79:9, 88:26, 183:19 carefully [2] -170:21, 172:10 cargo [13] - 19:7, 46:3, 66:4, 124:24, 126:24, 127:6, 131:11, 131:18, 131:22, 132:20, 132:22, 133:9, 222:29 cargoes [4] - 15:28, 128:13, 128:22, 134:6 Carl [1] - 163:17 Carnegie [3] - 239:5, 240:9, 240:10 Carolina [1] - 10:10 Carraig [4] - 168:23, 168:24, 169:2, 169:17 carried [13] - 110:7, 126:4, 126:5, 131:19, 131:29, 132:2, 137:21, 206:17, 215:29, 232:5, 232:9, 232:24, 233:17 carrier [1] - 185:2 carriers [3] - 46:5, 103:1, 185:1 carries [1] - 98:13 carrying [3] - 138:3, 181:22, 200:23 carsified [1] - 216:22 cascading [1] -223:14 case [26] - 4:8, 8:29, 11:29, 12:1, 28:16, 42:8, 54:14, 55:1, 58:8, 58:9, 62:24, 65:7, 66:25, 66:28, 68:24, 70:12, 87:22, 88:29, 130:16, 159:27, 167:27 170:3, 199:28, 200:2, 231:28, 232:1 cases [4] - 60:1. 67:9, 128:21, 239:26 cash [1] - 9:5

capitalised [2] -

capitalising [1] -

32:14, 149:25

164:18

120:2, 121:5, 121:7,

catalyst [4] - 154:14, 163:27, 210:25, 211:1 catch [1] - 90:18 catching [1] - 85:26 catchments [1] - 151:17 categories [1] - 128:16 category [2] - 109:7, 133:6	124:16 certify [1] - 1:21 chain [4] - 16:2, 32:17, 33:21, 240:23 chairman [2] - 5:3, 117:25 Chairman [3] - 98:20, 125:29, 213:12 challenge [5] - 58:7, 158:11, 174:22,	216:8, 216:19 Chief [4] - 4:23, 6:1, 6:4, 197:15 Chile [1] - 12:5 china [4] - 68:16 China [4] - 12:6, 14:14, 69:7, 80:14 choices [2] - 152:20, 153:14 choose [1] - 111:29	62:22, 63:1, 215:2 clarifies [1] - 234:19 clarify [8] - 54:12, 114:17, 180:5, 210:15, 231:28, 232:23, 233:5, 234:9 Class [1] - 124:15 clause [1] - 223:29 clean [2] - 239:7, 239:8	co-authored [2] - 5:20, 83:9 co-exist [1] - 31:15 CO2 [17] - 17:8, 33:13, 33:14, 34:2, 34:9, 236:11, 236:14, 236:25, 236:26, 237:8, 237:18, 237:28, 238:1, 238:13, 239:8,
cater [2] - 145:10, 147:7	206:29, 207:5 challenged [1] -	chose [1] - 220:1 chosen [2] - 102:25,	cleaner [1] - 95:3 Clear [1] - 16:21	240:12, 240:17 coal [22] - 12:28,
Catherine [1] - 78:22	207:2	217:8	clear [13] - 30:8,	17:11, 33:17, 34:3,
Catriona [5] - 39:5,	challenges [1] -	CIF [1] - 53:21	58:6, 90:14, 90:26,	34:5, 34:6, 34:8, 34:9,
85:14, 120:13,	136:15	circuit [1] - 207:6	174:16, 181:7, 195:9,	36:20, 76:18, 77:1,
120:27, 121:5	challenging [4] -	circulate [1] - 55:3	196:16, 208:27,	77:8, 77:10, 77:13,
caused [1] - 58:14	10:8, 24:12, 55:29,	circumstance [1] -	213:7, 217:18,	78:14, 103:2, 145:25,
causes [1] - 85:21	140:21	45:22	227:27, 244:15	159:8, 239:7, 239:8,
cavern [9] - 138:3,	Chamber [2] -	circumstances [8] -	clearance [1] -	240:14, 240:16
174:3, 174:8, 174:10,	117:18, 117:26	22:7, 22:22, 23:9,	103:10	Coast [17] - 9:20, 30:24, 31:1, 43:19,
174:11, 175:8, 175:9,	chance [1] - 46:1 change [10] - 22:5,	23:20, 44:28, 45:1,	Clearly [1] - 97:9 clearly [12] - 16:24,	43:27, 44:2, 44:17,
181:22, 185:4 caverns [15] - 174:3,	69:16, 69:21, 70:29,	46:8, 55:17 cited [7] - 33:20,	16:26, 19:5, 62:26,	45:4, 45:14, 45:22,
174:6, 174:9, 182:11,	74:1, 88:12, 157:8,	34:14, 34:28, 35:23,	189:16, 206:26,	45:24, 45:28, 46:11,
182:15, 182:28,	241:26, 241:29,	64:16, 64:18, 112:2	226:1, 226:17,	46:27, 47:3, 49:15,
183:3, 183:8, 183:11,	243:15	cities [2] - 151:16,	233:25, 239:24,	49:17
184:28, 185:2, 186:7,	changed [2] - 64:29,	157:3	243:21, 243:27	coast [9] - 27:24,
190:12, 191:27	115:12	citing [1] - 31:24	Clew [1] - 102:5	28:3, 77:20, 99:19,
Cayman [1] - 7:20	changing [2] - 90:22,	City [2] - 9:16,	climate [6] - 5:1,	101:11, 104:17,
CDP [5] - 162:16,	211:29	154:25	157:8, 239:28,	107:2, 132:10, 192:14
162:18, 162:20	channel [7] - 30:27,	city [4] - 47:10,	241:26, 241:29,	coastal [12] - 99:11, 99:13, 99:20, 99:23,
ceased [1] - 13:13	30:28, 43:29, 44:20,	47:13, 47:19, 47:25	243:15	101:7, 101:9, 101:13,
Celtic [2] - 111:6,	45:8, 100:4, 102:28	Civil [1] - 141:28	clinch [1] - 31:7	101:16, 102:25,
111:22 census [2] - 168:25,	chapter [4] - 126:11, 126:12, 126:13,	civil [2] - 127:19, 142:4	close [16] - 17:29, 46:23, 55:1, 77:20,	106:17, 164:18,
168:29	142:19	claim [6] - 34:18,	82:21, 95:1, 104:19,	172:12
Central [3] - 167:24,	Chapter [1] - 155:13	36:26, 36:28, 87:7,	106:26, 107:28,	coastline [1] - 141:2
168:7, 169:25	character [1] -	87:11, 202:26	108:6, 111:6, 119:17,	Coasts [1] - 13:18
central [1] - 112:21	162:11	claimed [2] - 110:1,	127:2, 129:15,	code [1] - 7:22
centre [1] - 119:27	characterised [3] -	129:20	129:19, 210:24	codes [2] - 31:24,
Centre [3] - 51:11,	17:22, 74:28, 156:15	claims [1] - 113:2	closed [4] - 120:19,	97:1
98:11, 155:26	characteristics [3] -	Clare [30] - 152:7,	120:22, 120:27,	coherent [2] -
centres [3] - 105:29,	33:21, 98:29, 128:5	152:13, 154:25,	120:29	116:27, 143:9 coincide [1] - 169:27
112:13, 113:5	charge [2] - 85:2,	155:22, 161:28,	closely [1] - 125:23	cold [4] - 74:24,
century [1] - 171:28	197:16 charged [2] - 30:21,	162:15, 162:16,	closest [1] - 16:8 closing [2] - 118:11,	186:3, 210:5, 210:7
CER [4] - 65:19,	237:18	162:18, 162:25,	202:2	collaboration [1] -
65:24, 123:8, 185:18 certain [11] - 7:21,	Chart [1] - 103:6	163:10, 230:11, 230:21, 230:21,	closure [4] - 150:14,	157:10
28:7, 58:13, 96:25,	Chartered [2] -	230:25, 230:26,	167:20, 219:5, 223:5	colleague [4] -
109:6, 122:3, 146:12,	124:14, 142:1	231:9, 231:12,	closures [1] - 223:4	101:3, 103:16, 112:7,
172:4, 173:5, 173:22,	chartered [1] - 125:8	231:18, 231:29,	cloud [2] - 170:20,	117:3
216:23	charters [1] - 139:21	232:1, 232:29,	170:23	colleagues [1] -
certainly [13] - 16:2,	Charts [1] - 101:12	233:14, 233:18,	Co [7] - 145:13,	174:28
23:8, 40:12, 52:2,	charts [1] - 77:2	234:11, 234:23,	146:6, 154:25,	College [2] - 126:6,
53:16, 67:26, 68:10,	cheap [1] - 216:20	234:29, 235:7, 235:10	165:11, 227:20,	141:29
76:24, 84:21, 193:22,	cheaper [1] - 216:19	clarification [7] -	227:21, 230:21	collision [2] - 45:26, 46:2
196:11, 238:17,	check [1] - 192:21	48:19, 63:23, 79:18,	CO [2] - 1:8, 1:17	combination [3] -
246:17	checking [1] -	89:3, 94:26, 213:6, 228:16	co [4] - 5:20, 31:15, 83:9, 85:11	18:2, 18:14, 132:28
Certainly [1] - 205:7 Certificate [1] -	127:19	clarified [4] - 39:18,	co-author [1] - 85:11	Combined [1] -
Jerunicate [ii] -	chemical [3] - 53:27,	314111104 [T] 00.10,	30 aaa	

124:15	137:18, 137:27,	119:8, 120:2	29:5, 72:19, 156:29,	conceiving [1] -
combined [3] - 13:2,	138:14, 142:9,	Companies [2] -	158:12	81:20
33:15, 103:25	155:27, 160:21,	32:3, 41:5	competitively [1] -	concept [19] - 23:17,
combined-cycle [1] -	161:3, 175:22,	companies [10] -	157:18	65:12, 65:13, 66:5,
33:15	175:25, 193:1	7:24, 8:12, 11:13,	competitiveness [1]	98:26, 98:27, 110:1,
combines [3] -	commercially [5] -	42:19, 42:22, 71:3,	- 156:24	110:6, 126:3, 128:2,
110:2, 135:26, 136:1	22:6, 50:27, 68:5,	78:1, 78:12, 224:10,	competitors [1] -	132:25, 133:22,
combining [1] -	160:4, 244:10	236:11	72:22	135:25, 136:13,
152:1	Commission [9] -	company [50] - 4:25,	compiled [1] -	140:17, 179:9,
comfortable [1] -	11:11, 16:20, 30:21,	6:2, 6:11, 7:21, 7:28,	143:17	184:21, 186:24,
58:21	45:3, 51:26, 65:21,	8:14, 9:1, 9:4, 9:8,	compiling [1] - 126:9	204:13
comfortably [1] -	67:9, 86:14, 86:20	9:16, 24:3, 24:4, 24:6,	complain [3] - 35:29,	concepts [2] -
161:15	commissioned [1] -	24:19, 31:29, 32:6,	119:24, 119:26	111:16, 137:17
coming [31] - 13:16,	26:12	32:11, 32:12, 40:27,	complained [1] -	concern [16] - 44:8,
21:22, 53:6, 53:29,	commissioning [1] -	40:29, 43:4, 43:6,	208:7	44:9, 44:11, 44:12,
	30:7	55:24, 71:28, 75:8,		44:21, 44:24, 45:27,
54:21, 61:29, 66:14,	commit [2] - 21:3,	78:15, 80:4, 80:8,	complaint [2] -	46:15, 46:16, 51:6,
77:20, 80:21, 85:17,	84:8	80:16, 80:18, 80:19,	86:15, 207:18	52:16, 63:15, 88:2,
89:8, 90:14, 93:12,		80:23, 80:27, 81:7,	complementary [1] -	
95:8, 117:27, 118:1,	commitment [4] -	85:22, 86:1, 86:7,	152:2	145:12, 193:5
118:7, 119:5, 119:10,	31:9, 37:24, 114:25,		complete [2] -	concerned [12] -
119:20, 121:14,	115:15	86:15, 86:21, 87:15,	133:18, 235:18	44:4, 76:25, 88:12,
121:16, 189:3, 190:3,	commitments [4] -	87:17, 125:7, 139:20,	completed [3] -	170:12, 173:20,
191:18, 191:29,	19:19, 63:14, 63:17,	179:12, 225:29,	194:29, 219:1, 235:15	178:17, 195:23,
200:25, 217:18,	157:8	230:5, 238:15,	completely [2] -	196:22, 206:20,
218:11, 219:12,	committed [2] - 15:6,	238:16, 238:18	130:24, 199:6	207:8, 207:9, 236:3
220:13	39:14	Company [7] -	completes [2] -	concerns [16] - 31:1,
commenced [1] -	Committee [11] -	125:23, 160:19,	25:16, 134:12	44:4, 45:21, 47:17,
207:17	62:23, 63:1, 63:23,	161:13, 161:18,	completion [2] -	48:12, 49:16, 50:29,
commences [1] -	122:29, 124:19,	187:11, 202:16, 203:4	100:7, 150:25	51:2, 87:29, 88:14,
134:13	125:9, 138:4, 173:10,	Company's [1] -	complex [4] - 9:26,	91:12, 123:8, 134:29,
comment [23] -	180:19, 181:24,	159:23	10:7, 51:14, 111:10	138:10, 170:13,
19:23, 20:17, 21:11,	181:28	company's [10] -	Complex [1] - 9:29	218:24
22:13, 27:4, 27:23,	committee [1] - 7:2	5:11, 6:14, 10:17,	complexity [1] -	concerted [2] -
28:5, 28:22, 28:25,	Committee's [4] -	32:5, 35:10, 41:12,	49:18	51:28, 52:2
29:25, 33:6, 55:25,	173:18, 180:11,	42:26, 160:23,	compliance [4] -	conclude [5] - 90:28,
77:26, 78:5, 78:29,	180:14, 180:21	160:25, 161:15	60:23, 63:10, 163:9,	96:11, 201:19,
82:28, 85:16, 136:6,	commodities [1] -	comparable [3] -	237:15	245:19, 245:27
197:29, 228:19,	8:24	51:22, 110:10, 137:24	Compliance [3] -	concluded [5] -
231:27, 234:10, 237:3	commodity [9] -	compared [5] -	62:23, 63:1, 63:23	110:8, 137:21, 148:6,
commented [2] -	69:19, 70:2, 70:3,	15:13, 19:27, 19:28,	complicated [1] -	163:22, 164:13
180:12, 237:4	70:5, 70:9, 70:27,	19:29, 240:12	83:28	concludes [3] - 38:1,
commenter [1] -	72:10, 72:18	comparing [2] -	complied [1] - 99:20	113:11, 116:10
243:3	common [2] - 131:6,	51:15, 169:28	comply [3] - 63:28,	conclusion [5] -
comments [10] -	134:14	comparison [2] -		140:23, 201:23,
7:14, 20:15, 24:9,	commonsense [1] -	34:3, 34:7	159:19, 220:25	233:7, 233:11, 242:26
25:1, 35:4, 36:3, 37:9,	183:21	compatible [3] -	complying [1] -	Conclusion [1] -
56:17, 74:13, 149:26	communicate [1] -	54:17, 55:11, 100:27	173:12	108:28
Commerce [2] -	213:20	compelled [1] - 68:3	component [3] -	conclusions [2] -
117:18, 117:26	communication [2] -	compete [3] - 23:3,	10:12, 39:29, 69:3	164:23, 224:11
commercial [38] -	6:28, 84:7	111:28, 159:7	components [1] -	Conclusions [1] -
6:22, 6:27, 9:23,	•		26:3	164:26
	Communications [2]	competence [1] -	composition [2] -	
22:23, 24:24, 24:25,	- 123:1, 137:8	63:15	54:26, 84:18	concrete [2] -
28:2, 28:18, 32:25,	communities [1] -	competent [2] -	compositions [1] -	128:26, 240:28
50:28, 55:25, 57:1,	31:9	112:21, 207:11	54:23	condition [9] - 29:1,
57:2, 57:21, 58:15,	Community [4] -	competition [7] -	comprises [1] -	32:5, 64:26, 65:9,
67:18, 73:19, 73:29,	63:5, 63:15, 63:17,	21:5, 22:17, 57:24,	150:22	65:10, 65:16, 67:28,
77:21, 80:9, 92:26,	63:25	58:5, 58:20, 58:23,	compromised [2] -	91:23, 92:28
110:13, 128:7,	community [8] -	163:25	31:15, 162:10	conditions [39] -
129:27, 131:28,	47:16, 63:8, 63:9,	competitive [7] -	computer [2] -	20:26, 22:5, 49:3,
135:2, 136:5, 136:15,	63:12, 94:27, 119:1,	15:4, 23:13, 24:20,	41:26, 42:10	49:4, 49:8, 49:10,
			-,	

49:11, 65:3, 65:19, 69:10, 70:13, 73:2, 73:16, 73:17, 73:21, 74:20, 91:15, 95:8, 103:19, 111:20, 111:22, 119:7, 129:13, 129:17, 131:9, 131:25, 132:3, 132:5, 132:9, 132:13, 132:16, 132:29, 133:2, 140:19, 141:3, 178:1, 192:7, 193:26 conduct [3] - 171:26,	132:20, 152:18 Connectivity [1] - 155:15 connectivity [3] - 98:5, 244:22, 245:12 connects [1] - 134:13 conscious [1] - 212:14 consequences [1] - 200:29 consequential [2] - 30:6, 30:13	189:24, 193:27 constitute [1] - 44:7 constrained [5] - 72:8, 207:27, 208:1, 219:28 construct [2] - 32:8, 32:21 constructed [8] - 25:23, 111:15, 129:2, 130:22, 139:27, 140:27, 216:3, 216:11 Constructing [1] - 136:24	238:11 consumption [5] - 15:13, 15:17, 39:9, 39:19, 71:5 contact [1] - 180:9 contacted [3] - 41:16, 41:18, 41:29 contain [1] - 76:28 contained [10] - 37:23, 67:2, 127:7, 128:25, 173:9, 173:18, 173:19, 174:9, 180:10, 215:26	contradicted [2] - 59:4, 96:5 contradicting [5] - 36:2, 178:20, 200:14, 200:19, 212:11 contradiction [3] - 173:2, 174:22, 244:8 contravene [1] - 164:16 contribute [5] - 150:16, 150:18, 150:28, 153:12, 159:9 contributes [1] -
172:1, 232:19	consequently [4] -	constructing [1] -	container [2] - 161:4,	33:4
conducted [4] - 48:4,	62:13, 171:29,	52:14	161:6	contributing [1] -
81:10, 86:19, 98:24	172:23, 174:28	construction [38] -	containment [1] -	5:18
conducting [1] -	conservation [5] -	8:1, 16:26, 32:14,	124:24	contribution [2] -
20:12 conference [1] -	34:19, 146:16,	46:4, 49:28, 52:24,	contains [1] - 35:11	151:28, 152:12
197:14	146:22, 146:25, 147:13	52:25, 52:28, 52:29, 61:17, 88:18, 88:19,	contemplated [1] -	contributor [4] -
conferences [3] -	Conservation [2] -	89:11, 100:10, 103:7,	100:5 content [1] - 87:6	4:13, 38:10, 38:11, 96:17
5:17, 197:11, 204:24	108:12, 146:17	108:26, 125:4,	contentious [1] -	contributors [1] -
confidence [1] -	consider [11] - 7:28,	126:13, 128:3, 129:6,	67:10	38:13
211:10	36:24, 64:25, 172:14,	129:25, 130:2, 131:3,	contents [1] - 33:25	control [3] - 188:6,
confident [3] - 18:4,	194:14, 204:21,	139:13, 150:24,	context [15] - 4:10,	189:10, 189:11
20:29, 69:8	208:8, 210:19,	150:25, 209:12,	6:26, 10:28, 11:15,	controlled [4] -
configurations [1] -	213:27, 220:7, 234:28	209:15, 209:26,	24:13, 56:1, 65:26,	31:28, 40:27, 131:25,
128:15	considerably [1] -	215:16, 215:21,	66:6, 76:2, 143:13,	185:16
confined [1] - 38:21	10:7	215:29, 216:12,	156:18, 158:25,	controlling [1] -
confining [1] -	consideration [11] -	217:2, 222:5, 229:8,	163:25, 203:6, 210:26	191:20
174:15	4:10, 8:27, 92:13,	230:18	continent [1] - 13:15	controversy [1] -
confirm [4] - 42:15,	105:27, 108:28,	consult [1] - 172:11	continent's [1] -	52:3
163:29, 228:22, 245:21	148:12, 152:21,	consultancies [1] - 11:13	14:10	convenient [1] -
confirming [1] -	152:23, 159:18, 162:12, 196:25	consultant [1] -	continental [2] -	113:23
125:17	considerations [6] -	232:25	70:4, 186:2 continue [6] - 7:27,	convention [2] - 63:16, 237:24
conflict [1] - 172:3	73:29, 126:11,	consultants [2] -	11:5, 16:3, 94:16,	Convention [12] -
conflicting [1] -	162:28, 163:14,	160:12, 233:9	95:2, 102:17	62:11, 62:19, 62:22,
168:28	193:1, 238:1	consultations [1] -	continued [2] -	62:23, 63:1, 63:6,
conflicts [1] - 231:7	considered [13] -	159:16	150:2, 158:3	63:11, 63:13, 63:14,
confused [2] - 184:3,	44:9, 101:19, 105:18,	consulted [1] -	continuing [4] -	63:22, 63:24, 63:27
196:4	105:20, 105:22,	228:20	13:29, 14:27, 98:18,	Convention's [1] -
confusing [1] - 170:5	109:23, 135:18,	Consulting [4] -	116:3	63:10
confusion [2] -	154:8, 164:15,	105:5, 141:26,	continuous [1] -	conventional [3] -
90:14, 169:24	164:19, 191:8,	142:11, 142:13	130:29	128:21, 139:26,
Congress [1] - 47:23	226:12, 228:2 considered" [1] -	consulting [5] - 8:20, 80:8, 98:21, 142:12,	contract [3] - 73:10,	145:25
Congressman [1] -	112:18	178:26	73:18, 74:6	converted [4] -
47:23 conjunction [2] -	Considering [1] -	consults [1] - 48:27	contractor [1] - 89:11	33:24, 138:2, 139:22, 181:21
149:16, 238:9	243:10	consumed [2] -	contractors [1] -	converter [1] -
Conneally [2] -	considering [4] -	15:21, 39:24	31:10	137:14
202:23, 212:28	154:8, 226:13, 228:2,	consumer [3] -	contracts [11] - 16:1,	converts [1] - 81:24
connected [5] -	234:25	71:11, 72:15, 86:23	20:26, 67:1, 67:3,	cool [1] - 82:1
22:28, 126:28, 129:1,	considers [1] - 213:6	consumers [7] -	67:4, 67:6, 67:13,	cooling [1] - 210:6
133:21, 134:17	consistent [4] -	21:9, 21:14, 21:29,	67:18, 72:2, 73:4,	cooperation [1] -
connecting [1] -	112:16, 127:7,	29:14, 29:18, 70:24,	73:29	188:19
107:2	149:12, 162:7	241:22	contractual [1] -	coordinating [1] -
connection [2] -	consists [1] - 127:18	consuming [7] -	54:27	125:16
93:16, 94:11	constant [4] -	14:24, 15:22, 16:14,	contradict [3] -	coordination [1] -
connections [2] -	134:18, 180:8,	24:23, 68:11, 68:26,	64:13, 199:6, 199:24	6:29

cope [1] - 68:18
copies [6] - 35:11,
83:22, 84:1, 84:22,
84:26, 85:1
copy [20] - 5:21,
35:9, 41:12, 41:24,
42:2, 82:10, 83:20,
161:17, 172:8,
204:22, 204:25,
205:3, 205:7, 205:8,
232:3, 232:11,
232:13, 232:16,
233:19
COPYRIGHT [2] -
2:28, 3:30 core [1] - 121:18
Cork [6] - 102:12, 109:26, 141:29,
151:24, 226:17,
226:19
corners [1] - 60:14
Corporate [1] -
238:24
Corporation [10] -
5:10, 5:26, 6:3, 6:5,
7:9, 7:17, 7:23, 8:14,
80:1, 80:26
corporation [1] -
83:5
Corporation's [1] -
8:17
corporation's [1] -
81:12
Correct [1] - 94:14
correct [26] - 22:16,
27:6, 28:7, 44:3,
44:26, 49:29, 61:26,
69:22, 77:23, 86:24,
90:8, 91:17, 93:19,
94:14, 149:6, 173:14,
173:26, 175:6, 175:9,
176:28, 188:20, 192:28, 195:16,
197:24, 197:28,
217:22
correctly [2] - 46:26,
79:1
correspondence [1]
- 232:13
corresponding [1] -
corresponding [1] -
corresponding [1] - 17:16 Corrib [10] - 19:16, 24:13, 27:25, 27:27,
corresponding [1] - 17:16 Corrib [10] - 19:16,
corresponding [1] - 17:16 Corrib [10] - 19:16, 24:13, 27:25, 27:27,
corresponding [1] - 17:16 Corrib [10] - 19:16, 24:13, 27:25, 27:27, 55:29, 56:26, 57:19,
corresponding [1] - 17:16 Corrib [10] - 19:16, 24:13, 27:25, 27:27, 55:29, 56:26, 57:19, 68:24, 95:21, 189:25 corrosion [1] - 136:25
corresponding [1] - 17:16 Corrib [10] - 19:16, 24:13, 27:25, 27:27, 55:29, 56:26, 57:19, 68:24, 95:21, 189:25 corrosion [1] - 136:25 cost [12] - 8:2, 13:3,
corresponding [1] - 17:16 Corrib [10] - 19:16, 24:13, 27:25, 27:27, 55:29, 56:26, 57:19, 68:24, 95:21, 189:25 corrosion [1] - 136:25

27:10, 27:12, 27:13,

130:1, 162:7, 223:27 176:25, 186:2, Cost [1] - 101:12 costed [2] - 138:18, costly [1] - 136:28 costs [4] - 15:3, 24:22, 129:26, 216:17 Costs [1] - 135:17 Coughlan [1] -202:15 council [1] - 215:24 Council [54] - 5:8, 52:17, 63:12, 91:16, 107:6, 107:11, 107:14, 109:16, 124:15, 143:16, 146:3, 147:16, 148:22, 161:28, 163:20, 163:22, 163:29, 164:13, 165:2, 169:8, 196:28, 197:20, 198:23, 201:25, 201:28, 205:26, 206:19, 208:26, 214:11, 215:9, 224:7, 224:8, 229:3, 230:11, 230:21, 230:25, 230:26, 231:9, 231:11, 231:15, 231:17, 231:18, 231:19, 231:29, 232:2, 232:18, 232:23, 232:29, 233:14, 233:18, 233:22, 234:11, 234:24, 235:11 COUNCIL [1] - 2:4 Council's [8] -145:21, 161:29, 162:15, 162:25, 164:24, 205:25, 228:23, 234:29 council...(INTERJECTION[1] -233:3 **counsel** [1] - 64:6 counselor[1] -215:10 Counselor [1] -215:11 counted [1] - 236:27 counties [5] -119:14, 151:24, 152:6, 152:13, 234:26

countries [18] - 10:4,

11:28, 12:2, 12:3,

12:21, 14:16, 16:14,

23:15, 32:18, 36:5,

39:26, 68:16, 159:5,

194:18, 236:13, 238:6 country [14] - 17:25, 22:9, 37:1, 37:5, 39:24, 66:25, 68:26, 99:3, 107:26, 151:13, 151:17, 158:3, 236:28, 238:4 country's [1] -185:20 countrywide [1] -147:8 county [22] - 107:25, 143:8, 143:11, 143:29, 144:18, 144:23, 145:8, 145:17, 145:19, 145:24, 145:29, 151:18, 162:28, 163:15, 164:5, 212:11, 226:19, 229:2, 229:20, 234:27, 234:29, 235:12 County [88] - 52:17, 91:16, 107:5, 107:6, 107:11, 107:13, 109:15, 109:16, 142:28, 143:6, 143:7, 143:16, 143:17, 143:24, 145:21, 147:5, 147:15, 147:16, 147:17, 148:14, 148:20, 148:21, 149:14, 149:15, 149:16, 153:25, 153:28, 154:25, 161:24, 161:28, 161:29, 162:15, 162:16, 162:25, 163:10, 163:20, 163:22, 163:28, 164:11, 164:12, 164:23, 165:2, 169:8, 196:28, 197:20, 198:23, 199:8, 199:24, 200:14, 200:19, 201:21, 201:25. 201:27, 205:25, 205:26, 206:13, 206:19, 208:26, 209:5, 210:13, 214:11, 224:7, 224:8, 226:18, 228:23, 229:3, 230:11, 230:21, 230:25, 230:26, 231:9, 231:11, 231:15, 231:18, 231:29,

232:1, 232:18. 232:23, 232:29, 233:2, 233:14, 233:18, 233:22, 234:11, 234:24, 234:29, 235:7, 235:10 **COUNTY** [1] - 2:4 couple [7] - 57:22, 75:25, 84:29, 113:23, 119:18, 184:1, 202:4 coupled [1] - 138:10 couplings [4] - 86:4, 86:5, 86:22, 87:18 course [8] - 23:11, 44:12, 83:25, 105:24, 109:3, 191:4, 193:14, 221:24 court [2] - 207:11, 207:19 courts [2] - 223:27, 224:4 Cove [5] - 30:18, 37:13, 44:16, 46:7, 135:17 cover [9] - 7:4, 26:4, 40:25, 88:21, 126:18, 142:28, 186:8, 193:9, 195:15 covered [7] - 18:9. 33:10, 35:16, 106:25, 181:26, 195:12, 195:13 covering [1] - 98:13 create [10] - 45:8, 70:9, 115:18, 144:1, 144:19, 147:10, 156:28, 160:21, 174:8, 237:28 created [3] - 129:4, 174:10, 237:18 creates [3] - 134:28, 209:29 creating [5] - 32:29, 69:19, 99:28, 209:25, 238:2 creation [4] - 107:13, 115:17, 145:5, 198:20 creation' [1] - 148:18 Creavan [1] - 163:18 credible [3] - 46:1, 170:20. 170:22 credit [1] - 238:12 credits [2] - 238:3, 243:11 crisis [1] - 68:14 Criteria [1] - 109:21 criteria [8] - 99:8, 99:22, 100:27, 102:10, 105:8,

106:17, 127:16,

202:13 critical [5] - 137:12, 144:1, 144:19, 152:16, 178:3 critically [2] -151:29, 158:1 Croix [1] - 9:11 cross [1] - 23:2 CROSS [3] - 39:1, 115:6, 166:14 **CROSS-EXAMINED** [3] - 39:1, 115:6, 166:14 crowd [1] - 244:10 crucial [1] - 158:7 crude [7] - 8:16, 8:22, 13:9, 13:22, 72:4, 224:21 Cryogenic [1] -131:22 cubic [9] - 9:21, 12:11, 15:7, 39:15, 74:16, 74:19, 140:26, 223:10 culturally [1] - 79:14 culture [1] - 118:17 Cumbria [1] - 183:7 cumulative [2] -162:27, 163:12 curious [1] - 220:22 current [17] - 15:6, 15:17, 26:29, 39:14, 43:17, 46:8, 63:6, 71:18, 136:13, 137:1, 137:14, 138:7, 141:4, 160:3, 178:5, 189:17, 203:22 customer [1] - 70:24 customers [4] - 9:23, 20:27, 94:24, 241:25 cut [6] - 60:14, 170:18, 186:18, 189:22, 190:10, 223:6 cutting [3] - 93:14, 94:6, 218:2 cycle [2] - 13:2, 33:15 Cyprus [1] - 12:5 D daily [10] - 19:8,

70:13, 71:1, 71:5, 71:6, 172:5, 172:7, 172:19, 191:13, 243:14 damage [7] - 30:14, 30:15, 45:27, 45:28, 46:15, 136:25, 216:5

domoging (o)	63:12, 72:14, 83:27,	11.25 14.21 15.27	150:20 160:10	Docien (4) 101:2
damaging [2] - 32:28, 146:13	103:21, 104:13,	11:25, 14:21, 15:27, 216:24	159:29, 160:10, 173:9, 179:22,	Design [1] - 101:2 design [12] - 61:17,
dams [1] - 137:3	194:23, 195:8, 201:5,	Degree [3] - 5:6,	179:26, 180:9, 182:6,	110:11, 113:3, 125:3,
dangerous [2] -	201:9, 202:12,	141:27, 141:29	219:27	126:3, 127:9, 128:3,
195:27, 235:25	202:19, 202:25,	degrees [1] - 141:29	Department's [1] -	129:28, 134:28,
dash [1] - 13:5	204:17, 204:22,	delay [1] - 155:11	160:2	137:25, 162:6, 179:9
Data [5] - 61:6,	206:19, 206:29,	delayed [3] - 25:15,	departmental [1] -	designated [2] -
61:20, 61:21, 82:26,	224:8, 243:20	45:10, 73:23	173:21	147:13, 162:21
84:12	decisions [7] - 6:21,	deliberately [1] -	departures [1] -	designation [3] -
data [5] - 33:19,	72:10, 72:16, 73:5,	179:18	134:10	146:10, 146:23,
34:8, 35:5, 103:19,	73:7, 149:18	delicate [1] - 181:10	dependence [1] -	146:26
137:19	declaration [1] -	deliver [7] - 23:12,	158:10	designed [10] - 19:1,
date [7] - 41:1, 93:2,	202:21	53:20, 66:3, 103:2,	dependency [2] -	23:12, 40:14, 42:9,
103:3, 131:24,	declarations [1] -	151:9, 195:26	14:11, 36:1	74:15, 74:17, 89:9,
131:29, 202:2, 245:15	243:16	delivered [7] - 53:21,	dependent [7] -	134:2, 138:12, 151:9
dates [1] - 104:23	declared [5] - 60:3,	55:6, 55:10, 70:19,	16:17, 127:14,	designers [1] - 89:22
Datum [1] - 103:6	199:8, 208:4, 243:12,	138:2, 141:19, 181:21	151:26, 152:1,	designs [5] - 128:6,
David [1] - 170:10	243:14	deliveries [5] - 14:6,	155:16, 209:15,	132:25, 133:23,
DAY [1] - 1:17	decline [8] - 28:1,	26:16, 73:27, 131:13,	209:27	136:13, 136:26
day-to-day [1] -	120:15, 150:19,	134:11	depleted [16] -	desirability [1] -
187:21	155:23, 169:12,	delivering [9] - 19:5,	138:4, 176:19,	12:26
days [11] - 10:22,	169:13, 169:17, 170:1 declined [3] -	124:29, 178:12,	181:23, 185:15,	desire [2] - 14:20,
42:5, 42:28, 111:19,	150:13, 167:19, 169:6	178:13, 195:25,	185:16, 185:21, 186:6, 186:20,	16:13
120:17, 133:18,	declines [2] - 13:28,	195:28, 196:1, 237:21, 241:24	186:21, 186:27,	desired [1] - 11:20 desperately [1] -
185:19, 185:27, 185:28, 186:19,	169:14	delivers [1] - 53:12	187:15, 187:17,	120:5
189:20	decrease [1] - 169:2	delivery [5] - 16:2,	187:29, 189:23,	detail [13] - 18:9,
DB [2] - 110:17,	DEDs [2] - 169:26,	27:21, 74:7, 111:21,	193:25	33:10, 35:16, 40:25,
137:29	170:3	158:5	depleting [2] - 13:15,	62:1, 66:9, 84:14,
DC [1] - 86:16	deemed [4] - 101:19,	demand [21] - 11:19,	188:28	108:29, 140:17,
deal [13] - 56:19,	101:28, 102:2, 104:17	12:25, 12:29, 13:7,	deploying [1] -	184:19, 186:26,
80:6, 113:21, 118:28,	Deep [1] - 103:22	14:10, 15:9, 17:20,	139:16	218:21, 237:4
126:21, 172:29,	deep [30] - 99:4,	18:15, 19:8, 19:12,	deployment [1] -	detailed [10] - 86:17,
181:3, 197:17, 200:5,	102:11, 102:28,	26:22, 27:17, 149:25,	129:14	87:2, 109:3, 109:20,
203:14, 206:4, 206:6	103:22, 104:19,	158:13, 158:16,	deposits [4] - 28:2,	128:3, 154:8, 160:24,
deal" [1] - 31:7	105:14, 105:16,	158:17, 158:18,	76:18, 76:20, 183:12	226:13, 228:2, 242:23
dealing [10] - 38:12,	106:26, 107:8,	193:16, 194:5, 204:15	depth [5] - 99:25,	Detailed [1] - 11:6
38:14, 38:15, 49:17,	107:12, 107:16,	Demand [1] - 39:12	101:21, 127:21,	details [4] - 15:23,
51:6, 54:5, 97:8,	108:5, 109:18, 127:1,	demands [3] - 14:15,	130:11, 192:23	109:26, 112:8, 238:25
195:22, 207:23,	140:25, 145:4, 147:8,	156:25, 194:10	depths [2] - 102:2,	deteriorates [1] -
235:23	148:17, 164:28,	demolished [2] -	129:10	136:24
deals [1] - 30:25	192:14, 192:16,	45:6, 45:7	Deputy [1] - 222:19	determination [1] -
dealt [5] - 97:12,	192:20, 197:2, 198:19, 199:2, 209:8,	demolition [1] -	Des [1] - 191:27	47:2
119:2, 170:26, 170:29	209:13, 209:22,	49:19	DES [1] - 2:20 describe [4] - 6:18,	determine [1] -
Dear [1] - 213:1	209:27, 230:18	demonstrate [1] - 37:12	44:28, 44:29, 108:29	201:13 determined [3] -
debate [2] - 237:19, 244:19	defer [2] - 114:29,	demonstrated [2] -	described [17] -	46:27, 99:9, 99:10
decade [2] - 13:6,	171:6	34:21, 56:25	18:29, 20:29, 32:10,	devastating [1] -
13:25	deferred [2] -	demonstrates [1] -	34:21, 43:16, 52:18,	219:18
decades [3] - 11:6,	123:21, 203:28	56:27	72:14, 109:27, 127:4,	develop [10] - 7:19,
14:12, 86:22	deficit [1] - 202:6	demonstrating [1] -	128:8, 128:27, 130:6,	52:21, 58:8, 60:9,
December [2] -	deficits [1] - 156:24	15:27	133:7, 135:19, 138:8,	143:12, 154:1, 187:2,
30:10, 184:13	defined [2] - 128:18,	denied [3] - 29:23,	152:21, 219:15	214:12, 214:14,
decide [3] - 205:6,	128:19	29:24, 64:4	describes [2] -	243:28
219:10, 231:1	defines [1] - 229:8	depart [1] - 130:14	81:17, 137:9	developed [15] -
decided [2] - 179:17,	definitely [4] -	department [1] -	describing [1] -	12:7, 24:2, 55:24,
219:24	182:13, 203:1,	173:23	126:15	56:18, 112:23,
decision [25] - 14:5,	203:15, 224:5	Department [14] -	description [4] -	131:23, 132:21,
24:24, 24:25, 30:29,	definition [1] - 32:15	11:10, 122:29, 123:8,	106:9, 106:14,	135:8, 135:10,
35:22, 45:19, 55:26,	degree [5] - 5:5,	137:7, 159:22,	106:25, 126:12	135:11, 150:23,

151:17, 151:22,	164:21, 164:27,	200:19, 201:21,	7:11, 10:27, 57:23,	discussions [5] -
159:1, 218:25	164:29, 165:9,	206:14, 207:2, 207:3,	100:6	28:9, 92:5, 93:20,
Developed [1] -	165:11, 196:26,	207:9, 208:2, 208:3,	dioxide [2] - 17:15,	95:16, 228:24
135:18	197:2, 198:19, 199:4,	209:6, 210:13,	33:25	disgraceful [1] -
developer [4] - 22:8,	200:13, 200:18,	211:19, 212:5, 214:9,	dioxides [1] - 33:18	119:24
214:10, 216:1, 217:9	201:4, 201:15,	214:12, 214:24,	direct [6] - 5:10,	display [2] - 197:17,
developers [1] -	201:19, 206:13,	231:6, 235:1, 235:7	6:20, 80:3, 81:15,	232:27
216:26	207:29, 208:14,	developments [2] -	186:28, 230:15	dispute [1] - 67:10
	209:8, 209:9, 209:14,	137:13, 162:13	Directive [11] -	disregard [1] - 29:24
Developing [2] -	209:21, 209:25,	developments [1] -		• • • •
18:12, 152:25	210:15, 210:26,	197:3	63:27, 112:17,	disruption [3] -
developing [10] -	· · ·		112:23, 112:25,	94:13, 185:27, 186:5
5:11, 9:2, 10:18, 12:8,	211:5, 211:20, 212:5,	develops [1] - 18:16	186:1, 201:1, 201:3,	disruptions [1] -
24:4, 37:14, 57:26,	212:7, 212:8, 212:10,	device [2] - 137:16,	205:23, 221:10,	16:19
111:28, 156:4, 216:2	214:15, 214:26,	137:18	221:21, 221:25	distance [2] - 91:25,
development [152] -	226:10, 226:13,	devices [5] - 132:21,	directives [3] -	229:26
6:23, 8:21, 14:29,	227:21, 228:3,	136:19, 136:22,	63:25, 63:26, 63:29	distances [3] -
17:12, 18:13, 19:26,	230:14, 230:17,	136:24, 137:15	Directives [1] - 66:28	14:24, 33:28, 33:29
20:7, 24:11, 25:3,	230:18, 231:8,	devil [1] - 196:23	directly [13] - 22:28,	distant [2] - 105:29,
25:22, 27:25, 33:5,	231:24, 234:2,	DG [1] - 65:20	27:19, 37:12, 37:17,	113:4
34:19, 34:26, 38:4,	242:17, 244:20,	Dhabi [1] - 14:28	48:28, 81:8, 92:10,	distillate [1] - 72:5
38:16, 55:28, 65:14,	245:10	diagram [1] - 106:5	116:2, 128:27, 168:1,	distinct [2] - 92:24,
95:4, 95:18, 97:27,	DEVELOPMENT [1]	diameter [1] - 104:7	184:28, 185:1, 205:14	170:3
97:28, 104:1, 104:23,	- 3:9	difference [4] - 54:7,	Director [4] - 97:19,	distribution [2] -
107:8, 107:13,	Development [101] -	54:10, 79:12, 82:22	101:3, 125:11, 141:26	
107:14, 107:16,	87:25, 87:28, 91:17,		director [3] - 5:3,	129:1, 145:23
107:17, 107:19,	95:17, 97:26, 106:6,	differences [2] -	6:11, 125:1	district [2] - 85:23,
107:23, 108:3,	106:12, 106:21,	85:18, 86:3		86:2
108:16, 109:17,	107:5, 107:6, 107:7,	differences [1] -	dirtier [1] - 239:6	District [1] - 169:26
	107:15, 107:18,	85:24	dirty [2] - 239:3,	disturbance [1] -
109:19, 109:20,	107:21, 109:1,	different [32] - 10:29,	241:10	69:6
114:20, 119:28,		23:24, 33:20, 50:3,	discharge [3] -	disturbed [1] -
121:19, 137:11,	109:15, 109:17,	51:20, 53:25, 53:27,	100:7, 130:11, 133:14	108:23
143:8, 144:5, 144:8,	114:14, 115:16,	53:29, 54:9, 54:13,	discharging [2] -	dive [1] - 118:9
144:9, 144:12, 145:3,	115:23, 116:15,	54:22, 54:23, 54:25,	134:15, 181:9	diverse [1] - 159:5
145:5, 145:8, 146:1,	116:18, 116:20,	56:28, 56:29, 57:2,	disclosure [2] - 35:8,	diversify [1] - 11:21
146:8, 146:11,	116:23, 116:27,	70:28, 74:7, 82:16,	41:11	diversifying [1] -
146:13, 147:9,	117:7, 120:4, 127:3,	82:20, 82:21, 85:17,	disconnection [1] -	16:15
147:11, 148:13,	142:28, 143:3, 143:6,	89:29, 90:7, 90:16,	126:29	Diversifying [1] -
148:17, 148:18,	143:7, 143:18,	118:25, 128:7,	disconnects [1] -	16:22
148:23, 148:25,	143:24, 143:27,	155:21, 170:5, 216:9,	134:12	diversity [5] -
148:26, 149:17,	144:15, 147:5,	217:20	discontinued [1] -	110:12, 135:24,
149:18, 149:23,	147:15, 147:17,	difficult [12] - 50:27,	183:9	137:26, 159:7, 165:11
150:5, 150:23,	147:19, 148:14,	71:1, 169:28, 172:28,	discover [2] -	divert [2] - 22:14,
150:28, 151:7,	148:20, 149:4,	175:13, 175:14,	174:11, 174:12	
151:10, 151:26,	149:14, 149:15,	178:1, 181:10,	discovered [3] -	29:4
151:27, 151:29,	149:16, 149:27,	183:14, 195:8,	27:24, 28:3, 40:11	diverted [1] - 15:28
152:1, 152:8, 152:13,	150:17, 151:8,	195:27, 207:21		divest [1] - 57:28
152:17, 153:5, 153:7,	153:25, 153:29,	difficulties [11] -	discoveries [1] - 19:16	divided [1] - 155:22
153:13, 154:2, 154:5,	156:8, 156:9, 156:11,			Divisions [1] -
154:9, 154:14,	156:19, 159:2,	83:23, 84:2, 145:15,	discovery [1] - 37:4	169:26
154:18, 154:19,	159:24, 160:17,	176:15, 177:24,	discretion [1] - 220:4	Dixon [1] - 163:17
154:24, 155:7,	160:19, 161:13,	177:29, 178:29,	discuss [10] - 7:8,	dock [3] - 129:2,
155:20, 155:24,	161:25, 162:3,	181:8, 197:6, 235:21,	15:24, 37:21, 61:29,	129:6, 204:16
156:6, 156:17,	162:17, 163:10,	236:6	66:9, 87:29, 88:20,	docked [1] - 111:12
156:25, 156:27,	164:11, 164:20,	difficulty [5] - 82:7,	99:7, 203:21, 234:8	Docklands [1] -
157:2, 157:11, 158:3,	165:2, 165:6, 169:23,	82:19, 82:27, 84:4,	discussed [6] -	161:4
159:10, 159:19,	191:14, 191:16,	236:1	25:20, 62:24, 98:26,	document [20] -
	196:29, 197:14,	digging [2] - 77:10,	138:9, 159:27, 173:10	59:6, 59:10, 79:3,
159:20, 161:2, 161:3,	198:13, 198:16,	93:15	discussing [1] -	89:29, 101:5, 143:20,
161:10, 161:16,	198:25, 198:29,	dimension [1] -	118:4	147:22, 160:24,
162:4, 164:4, 164:14,	199:7, 199:8, 199:21,	151:7	discussion [3] -	160:26, 163:29,
164:16, 164:17,		dimensions [4] -	51:10, 174:21, 207:14	195:1, 228:17,
	199:25, 200:14,		•	. 30, ==3,

000 04 000 05	400 40 400 47			450.47.450.00
228:21, 228:25,	163:16, 163:17,	dynamics [2] - 43:7,	economically [4] -	153:17, 156:20,
229:14, 229:19,	199:10, 199:28,	71:14	23:7, 137:19, 154:4,	158:24, 159:25,
229:23, 230:5	224:12, 224:17,	Dáil [2] - 244:19,	226:8	163:28, 164:8,
Document [1] -	246:13	245:8	economies [3] -	201:11, 201:16,
194:28	draft [4] - 103:4,	déjà [1] - 224:2	14:14, 68:16, 100:19	215:26, 232:19, 244:1
documentation [3] -	103:22, 153:28	Dúchas [3] - 146:16,	economists [2] -	Either [1] - 130:27
84:9, 97:23, 237:2	drafting [1] - 6:24	146:23, 146:26	172:15, 173:24	either [21] - 11:28,
documentations [1]	Dragon [3] - 135:15,		_ economy [8] - 118:8,	22:29, 28:12, 39:24,
- 180:28	170:14, 220:24	E	150:17, 157:5,	41:27, 53:14, 55:18,
documents [8] -	dramatically [1] -		- 157:29, 158:6,	66:21, 70:15, 72:4,
59:1, 59:29, 61:4,	130:4	o trodo (n. 155,17	159:12, 160:6, 229:2	72:24, 76:7, 128:17,
83:20, 181:2, 212:11,	draw [1] - 209:5	e-trade [1] - 155:17	Edinburgh [1] - 5:5	131:6, 134:15, 194:5,
235:12	drawings [1] - 90:2	e.g [3] - 135:10,	education [1] - 152:4	205:25, 208:16,
dollar [1] - 86:7	drawn [3] - 193:7,	135:11, 155:27	educational [1] - 5:4	212:8, 212:17, 230:2
domain [3] - 7:8,	193:27, 193:28	Eamon [1] - 244:18	Edward [1] - 47:8	EI [1] - 9:28
50:17, 83:26	dredging [1] - 99:28	earliest [1] - 11:23	effect [10] - 20:19,	elaborate [1] - 53:15
dome [1] - 90:5	drive [1] - 11:26	early [7] - 12:20,	27:23, 28:5, 28:22,	Elba [1] - 135:17
domestic [9] - 11:29,	driven [6] - 11:19,	15:3, 17:12, 110:10,	46:21, 115:20,	elected [1] - 119:22
12:24, 13:21, 13:28,	15:2, 19:4, 70:15,	137:24, 193:25,	148:19, 186:5, 200:9,	election [1] - 48:10
18:17, 34:7, 68:23,	74:22, 152:1	245:29	222:16	Electoral [1] - 169:26
76:24, 155:18	drivers [1] - 57:1	earmarked [1] -	effective [2] - 13:3,	electric [3] - 33:16,
domestically [1] -	driving [6] - 6:9,	107:23	132:21	239:23, 240:5
34:5	11:7, 11:22, 12:18,	ease [2] - 96:26,	Effectively [1] -	electricity [13] - 8:17,
domiciled [1] - 32:12	13:7, 16:13	99:21	229:7	9:22, 13:4, 36:14,
dominant [1] - 58:3	Drogheda [1] -	easily [2] - 14:23,	effectively [3] -	99:5, 100:17, 100:20,
dominate [1] - 16:3	101:23	176:17	187:28, 188:13, 229:9	104:3, 104:9, 105:27,
done [18] - 43:9,	drop [1] - 14:1	East [6] - 9:20,	effects [2] - 146:9,	153:2, 158:16, 242:25
46:26, 48:11, 51:25,	dropped [1] - 26:12	13:17, 14:13, 15:1,	213:14	element [1] - 154:17
72:17, 77:10, 122:1,	dropping [1] - 14:28	19:28, 70:6	efficacious [1] -	elementary [1] -
176:22, 180:25,	dry [1] - 204:16	east [5] - 106:7,	243:5	127:12
183:10, 187:7,	drying [1] - 86:4	107:1, 108:9, 139:12,	efficient [3] - 24:12,	elements [2] - 127:5,
188:19, 195:24,	DTI [2] - 110:8,	178:12	55:29, 158:12	240:22
205:21, 206:14,	137:21	Eastern [1] - 9:19	efforts [2] - 5:11,	eliminating [1] -
215:12, 222:23	Dublin [3] - 101:23,	eastern [11] - 13:18,	13:21	131:15
DONNCHA [1] - 2:15	109:25, 151:12	33:27, 37:14, 108:5,	Egypt [3] - 10:5,	elsewhere [4] -
doomed [1] - 68:29	Due [1] - 24:13	147:27, 147:29,	14:26, 36:6	67:23, 78:16, 129:19,
door [1] - 217:9	due [5] - 87:6,	152:29, 194:7,	EIA [2] - 63:28, 201:1	238:2
double [1] - 46:4	108:28, 114:25,	217:29, 218:3, 218:13	eight [2] - 77:2,	embedded [1] -
doubt [2] - 97:10,	190:11, 194:28	easy [2] - 51:8, 51:15	207:2	12:15
235:27	Dundalk [1] - 101:23	ECO [6] - 143:25,	EILEEN [1] - 2:16	embraced [1] -
down [32] - 10:4,	DUNLEAVY [1] -	143:29, 144:4,	Eileen [1] - 55:22	242:11
50:22, 74:23, 76:19,	2:10	144:12, 144:17,	EirGrid [7] - 92:5,	emergency [6] -
76:27, 82:2, 93:3,	During [3] - 12:9,	148:19	92:7, 92:9, 92:14,	23:13, 126:28,
93:5, 93:11, 94:29,	125:22, 168:25	ecological [1] -	157:26, 242:22	131:25, 217:20,
95:2, 118:10, 118:11,	during [20] - 24:12,	230:19	EIS [50] - 6:25, 7:6,	223:4, 223:5
120:27, 120:29,	28:27, 30:9, 39:7,	economic [28] -	11:2, 25:20, 26:5,	emissions [9] - 17:7,
121:8, 126:29,	55:29, 80:2, 86:6,	93:4, 97:26, 99:27,	30:8, 33:11, 34:21,	33:14, 34:9, 53:24,
130:25, 130:27,	111:22, 132:8,	130:4, 143:25, 144:2,	74:14, 79:8, 97:23,	237:28, 238:1,
187:6, 189:18, 193:7,	132:10, 132:23,	144:12, 144:13,	99:10, 101:11,	238:13, 240:12,
193:27, 193:28,	133:18, 134:11,	144:17, 144:19,	102:15, 106:4,	240:14
223:1, 223:3, 223:6,	146:19, 146:27,	149:19, 150:6, 151:9,	106:13, 109:1,	emotion [1] - 51:15
223:7, 223:9, 223:29,	158:6, 175:28, 193:3,	151:11, 154:2, 154:5,	109:23, 109:27,	emphasis [4] -
233:13	193:24, 228:20	154:19, 156:6,	112:15, 126:10,	145:28, 151:19,
download [2] -	dust [1] - 53:5	156:10, 156:15,	127:4, 128:8, 128:28,	227:19, 243:17
41:15, 41:21	Dutch [4] - 240:27,	156:28, 157:4, 158:3,	130:7, 131:8, 133:8,	emphasise [1] -
downloadable [1] -	241:2, 243:3, 243:5	162:5, 165:11,	135:19, 138:8,	18:20
41:18	duty [2] - 63:24,	226:10, 227:21,	140:28, 142:18,	emphasised [1] -
downstream [3] -	63:28	230:16	142:19, 143:14,	214:11
9:4, 9:9, 161:8	DWT [2] - 103:1,	economical [1] -	144:21, 148:6, 149:7,	employ [2] - 86:25,
Dr [8] - 139:5,	103:4	12:27	149:12, 151:5,	194:24

employed [4] - 17:9,	33:6, 34:19, 34:22,	engineering [1] -	entitled [4] - 101:1,	24:25, 219:16
139:24, 232:25, 233:9	36:2, 36:12, 36:19,	127:19	102:21, 156:12, 201:1	erect [1] - 204:9
employee [1] -	36:24, 42:14, 65:15,	Engineering [3] -	entity [1] - 8:10	error [1] - 76:14
187:10	68:11, 77:6, 80:9,	124:14, 141:27,	entry [1] - 103:22	errors [1] - 237:5
employees [2] -	95:5, 110:3, 135:25,	141:28	ENV1 [2] - 162:17,	ESB [3] - 24:7, 25:3,
31:10, 37:25	135:26, 136:2,	Engineers [7] -	162:19	157:25
employer [4] - 80:22,	136:11, 136:13,	105:5, 124:17,		
• •	136:14, 136:18,		ENV2 [1] - 162:17	escape [1] - 127:24
199:3, 210:21, 210:28	137:1, 137:10,	141:27, 142:2, 142:3,	Environment [5] -	Especially [1] - 17:9
employers [1] -	137:12, 137:14,	142:11, 142:13	110:18, 112:12,	especially [10] -
211:8	137:12, 137:14,	engineers [2] -	138:26, 208:8, 243:17	12:29, 14:15, 17:11,
employing [1] -	137:13, 137:19,	98:21, 142:12	environment [14] -	19:8, 27:17, 33:15,
132:20	142:27, 152:20,	England [2] - 183:7,	31:11, 32:28, 37:25,	51:7, 99:2, 132:10,
employment [17] -	152:24, 152:25,	222:4	67:15, 67:29, 72:1,	137:2
95:3, 107:13, 119:16,	152:24, 152:25,	enhance [1] - 149:19	105:24, 145:29,	essential [1] - 127:5
136:26, 143:25,		enhanced [2] - 9:28,	146:6, 147:12, 157:7,	essentially [1] -
144:11, 144:13,	153:14, 154:1, 154:5,	10:2	224:22, 224:25,	130:21
145:5, 147:10,	154:14, 155:8, 155:9,	enhancement [4] -	230:20	established [9] -
148:18, 149:1,	155:10, 155:11,	152:9, 152:14,	environmental [20] -	7:18, 101:27, 102:27,
150:19, 152:3,	157:16, 157:20,	156:26, 161:5	11:22, 13:20, 17:13,	132:19, 152:3,
198:20, 209:25,	157:21, 158:2, 158:5,	Enhancing [2] -	30:15, 48:25, 63:26,	170:21, 197:12,
210:19, 211:1	158:9, 158:10,	151:28, 152:20	64:3, 99:26, 108:18,	197:23, 235:27
employs [1] - 10:22	158:12, 158:13,	enhancing [4] -	129:5, 130:1, 136:16,	establishment [2] -
empowered [1] -	158:19, 158:25,	153:1, 153:8, 153:13,	137:2, 142:4, 157:6,	107:27, 153:10
171:26	159:7, 159:9, 162:4,	159:6	157:20, 162:6, 201:2,	estimate [2] -
empty [2] - 123:4,	165:12, 166:27,	enjoy [1] - 5:1	201:4	170:22, 170:23
216:4	189:28, 209:29,	enjoyed [1] - 60:26	Environmental [15] -	estimated [1] -
EN [4] - 146:3, 146:8,	226:9, 238:15,	enjoying [1] - 4:26	6:24, 62:13, 105:3,	170:20
146:15, 146:21	238:16, 238:18,	enjoys [2] - 37:16,	106:18, 113:9, 142:7,	estuaries [3] -
Encourage [2] -	238:28, 239:3,	58:21	142:14, 232:4, 232:9,	129:13, 129:16, 137:3
143:25, 144:13	239:13, 239:23,	Ensure [4] - 143:29,	232:12, 232:14,	estuarine [1] -
encourage [2] -	240:22, 241:22,	144:17, 146:8, 155:9	233:7, 233:11,	230:20
95:16, 95:17	241:23, 241:25,	ensure [9] - 20:13,	233:16, 234:15	ESTUARY [1] - 1:7
	242:19, 242:20,	• • • • • • • • • • • • • • • • • • • •	environmental/	
encouraged [1] -	242:19, 242:20, 242:28, 243:18,	37:24, 68:6, 100:15,	environmental/	estuary [13] - 103:8,
encouraged [1] - 160:6		37:24, 68:6, 100:15, 119:4, 126:23,	environmental/ heritage [2] - 162:29,	estuary [13] - 103:8, 103:15, 103:25,
encouraged [1] - 160:6 encouragement [1] -	242:28, 243:18,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20	environmental/ heritage [2] - 162:29, 163:15	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5,
encouraged [1] - 160:6 encouragement [1] - 25:7	242:28, 243:18, 243:22, 244:11,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3,	environmental/ heritage [2] - 162:29, 163:15 environmentally [5]	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] -	242:28, 243:18, 243:22, 244:11, 244:17, 244:18	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20,	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5,	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23,	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16,	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] -	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17,	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] -	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17,	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7,	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] -	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29, 195:22	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21, 158:26, 163:28,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29 entertain [1] - 208:5	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1 equate [1] - 29:7	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4, 154:28, 155:1, 155:2,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29, 195:22 endeavour [1] -	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21, 158:26, 163:28, 164:7, 164:8, 173:9,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29 entertain [1] - 208:5 entertaining [1] -	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1 equate [1] - 29:7 Equatorial [2] - 9:29,	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4, 154:28, 155:1, 155:2, 155:27, 156:6,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29, 195:22 endeavour [1] - 54:19	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21, 158:26, 163:28, 164:7, 164:8, 173:9, 179:13, 184:7, 192:9,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29 entertain [1] - 208:5 entertaining [1] -	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1 equate [1] - 29:7 Equatorial [2] - 9:29, 14:26	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4, 154:28, 155:1, 155:2, 155:27, 156:6, 159:14, 159:21,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29, 195:22 endeavour [1] - 54:19 ended [1] - 28:28	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21, 158:26, 163:28, 164:7, 164:8, 173:9, 179:13, 184:7, 192:9, 192:11, 220:2,	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29 entertain [1] - 208:5 entertaining [1] - 246:5 enthusiasm [1] -	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1 equate [1] - 29:7 Equatorial [2] - 9:29, 14:26 equipment [13] -	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4, 154:28, 155:1, 155:2, 155:27, 156:6, 159:14, 159:21, 160:22, 161:7, 161:9,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29, 195:22 endeavour [1] - 54:19 ended [1] - 28:28 ends [1] - 181:27	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21, 158:26, 163:28, 164:7, 164:8, 173:9, 179:13, 184:7, 192:9, 192:11, 220:2, 243:16, 244:26	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29 entertain [1] - 208:5 entertaining [1] - 246:5 enthusiasm [1] -	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1 equate [1] - 29:7 Equatorial [2] - 9:29, 14:26 equipment [13] - 83:2, 86:8, 125:22,	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4, 154:28, 155:1, 155:2, 155:27, 156:6, 159:14, 159:21, 160:22, 161:7, 161:9, 218:26, 230:16
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29, 195:22 endeavour [1] - 54:19 ended [1] - 28:28 ends [1] - 181:27 energies [3] - 240:7,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21, 158:26, 163:28, 164:7, 164:8, 173:9, 179:13, 184:7, 192:9, 192:11, 220:2, 243:16, 244:26 enforce [2] - 66:20, 67:24	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29 entertain [1] - 208:5 entertaining [1] - 246:5 enthusiasm [1] -	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1 equate [1] - 29:7 Equatorial [2] - 9:29, 14:26 equipment [13] - 83:2, 86:8, 125:22, 131:10, 132:15,	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4, 154:28, 155:1, 155:2, 155:27, 156:6, 159:14, 159:21, 160:22, 161:7, 161:9, 218:26, 230:16 etc [12] - 38:16, 53:5,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29, 195:22 endeavour [1] - 54:19 ended [1] - 28:28 ends [1] - 181:27 energies [3] - 240:7, 242:18, 244:9	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21, 158:26, 163:28, 164:7, 164:8, 173:9, 179:13, 184:7, 192:9, 192:11, 220:2, 243:16, 244:26 enforce [2] - 66:20, 67:24 enforcing [1] - 64:23	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29 entertain [1] - 208:5 entertaining [1] - 246:5 enthusiasm [1] - 24:17 enthusiastic [1] - 38:2	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1 equate [1] - 29:7 Equatorial [2] - 9:29, 14:26 equipment [13] - 83:2, 86:8, 125:22, 131:10, 132:15, 133:1, 133:10,	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4, 154:28, 155:1, 155:2, 155:27, 156:6, 159:14, 159:21, 160:22, 161:7, 161:9, 218:26, 230:16 etc [12] - 38:16, 53:5, 77:20, 145:25,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29, 195:22 endeavour [1] - 54:19 ended [1] - 28:28 ends [1] - 181:27 energies [3] - 240:7, 242:18, 244:9 energy [98] - 7:10,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21, 158:26, 163:28, 164:7, 164:8, 173:9, 179:13, 184:7, 192:9, 192:11, 220:2, 243:16, 244:26 enforce [2] - 66:20, 67:24 enforcing [1] - 64:23 engage [1] - 155:16	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29 entertain [1] - 208:5 enthusiasm [1] - 24:17 enthusiastic [1] -	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1 equate [1] - 29:7 Equatorial [2] - 9:29, 14:26 equipment [13] - 83:2, 86:8, 125:22, 131:10, 132:15, 133:1, 133:10, 133:23, 134:18,	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4, 154:28, 155:1, 155:2, 155:27, 156:6, 159:14, 159:21, 160:22, 161:7, 161:9, 218:26, 230:16 etc [12] - 38:16, 53:5, 77:20, 145:25, 174:13, 174:18,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29, 195:22 endeavour [1] - 54:19 ended [1] - 28:28 ends [1] - 181:27 energies [3] - 240:7, 242:18, 244:9 energy [98] - 7:10, 7:12, 8:14, 8:26, 9:1,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21, 158:26, 163:28, 164:7, 164:8, 173:9, 179:13, 184:7, 192:9, 192:11, 220:2, 243:16, 244:26 enforce [2] - 66:20, 67:24 enforcing [1] - 64:23 engage [1] - 155:16 engaged [1] - 8:15	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29 entertain [1] - 208:5 entertaining [1] - 246:5 enthusiasm [1] - 24:17 enthusiastic [1] - 38:2 entire [6] - 7:27, 13:17, 17:18, 22:1,	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1 equate [1] - 29:7 Equatorial [2] - 9:29, 14:26 equipment [13] - 83:2, 86:8, 125:22, 131:10, 132:15, 133:1, 133:10, 133:23, 134:18, 138:13, 178:2, 178:4,	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4, 154:28, 155:1, 155:2, 155:27, 156:6, 159:14, 159:21, 160:22, 161:7, 161:9, 218:26, 230:16 etc [12] - 38:16, 53:5, 77:20, 145:25, 174:13, 174:18, 177:23, 181:9, 195:5,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29, 195:22 endeavour [1] - 54:19 ended [1] - 28:28 ends [1] - 181:27 energies [3] - 240:7, 242:18, 244:9 energy [98] - 7:10, 7:12, 8:14, 8:26, 9:1, 9:3, 9:20, 10:24,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21, 158:26, 163:28, 164:7, 164:8, 173:9, 179:13, 184:7, 192:9, 192:11, 220:2, 243:16, 244:26 enforce [2] - 66:20, 67:24 enforcing [1] - 64:23 engage [1] - 155:16 engaged [1] - 8:15 Engineer [3] -	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29 entertain [1] - 208:5 entertaining [1] - 246:5 enthusiasm [1] - 24:17 enthusiastic [1] - 38:2 entire [6] - 7:27, 13:17, 17:18, 22:1, 74:10, 133:17	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1 equate [1] - 29:7 Equatorial [2] - 9:29, 14:26 equipment [13] - 83:2, 86:8, 125:22, 131:10, 132:15, 133:1, 133:10, 133:23, 134:18, 138:13, 178:2, 178:4, 179:2	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4, 154:28, 155:1, 155:2, 155:27, 156:6, 159:14, 159:21, 160:22, 161:7, 161:9, 218:26, 230:16 etc [12] - 38:16, 53:5, 77:20, 145:25, 174:13, 174:18, 177:23, 181:9, 195:5, 196:7, 199:23, 204:16
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29, 195:22 endeavour [1] - 54:19 ended [1] - 28:28 ends [1] - 181:27 energies [3] - 240:7, 242:18, 244:9 energy [98] - 7:10, 7:12, 8:14, 8:26, 9:1, 9:3, 9:20, 10:24, 11:13, 11:16, 11:21,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21, 158:26, 163:28, 164:7, 164:8, 173:9, 179:13, 184:7, 192:9, 192:11, 220:2, 243:16, 244:26 enforce [2] - 66:20, 67:24 enforcing [1] - 64:23 engage [1] - 155:16 engaged [1] - 8:15 Engineer [3] - 124:14, 142:1, 208:25	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29 entertain [1] - 208:5 entertaining [1] - 246:5 enthusiasm [1] - 24:17 enthusiastic [1] - 38:2 entire [6] - 7:27, 13:17, 17:18, 22:1,	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1 equate [1] - 29:7 Equatorial [2] - 9:29, 14:26 equipment [13] - 83:2, 86:8, 125:22, 131:10, 132:15, 133:1, 133:10, 133:23, 134:18, 138:13, 178:2, 178:4, 179:2 equipped [1] -	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4, 154:28, 155:1, 155:2, 155:27, 156:6, 159:14, 159:21, 160:22, 161:7, 161:9, 218:26, 230:16 etc [12] - 38:16, 53:5, 77:20, 145:25, 174:13, 174:18, 177:23, 181:9, 195:5, 196:7, 199:23, 204:16 EU [19] - 16:24,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29, 195:22 endeavour [1] - 54:19 ended [1] - 28:28 ends [1] - 181:27 energies [3] - 240:7, 242:18, 244:9 energy [98] - 7:10, 7:12, 8:14, 8:26, 9:1, 9:3, 9:20, 10:24, 11:13, 11:16, 11:21, 13:21, 16:14, 16:16,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21, 158:26, 163:28, 164:7, 164:8, 173:9, 179:13, 184:7, 192:9, 192:11, 220:2, 243:16, 244:26 enforce [2] - 66:20, 67:24 enforcing [1] - 64:23 engage [1] - 155:16 engaged [1] - 8:15 Engineer [3] - 124:14, 142:1, 208:25 engineer [2] -	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29 entertain [1] - 208:5 entertaining [1] - 246:5 enthusiasm [1] - 24:17 enthusiastic [1] - 38:2 entire [6] - 7:27, 13:17, 17:18, 22:1, 74:10, 133:17	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1 equate [1] - 29:7 Equatorial [2] - 9:29, 14:26 equipment [13] - 83:2, 86:8, 125:22, 131:10, 132:15, 133:1, 133:10, 133:23, 134:18, 138:13, 178:2, 178:4, 179:2 equipped [1] - 126:26	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4, 154:28, 155:1, 155:2, 155:27, 156:6, 159:14, 159:21, 160:22, 161:7, 161:9, 218:26, 230:16 etc [12] - 38:16, 53:5, 77:20, 145:25, 174:13, 174:18, 177:23, 181:9, 195:5, 196:7, 199:23, 204:16 EU [19] - 16:24, 16:27, 20:8, 22:21,
encouraged [1] - 160:6 encouragement [1] - 25:7 encouraging [1] - 244:8 END [5] - 38:6, 113:14, 117:15, 141:8, 165:14 end [17] - 6:3, 15:14, 16:25, 19:2, 32:7, 40:15, 41:1, 47:26, 70:23, 81:23, 81:29, 85:5, 108:5, 161:19, 167:16, 171:29, 195:22 endeavour [1] - 54:19 ended [1] - 28:28 ends [1] - 181:27 energies [3] - 240:7, 242:18, 244:9 energy [98] - 7:10, 7:12, 8:14, 8:26, 9:1, 9:3, 9:20, 10:24, 11:13, 11:16, 11:21,	242:28, 243:18, 243:22, 244:11, 244:17, 244:18 Energy [37] - 5:18, 11:8, 11:9, 11:10, 16:22, 17:1, 25:6, 30:20, 33:7, 37:14, 45:2, 51:25, 86:13, 86:20, 98:12, 109:29, 110:6, 122:29, 135:22, 136:7, 136:9, 137:7, 140:10, 140:15, 158:21, 158:26, 163:28, 164:7, 164:8, 173:9, 179:13, 184:7, 192:9, 192:11, 220:2, 243:16, 244:26 enforce [2] - 66:20, 67:24 enforcing [1] - 64:23 engage [1] - 155:16 engaged [1] - 8:15 Engineer [3] - 124:14, 142:1, 208:25	37:24, 68:6, 100:15, 119:4, 126:23, 157:17, 158:4, 235:20 ensuring [4] - 158:3, 158:11, 159:7, 194:17 enter [4] - 28:8, 73:5, 73:9, 103:2 entered [2] - 98:16, 116:29 entering [2] - 67:17, 174:21 Enterprise [2] - 98:12, 168:20 enterprise [2] - 156:26, 156:29 entertain [1] - 208:5 entertaining [1] - 246:5 enthusiasm [1] - 24:17 enthusiastic [1] - 38:2 entire [6] - 7:27, 13:17, 17:18, 22:1, 74:10, 133:17 entirely [4] - 38:20,	environmental/ heritage [2] - 162:29, 163:15 environmentally [5] - 12:27, 13:3, 30:20, 44:17, 158:2 envisage [2] - 93:23, 115:24 envisaged [2] - 91:17, 149:29 Eoin [1] - 216:29 equal [6] - 10:17, 15:17, 23:14, 129:7, 220:25, 221:7 equally [1] - 230:1 equate [1] - 29:7 Equatorial [2] - 9:29, 14:26 equipment [13] - 83:2, 86:8, 125:22, 131:10, 132:15, 133:1, 133:10, 133:23, 134:18, 138:13, 178:2, 178:4, 179:2 equipped [1] -	estuary [13] - 103:8, 103:15, 103:25, 103:29, 104:5, 104:28, 105:7, 108:11, 108:19, 126:14, 129:18, 161:3, 161:17 Estuary [29] - 97:25, 101:24, 101:25, 102:12, 102:21, 102:26, 103:5, 103:20, 104:14, 104:17, 125:18, 125:24, 126:7, 139:4, 140:24, 143:4, 154:28, 155:1, 155:2, 155:27, 156:6, 159:14, 159:21, 160:22, 161:7, 161:9, 218:26, 230:16 etc [12] - 38:16, 53:5, 77:20, 145:25, 174:13, 174:18, 177:23, 181:9, 195:5, 196:7, 199:23, 204:16 EU [19] - 16:24,

67:15, 67:17, 112:16, 39:14, 59:5, 129:27, 63:18, 99:9, 103:16, ex [3] - 53:21, 98:20, excuse [1] - 237:16 158:21, 158:25, **executive** [1] - 7:1 130:10, 158:15, 159:3, 175:13, 186:25 101:3 158:17, 158:18, 158:26, 163:28, ex-Chairman [1] -Executive [5] - 4:24, explanation [1] -164:7, 164:8, 186:1, 232:17 19:5 98:20 6:1, 6:4, 197:15, expects [2] - 28:16, 227:17 ex-Director [1] -221:16 exploded [2] - 85:23, Europe [29] - 13:27, 65:6 86:2 101:3 executives [1] -14:8, 14:11, 16:16, expenditures [1] ex-ship [1] - 53:21 exploit [1] - 239:14 10:23 21:18, 22:15, 22:19, exemption [1] exact [1] - 236:15 exploiting [1] - 77:22 23:4, 23:7, 23:11, exactly [4] - 23:11, expense [1] - 13:22 exploration [10] -65:23 23:26, 27:5, 27:11, expensive [6] - 16:2, 6:15, 8:15, 9:7, 13:17, 60:19, 185:22, 225:7 exemptions [1] -28:13, 31:22, 66:29, Exactly [1] - 227:2 16:9, 23:21, 84:27, 13:20, 36:29, 37:3, 65:17 70:5, 71:10, 74:22, 193:2, 216:15 78:3, 78:14, 78:17 examination [2] exercise [1] - 132:2 98:25, 206:10, 207:7, experience [37] explore [1] - 77:8 207:12, 221:13 exert [3] - 225:4, 218:1, 218:3, 218:13, 225:12, 225:26 7:10, 8:27, 8:28, 9:2, explored [3] - 77:17, **EXAMINATION** [1] -237:22, 239:23, 10:17, 10:18, 10:20, exist [5] - 31:15, 138:18, 182:1 241:22, 242:10 10:24, 21:20, 28:26, examine [1] - 92:16 129:24, 132:25, explosion [2] -European [22] - 8:7, 42:14, 42:23, 42:26, **EXAMINED** [3] -185:14, 240:23 46:18, 85:22 11:10, 11:26, 12:2, 42:28, 43:1, 43:5, explosions [2] -39:1, 115:6, 166:14 existed [1] - 235:28 16:20, 22:16, 27:10, 51:2, 57:3, 67:28, 46:20, 86:8 examined [2] existence [5] -31:23, 57:24, 57:25, 70:11, 73:6, 74:25, explosives [4] -99:19, 174:18 28:29, 30:26, 44:19, 57:27, 62:12, 63:25, 74:26, 79:21, 80:2, 58:22, 136:14 52:19, 52:21, 235:5, example [13] - 8:9, 65:14, 65:20, 66:25, 80:3, 81:15, 98:9, 31:20, 33:22, 67:4, existing [23] - 29:10, 235:6 71:17, 72:1, 74:27, 111:1, 125:28, 128:2, 73:22, 74:2, 74:12, 69:27, 99:2, 100:22, export [4] - 56:22, 142:26, 163:23, 129:16, 129:29, 108:23, 110:28, 69:27, 69:28, 75:16 74:20, 98:16, 131:2, 205:20 136:21, 141:25, 134:26, 135:1, 173:4, 178:8, 235:4 exported [2] - 65:1, evaluated [4] -192:27 138:11, 139:21, 81:27 examples [2] -101:27, 102:13, experienced [16] -162:8, 175:15, 177:1, 73:25, 137:16 exporting [4] -106:16, 106:18 7:24, 12:24, 13:5, 181:11, 187:16, 23:17, 23:26, 23:27, Examples [1] - 9:27 evaluation [3] -13:27, 16:18, 76:13, 189:3, 189:5, 189:6, 178:11 exceed [1] - 29:9 101:16, 102:14, 106:9 80:23, 131:21, 191:22, 218:6, 225:8, excellent [1] exposed [5] - 102:3, evening [1] - 166:6 134:20, 140:1, 226:20, 227:26 111:6, 131:8, 132:24, 154:13 event [5] - 34:24, 166:21, 166:27, exists [7] - 26:8, 174:13 except [7] - 22:21, 132:22, 197:7, 167:2, 167:7, 167:8, 73:12, 131:2, 185:14, exposure [2] - 66:18, 35:24, 62:6, 133:3, 204:12, 220:4 167:12 240:17, 240:19, 111:14 133:8, 170:17, 181:1 events [1] - 83:25 experiences [1] -240:20 express [1] - 181:2 exception [1] - 181:6 eventual [1] - 19:14 141:3 exotic [1] - 136:26 expressed [5] - 24:7, exceptions [1] eventually [1] - 28:1 experiencing [1] expand [2] - 26:6, 44:4, 164:23, 232:2, evidence [44] - 1:24, 245:2 excess [5] - 19:19, 5:23, 7:4, 10:21, experimental [2] expanded [2] expressing [1] -28:26, 29:16, 68:12, 35:17, 38:1, 40:25, 192:6, 240:23 12:10, 14:6 161:18 53:2, 59:17, 59:21, **expanding** [2] - 7:5, expert [13] - 42:8, excessive [1] - 162:7 expression [1] -74:13, 75:22, 88:21, 46:20, 54:19, 57:23, 220:3 Exchange [1] - 8:18 89:8, 96:22, 97:24, 59:16, 61:27, 71:14, expansion [5] - 15:2, expressly [3] -Exchequer [2] -109:22, 110:12, 88:18, 97:8, 123:14, 81:10, 104:9, 160:14, 203:3, 203:12, 203:14 157:24, 160:4 126:18, 137:26, 182:14, 241:28, excludes [1] -160:15 extend [2] - 149:8, 142:20, 142:24, 246:12 **Expansion** [1] - 14:7 199:22 229:29 142:28, 147:1, 149:1, expertise [5] - 5:14, expect [14] - 7:27, extended [4] - 70:26, exclusion [23] -149:2, 158:22, 159:3, 42:10, 78:19, 124:23, 21:18, 21:25, 28:29, 96:8, 131:12, 228:26 114:19, 199:5, 163:3, 163:8, 163:11, 31:2, 35:18, 49:26, extending [1] - 229:9 199:13, 200:1, 200:6, 167:17, 170:27, experts [13] - 61:18, 52:23, 56:27, 65:4, extends [1] - 128:28 200:11, 200:12, 181:27, 199:11, 86:17, 87:3, 89:12, 65:5, 65:8, 113:17, 200:16, 208:28, extension [12] -199:28, 200:25, 119:4, 122:5, 127:18, 246:9 209:1, 211:28, 212:1, 154:3, 154:6, 225:15, 208:29, 212:16, 171:24, 172:12, expectation [1] -212:9, 212:17, 225:18, 226:8, 212:22, 212:24, 189:15, 194:24, 158:5 226:10, 226:22 212:19, 212:23, 213:13, 217:13, 202:15, 221:4 expectations [1] -227:18, 228:8, 229:4, 212:24, 213:24, 244:14 explain [6] - 21:13, 18:25 229:10, 229:24 213:26, 213:28, Evidence [1] - 163:2 22:23, 73:9, 173:29, expected [18] - 8:2, 214:1, 214:6 extensions [1] evolution [1] - 56:28 189:15, 225:4 11:5, 13:23, 14:11, Excuse [5] - 47:1, 160:16 evolves [1] - 95:24 explained [10] - 28:6, 15:7, 17:19, 19:4, extensive [4] -196:3, 231:26, evolving [1] - 14:19 54:1, 63:8, 63:11, 19:8, 28:26, 33:22, 239:18, 242:15 36:15, 42:27, 178:19,

extent [3] - 70:4, 182:6, 224:12 external [2] - 145:16, 217:26 extra [3] - 189:5, 190:12, 191:24 extraction [1] -216:25 extracts [2] - 127:10, 137:6 Extracts [1] - 160:26 extraordinarily [1] extraordinary [2] -88:4, 171:12 extremely [6] -26:17, 50:27, 130:1, 171:18, 183:19, 235:24 Exxon [6] - 191:18, 191:19, 222:13, 223:16, 223:24, 236:22 ExxonMobil [13] -42:20, 140:1, 140:4, 140:9, 140:13, 140:16, 166:20, 166:23, 167:2, 167:9, 184:5, 184:14, 184:18

204:15

F

fabrication [1] -129:3 face [6] - 12:24, 26:24 40:8 51:4 58:17, 140:20 faced [2] - 51:1, 145:15 faces [3] - 28:23, 51:5, 136:15 facets [1] - 37:18 facilitate [8] - 145:6, 145:9, 148:12, 162:3, 166:8, 196:25, 211:11. 216:24 facilities [48] - 12:7. 25:8, 31:11, 31:13, 31:14, 51:10, 69:28, 100:10, 101:22, 102:27, 105:7, 107:8, 107:12, 109:18, 125:5, 125:8, 126:13, 126:19, 126:20, 128:4, 130:7, 130:14, 132:15, 136:3, 141:4, 155:27, 160:22, 161:5, 161:8, 171:28, 175:15, 176:9, 194:8, 194:12, 197:12, 199:3, 204:11, 204:14, 209:12, 209:13, 209:16, 209:23, 209:27, 212:6, 212:7, 220:8, 234:25 facility [30] - 9:14, 24:12, 35:6, 54:4, 55:29. 74:15. 107:17. 110:2, 123:8, 128:22, 129:18, 129:20, 130:17, 134:26, 135:26, 136:8, 145:4, 147:9, 160:16, 175:14, 175:15, 176:18, 176:29, 178:19, 179:19, 190:7, 192:13, 244:21, 245:11, 245:21 facing [2] - 98:25, 137:9 fact [26] - 22:19, 30:3, 32:12, 34:11, 41:22, 43:27, 45:17, 46:1, 56:20, 58:6, 63:9, 63:16, 63:21, 66:11, 66:29, 69:5, 70:17, 75:22, 77:2, 78:15, 138:20, 163:26, 175:11, 182:2, 186:11, 197:6 factor [5] - 13:7, 17:6, 17:18, 19:10, 100:18 factories [1] - 118:10 factors [7] - 11:25, 18:3, 18:14, 108:28. 127:24, 127:28, 150:16 factory [2] - 235:5, 235:6 facts [3] - 181:1,

181:3, 219:21 failed [4] - 222:13, 222:17, 232:18, 233:23 failure [3] - 68:29, 130:5, 223:14 failures [3] - 50:28, 87:13, 134:21 Fair [1] - 121:24 fair [12] - 50:27, 51:19, 51:27, 52:2, 70:22, 79:8, 89:25, 177:23, 196:13, 203:27, 211:26, 241:18

fairly [2] - 39:26, 82:21 faith [1] - 119:3 fall [4] - 13:29, 97:9, 128:15, 194:2 Fall [4] - 43:25, 47:28, 48:4, 49:24 fallen [1] - 29:12 falling [3] - 12:24, 15:3, 63:15 Falls [1] - 43:15 familiar [10] - 78:5, 79:11, 79:12, 80:22, 98:2, 98:29, 128:4, 176:7, 180:2, 216:16 far [30] - 9:16, 48:8, 54:10, 59:18, 61:18, 61:21, 72:16, 76:24, 81:6, 81:15, 87:5, 91:26, 108:1, 108:9, 110:24, 122:13, 129:21, 154:9, 178:17, 193:22, 206:17, 206:19, 207:8, 211:2, 218:4, 226:14, 229:25, 234:20, 237:6 Far [3] - 14:13, 19:28, 70:5 farm [2] - 88:13, 88:25 farmers [1] - 108:24 farms [1] - 137:4 fast [1] - 62:28 fatigue [1] - 134:19 fault [1] - 86:21 fauna [1] - 162:22 favour [7] - 117:26, 121:15, 121:26, 141:3, 198:8, 219:25, 234:12 favourable [2] -100:18, 100:25 favours [2] - 34:26, 95:12 feasibility [3] -111:28, 178:27, 229:10 feasible [11] - 23:8, 40:9, 83:3, 154:4, 163:5, 177:15, 177:20, 187:26, 188:2, 192:3, 226:8 feature [2] - 131:6, 134:14 features [2] - 162:22, 162:23 February [1] - 63:12

86:19 federal [2] - 49:5, 50:13 feed [1] - 244:3 feedback [1] -205:25 feeds [1] - 77:8 fees [2] - 27:20, 80:28 feet [11] - 9:21, 12:11, 15:7, 39:15, 74:16, 74:19, 92:29, 192:15, 192:19, 192:23 fell [1] - 118:8 fellow [1] - 125:28 Fellow [1] - 142:1 felt [1] - 234:14 fender [1] - 126:26 FERC [4] - 44:17, 48:20, 48:22, 49:1 ferry [1] - 161:8 few [14] - 10:22, 29:10, 39:6, 42:28, 59:2, 78:27, 128:12, 134:5, 166:7, 168:11, 171:24, 195:7, 211:27, 215:1 field [43] - 14:2, 14:7, 24:13, 27:25, 76:19, 77:19, 77:22, 110:21, 112:17, 123:3, 123:13, 123:19, 138:4, 138:22, 171:22, 172:27, 173:8, 173:25, 174:1, 174:16, 175:5, 175:21, 175:22, 175:27, 176:9, 176:16, 176:19, 177:1, 177:6, 177:22, 185:16, 186:20, 186:21, 187:29, 188:9, 188:11, 188:23, 188:24, 188:29, 189:25, 192:24, 193:7 Field [6] - 10:1, 110:26, 111:26, 111:27, 187:1, 217:20 fields [16] - 13:14, 33:24, 33:25, 76:15, 77:1, 123:4, 177:22, 181:23, 185:16, 185:21, 187:16, 187:17, 189:23, 195:25, 196:6 Figure [1] - 15:12 figure [11] - 15:16, 40:2, 101:14, 106:4,

134:23, 149:6. 158:16, 236:16, 236:18, 236:20 figures [10] - 12:13, 41:6, 132:4, 132:5, 167:23, 169:15, 169:16, 169:25, 170:6, 237:1 file [3] - 65:24, 160:28 filed [4] - 41:4, 41:5, 41:7. 130:13 filing [3] - 32:3, 50:12, 50:23 fill [1] - 185:25 filled [1] - 193:24 final [6] - 17:6, 37:21, 62:2, 64:21, 65:21, 92:7 finalisation [1] - 49:4 Finally [5] - 29:12, 34:10, 36:23, 84:17, 112:29 finally [2] - 27:12, 222:2 finance [3] - 9:8, 16:5, 171:29 financial [14] - 6:22, 32:3, 32:5, 41:2, 70:16, 72:9, 72:10, 72:13, 72:17, 72:19, 72:25, 73:6, 73:11, 73:12 financing [2] - 8:1, findings [4] - 45:15, 45:19, 45:24, 45:29 fine [3] - 83:17, 182:5, 196:16 fingertips [1] - 87:21 finish [4] - 47:2, 227:27, 234:4, 237:16 finished [3] - 4:11, 240:7, 242:16 FINUCANE [2] -2:15, 2:19 fire [6] - 34:4, 34:23, 77:11, 132:8, 223:15, 223:17 fired [6] - 34:27, 240:13, 240:14, 240:16, 242:28, 242:29 firm [3] - 20:28, 70:26, 142:11 firmly [1] - 91:22 First [6] - 7:16, 12:21, 36:4, 57:23,

124:15, 215:3

first [19] - 16:18,

45:2, 51:25, 86:13,

Federal [5] - 30:20,

66:25, 79:11, 80:7, 80:27, 83:18, 88:16, 99:18, 101:7, 128:16, 135:6, 166:17, 181:15, 187:7, 196:19, 207:26, 211:16, 215:15 Firstly [2] - 39:7, 172:26 Fisher [1] - 160:11 fit [6] - 11:16, 19:23, 45:12, 198:12, 198:15, 208:15 fits [5] - 127:27, 198:22, 198:24, 203:22, 210:12 fitting [1] - 161:15 FITZGERALD [4] -202:28, 203:10, 204:29, 205:5 FITZSIMONS [1] -2:9 five [13] - 49:26, 49:28, 52:1, 93:12, 96:15, 113:28, 133:18, 160:20, 161:8, 165:19, 186:19, 219:16, 223:19 fix [2] - 71:20, 71:22 fixed [7] - 66:21, 70:25, 72:3, 128:16, 133:24, 186:19, 186:22 fixing [1] - 72:27 flare [1] - 176:25 flared [2] - 34:12, 238:9 flaring [1] - 238:12 flat [1] - 240:29 fleet [5] - 124:29, 127:18, 131:16, 132:25, 134:9 flexibility [4] - 15:27, 17:23, 74:14, 193:22 Flexibility [1] - 18:23 flexible [8] - 18:19, 25:21, 131:19, 131:23, 132:17, 133:20, 134:17, 134:27 floating [8] - 128:19, 130:6, 130:8, 130:11, 130:23, 131:7, 133:24, 179:4 Floating [1] - 128:20 floor [2] - 128:27, flora [1] - 162:22

Flow [1] - 132:2

flow [9] - 9:5, 21:18, 57:7, 74:2, 110:3, 135:27, 187:27, 188:4, 192:28 flowing [2] - 28:20, 88:2 flows [2] - 57:10, 134:16 fluctuate [1] - 69:16 fluctuating [1] -70:28 fluctuation [1] - 71:6 fluctuations [2] -66:18. 194:5 focus [2] - 11:2, 17:19 focussed [2] - 13:22, 17:14 folks [1] - 89:23 followed [1] - 113:3 following [14] - 1:22, 7:5, 29:26, 63:3, 63:27, 101:17, 102:1, 127:10, 137:6, 160:20, 160:27, 202:21, 233:12, 244:19 follows [8] - 51:20, 63:4, 99:23, 105:9, 110:8, 137:22, 148:10, 161:2 FOLLOWS [11] - 4:1, 4:19, 39:1, 97:16, 114:7, 115:6, 117:21, 124:9, 141:22, 165:28, 166:15 foot [1] - 150:17 footprint [1] - 17:11 FOR [1] - 2:8 for...as [1] - 198:19 force [5] - 6:9, 16:13, 66:16, 67:12, 73:22 forces [6] - 11:7, 11:22, 17:27, 68:25, 68:27, 70:10 forecasting [1] -11:11 forecasts [5] - 11:6. 11:12, 26:21, 27:28, 29:8 foreign [2] - 157:1, 190:4 Foreign [1] - 5:19 foresee [1] - 197:7 foreseen [1] - 40:20 foreshore [1] -230:21

forgive [1] - 197:19

Forgive [1] - 235:26

form [7] - 68:22,

68:23, 108:24, 144:6, 148:24, 154:13, 194:8 formally [2] - 62:12, 213:20 formation [1] - 174:2 formed [1] - 5:29 former [2] - 59:18, 125:26 formulation [2] -195:6, 228:22 forth [1] - 88:3 forthcoming [1] -98:1 Fortunately [2] -18:2, 86:23 fortune [1] - 223:28 forum [3] - 118:16, 118:22, 207:14 forward [14] - 35:1, 40:26, 73:11, 95:16, 180:29, 204:11, 209:28, 217:27, 218:10, 219:9, 219:29, 220:9, 226:28, 243:26 fossil [8] - 12:28, 14:16, 17:11, 36:17, 239:4, 240:6, 241:10, 244:6 foundation [1] -32:24 founding [1] - 81:20 four [18] - 19:2, 40:15, 40:21, 49:26, 49:28, 52:14, 52:15, 52:19, 60:7, 88:6, 88:15, 89:1, 93:12, 102:10, 102:13, 151:13, 215:12, 215:28 fourth [1] - 168:4 Fox [11] - 87:23, 87:24, 90:29, 93:18, 94:18, 94:25, 95:18, 95:24, 183:28, 220:20, 245:29 FOX [14] - 87:24, 89:2, 91:1, 91:5, 92:20, 94:26, 183:29, 184:22, 220:21, 221:2, 222:2, 246:2, 246:19, 246:24 Foynes [19] - 93:11, 94:17, 106:11, 108:14, 119:14, 125:23, 159:23, 160:8, 160:15, 160:16, 160:19, 161:5, 161:13,

200:22, 202:16, 203:4, 229:18 fractured [1] -216:23 framework [5] -112:24, 142:22, 149:17, 152:18, 157:3 Frameworks [1] -151:16 France [4] - 11:27, 52:10, 67:5, 67:6 Frank [1] - 47:23 Frankly [1] - 83:28 Franks [5] - 139:5. 149:2, 163:16, 199:11, 199:28 free [11] - 24:25, 45:9, 67:13, 111:27, 134:20, 238:28. 239:13, 239:20, 241:11, 241:16, 241:19 freebie [1] - 84:28 freely [1] - 70:3 freezing [1] - 216:8 frequent [1] - 178:16 frequently [1] -128:8 friend [1] - 235:18 Friends [3] - 110:18, 112:11, 138:25 friends [1] - 173:17 front [5] - 46:11, 56:13, 81:23, 89:18, 217:17 frown [1] - 57:25 frozen [1] - 89:19 FSRU [9] - 130:6, 130:9, 130:13, 130:21, 131:2, 131:7, 132:13, 133:3, 179:6 FSRUs [3] - 128:20, 139:16, 139:22 fuel [11] - 9:22, 12:27, 13:8, 15:5, 17:9, 17:20, 72:5, 158:11, 239:4, 240:6, 244:6 fueled [1] - 13:7 fuels [8] - 12:28, 14:15, 14:16, 17:11, 36:17, 36:19, 95:3, 241:10 Fugro [1] - 126:3 Fugro-Seacore [1] -

fulfil [3] - 59:4,

fulfilled [1] - 126:25

full [15] - 35:7, 41:10,

102:10, 156:3

43:7. 63:10. 88:27. 136:20, 138:17, 181:29, 191:27, 193:14, 193:16, 197:12, 201:1, 201:20, 206:17 fully [4] - 49:7, 55:11, 67:11, 135:10 function [5] - 8:6, 19:13, 20:25, 51:23, 73:17 functional [2] -144:1, 144:18 functionally [1] -57:29 functioning [1] -152:9 functions [2] - 152:4, 194:16 fund [4] - 32:14, 35:21, 62:4, 64:19 funded [3] - 7:26, 64:1, 157:24 funding [3] - 35:26, 62:8. 64:5 funds [5] - 7:26, 9:9, 32:9, 159:1, 159:12 furthering [1] -154:19 Furthermore [1] future [30] - 14:3, 19:16, 34:27, 35:17, 66:16, 66:17, 66:22, 68:15, 69:15, 71:21, 71:22, 84:3, 93:2, 93:7, 137:27, 143:12, 149:17, 155:15, 157:7, 160:5, 160:12, 176:27, 187:2, 210:14, 210:26, 211:2, 216:12, 229:12, 230:14 Future [1] - 25:6 future" [1] - 110:13

G

gains [1] - 17:16 Galway [1] - 102:4 games [1] - 172:21 gap [1] - 56:26 garage [1] - 120:21 garden [1] - 119:27 GAS [1] - 1:5 gas [388] - 5:12, 5:15, 6:15, 7:25, 8:8, 8:10, 8:15, 8:17, 8:23, 9:4, 9:22, 9:27, 11:29,

161:17, 197:16,

12:22, 12:25, 13:1,	111:7, 111:19, 118:1,	220:15, 225:18,	generations [3] -	139:21
13:5, 13:7, 13:8,	119:5, 119:15, 123:3,	225:29, 226:3, 226:8,	14:3, 157:7, 176:28	GORDON [2] - 4:18,
13:14, 13:17, 13:22,	123:12, 125:4, 125:5,	226:11, 226:14,	Geneva [1] - 63:4	38:6
13:24, 13:28, 14:1,	125:6, 125:28, 129:1,	226:20, 226:23,	Genoa [1] - 139:11	Gordon [1] - 4:23
14:5, 14:6, 14:7,	129:28, 130:19,	227:21, 228:1, 228:6,	gentle [1] - 129:11	governance [1] -
14:10, 14:12, 14:22,	132:11, 133:14,	228:25, 229:1, 229:4,	gentleman [1] -	125:7
15:12, 15:13, 15:21,	133:20, 133:27,	229:8, 229:9, 229:10,	168:15	governing [2] -
15:22, 16:25, 16:28,	134:7, 134:10,	229:19, 238:8, 238:9,	gentlemen [1] -	31:21, 31:24
17:4, 17:10, 17:18,	134:15, 135:3, 138:2,	238:12, 240:13,	170:8	Government [40] -
19:9, 19:13, 19:16,	138:3, 138:15,	242:29, 243:13,	Gentlemen [1] - 4:22	14:1, 17:1, 20:11,
20:7, 20:11, 20:20,	139:20, 139:24,	243:19, 243:23,	• •	
20:23, 20:24, 21:17,	145:25, 150:23,	243:29, 244:2, 244:3,	geographical [1] -	25:3, 25:5, 25:7, 25:9,
	153:3, 153:7, 153:10,		12:13	25:12, 25:16, 27:28,
21:28, 22:10, 22:24,		244:6, 244:7, 244:22,	geography [1] -	34:25, 36:11, 36:12,
22:25, 22:26, 23:6,	153:11, 154:3, 154:7,	244:22, 245:12,	141:2	36:29, 38:22, 50:13,
23:10, 23:26, 24:23,	154:10, 154:17,	245:12, 245:21	geological [2] -	56:16, 68:7, 68:28,
25:8, 25:17, 25:18,	158:17, 159:4,	Gas [22] - 14:7, 25:4,	162:23, 175:12	77:6, 77:15, 119:3,
25:20, 25:29, 26:8,	163:26, 170:20,	26:28, 29:18, 33:17,	geologist [2] -	122:10, 165:7,
26:10, 26:15, 26:17,	170:23, 174:20,	42:20, 58:29, 72:20,	172:11, 173:15	173:17, 176:24,
26:19, 26:28, 27:1,	175:5, 175:10,	86:15, 86:29, 87:16,	geologists [2] -	179:21, 180:28,
27:2, 27:5, 27:7, 27:9,	175:21, 175:27,	100:29, 110:25,	173:5, 173:23	189:27, 190:20,
27:10, 27:12, 27:13,	176:2, 176:4, 176:6,	111:25, 111:27,	geomorphological	190:22, 191:9, 195:3,
27:18, 27:23, 28:2,	176:9, 176:10,	125:12, 154:13,	[1] - 162:23	214:28, 217:25,
28:13, 29:2, 29:4,	176:11, 176:16,	181:28, 187:1,		243:13, 243:14,
29:6, 29:8, 29:13,	176:17, 176:18,	194:27, 195:2, 217:20	Geophysics [1] - 5:5	244:14, 244:16
33:13, 33:15, 33:23,	176:19, 176:20,	gas' [2] - 17:6, 17:13	germane [1] - 204:21	government [3] -
33:25, 34:3, 34:12,	176:23, 176:27,	gas-fired [1] - 34:27	Germany [3] - 12:5,	14:4, 237:14, 242:11
34:14, 34:23, 34:27,	177:1, 177:6, 177:22,	gases [4] - 17:7,	67:7	
36:9, 36:20, 36:29,	178:11, 179:19,	•	Gerry [1] - 224:12	Government's [5] -
37:1, 37:3, 37:4, 39:9,	181:11, 181:13,	39:24, 55:8, 61:22	ghost [1] - 167:27	24:9, 55:26, 56:7,
39:12, 39:20, 39:23,	181:21, 181:22,	gasified [1] - 191:25	giant [2] - 14:6,	142:27, 195:10
		gasify [1] - 192:12	204:23	Governments [1] -
39:27, 40:3, 40:4,	182:29, 183:6, 183:8,	gasoline [1] - 79:2	given [23] - 18:20,	194:12
40:5, 40:7, 40:10,	184:2, 185:10,	Gassi [1] - 9:27	21:1, 46:8, 52:16,	governs [1] - 237:24
40:12, 53:10, 53:13,	185:13, 185:15,	gassing [1] - 210:6	61:11, 77:6, 99:21,	gradual [1] - 150:19
54:14, 55:6, 55:10,	185:16, 185:18,	gateway [3] - 152:10,	106:12, 121:9, 141:4,	Grain [5] - 28:15,
55:11, 57:5, 57:13,	185:20, 185:21,	152:15, 157:3	142:24, 143:24,	58:14, 65:18, 135:11,
64:28, 64:29, 66:27,	185:24, 186:4, 186:6,	gathered [1] - 194:21	160:27, 163:2, 163:4,	220:15
66:29, 67:1, 67:3,	186:17, 186:20,	GBS [8] - 128:25,	170:27, 172:13,	granted [2] - 87:27,
67:5, 67:7, 67:22,	186:21, 186:26,	129:4, 129:10,	170.27, 172.10,	
67:23, 68:1, 68:15,		120.7, 120.10,	174.27 177.15	204:8
	186:27, 187:3,		174:27, 177:15, 201:17, 213:29	204:8
68:17, 68:18, 68:22,	186:27, 187:3, 187:14, 187:15,	129:14, 130:17,	201:17, 213:29,	204:8 granting [1] - 37:2
68:17, 68:18, 68:22, 68:23, 68:24, 70:1,		129:14, 130:17, 131:6, 132:12, 133:3	201:17, 213:29, 220:8, 239:22	204:8 granting [1] - 37:2 Graphically [1] -
	187:14, 187:15,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12,	204:8 granting [1] - 37:2 Graphically [1] - 12:12
68:23, 68:24, 70:1,	187:14, 187:15, 187:16, 187:17,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24,	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29,	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8
68:23, 68:24, 70:1, 70:17, 70:18, 70:22,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2,
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12,	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2,	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25,	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] -	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23,
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] - 65:15, 68:28, 70:25,	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14, 79:3, 79:10, 79:13,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23, 189:25, 189:27,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] -	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14 Glin [1] - 121:13	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23,
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14, 79:3, 79:10, 79:13, 79:15, 81:24, 82:2,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23, 189:25, 189:27, 189:28, 190:4,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] - 65:15, 68:28, 70:25, 71:19, 71:20, 73:3, 131:20, 136:25,	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14 Glin [1] - 121:13 global [17] - 6:26,	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23, 21:14, 54:19, 61:29,
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14, 79:3, 79:10, 79:13, 79:15, 81:24, 82:2, 86:3, 86:5, 86:6,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23, 189:25, 189:27, 189:28, 190:4, 190:12, 191:3, 191:6,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] - 65:15, 68:28, 70:25, 71:19, 71:20, 73:3,	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14 Glin [1] - 121:13 global [17] - 6:26, 8:14, 11:3, 12:10,	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23, 21:14, 54:19, 61:29, 78:25, 82:18, 91:12,
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14, 79:3, 79:10, 79:13, 79:15, 81:24, 82:2, 86:3, 86:5, 86:6, 86:23, 87:6, 92:21,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23, 189:25, 189:27, 189:28, 190:4, 190:12, 191:3, 191:6, 191:10, 191:24,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] - 65:15, 68:28, 70:25, 71:19, 71:20, 73:3, 131:20, 136:25, 176:26, 193:29 generate [3] -	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14 Glin [1] - 121:13 global [17] - 6:26, 8:14, 11:3, 12:10, 12:18, 12:26, 14:19,	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23, 21:14, 54:19, 61:29, 78:25, 82:18, 91:12, 118:15, 163:24,
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14, 79:3, 79:10, 79:13, 79:15, 81:24, 82:2, 86:3, 86:5, 86:6, 86:23, 87:6, 92:21, 93:8, 93:10, 94:2,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23, 189:25, 189:27, 189:28, 190:4, 190:12, 191:3, 191:6, 191:10, 191:24, 191:27, 192:28,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] - 65:15, 68:28, 70:25, 71:19, 71:20, 73:3, 131:20, 136:25, 176:26, 193:29	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14 Glin [1] - 121:13 global [17] - 6:26, 8:14, 11:3, 12:10, 12:18, 12:26, 14:19, 14:21, 16:5, 17:9,	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23, 21:14, 54:19, 61:29, 78:25, 82:18, 91:12, 118:15, 163:24, 186:25, 190:20,
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14, 79:3, 79:10, 79:13, 79:15, 81:24, 82:2, 86:3, 86:5, 86:6, 86:23, 87:6, 92:21, 93:8, 93:10, 94:2, 94:3, 94:25, 94:28,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23, 189:25, 189:27, 189:28, 190:4, 190:12, 191:3, 191:6, 191:10, 191:24, 191:27, 192:28, 193:8, 193:13,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] - 65:15, 68:28, 70:25, 71:19, 71:20, 73:3, 131:20, 136:25, 176:26, 193:29 generate [3] -	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14 Glin [1] - 121:13 global [17] - 6:26, 8:14, 11:3, 12:10, 12:18, 12:26, 14:19, 14:21, 16:5, 17:9, 17:22, 33:4, 39:13, 98:5, 238:13, 244:22,	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23, 21:14, 54:19, 61:29, 78:25, 82:18, 91:12, 118:15, 163:24, 186:25, 190:20, 197:17
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14, 79:3, 79:10, 79:13, 79:15, 81:24, 82:2, 86:3, 86:5, 86:6, 86:23, 87:6, 92:21, 93:8, 93:10, 94:2, 94:3, 94:25, 94:28, 95:2, 95:5, 96:7, 98:1,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23, 189:25, 189:27, 189:28, 190:4, 190:12, 191:3, 191:6, 191:10, 191:24, 191:27, 192:28, 193:8, 193:13, 193:15, 193:21,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] - 65:15, 68:28, 70:25, 71:19, 71:20, 73:3, 131:20, 136:25, 176:26, 193:29 generate [3] - 149:25, 150:2, 156:29	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14 Glin [1] - 121:13 global [17] - 6:26, 8:14, 11:3, 12:10, 12:18, 12:26, 14:19, 14:21, 16:5, 17:9, 17:22, 33:4, 39:13, 98:5, 238:13, 244:22, 245:12	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23, 21:14, 54:19, 61:29, 78:25, 82:18, 91:12, 118:15, 163:24, 186:25, 190:20, 197:17 greater [6] - 33:29,
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14, 79:3, 79:10, 79:13, 79:15, 81:24, 82:2, 86:3, 86:5, 86:6, 86:23, 87:6, 92:21, 93:8, 93:10, 94:2, 94:3, 94:25, 94:28, 95:2, 95:5, 96:7, 98:1, 98:6, 98:10, 98:25,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23, 189:25, 189:27, 189:28, 190:4, 190:12, 191:3, 191:6, 191:10, 191:24, 191:27, 192:28, 193:8, 193:13, 193:15, 193:21, 194:1, 194:9, 194:15,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] - 65:15, 68:28, 70:25, 71:19, 71:20, 73:3, 131:20, 136:25, 176:26, 193:29 generate [3] - 149:25, 150:2, 156:29 generated [2] -	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14 Glin [1] - 121:13 global [17] - 6:26, 8:14, 11:3, 12:10, 12:18, 12:26, 14:19, 14:21, 16:5, 17:9, 17:22, 33:4, 39:13, 98:5, 238:13, 244:22, 245:12 globally [1] - 30:8	204:8 granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23, 21:14, 54:19, 61:29, 78:25, 82:18, 91:12, 118:15, 163:24, 186:25, 190:20, 197:17 greater [6] - 33:29, 98:5, 129:7, 156:16, 191:17, 218:21
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14, 79:3, 79:10, 79:13, 79:15, 81:24, 82:2, 86:3, 86:5, 86:6, 86:23, 87:6, 92:21, 93:8, 93:10, 94:2, 94:3, 94:25, 94:28, 95:2, 95:5, 96:7, 98:1, 98:6, 98:10, 98:25, 99:5, 99:21, 100:13,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23, 189:25, 189:27, 189:28, 190:4, 190:12, 191:3, 191:6, 191:10, 191:24, 191:27, 192:28, 193:8, 193:13, 193:15, 193:21, 194:1, 194:9, 194:15, 194:18, 195:15,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] - 65:15, 68:28, 70:25, 71:19, 71:20, 73:3, 131:20, 136:25, 176:26, 193:29 generate [3] - 149:25, 150:2, 156:29 generated [2] - 36:17, 149:1	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14 Glin [1] - 121:13 global [17] - 6:26, 8:14, 11:3, 12:10, 12:18, 12:26, 14:19, 14:21, 16:5, 17:9, 17:22, 33:4, 39:13, 98:5, 238:13, 244:22, 245:12 globally [1] - 30:8 glove [1] - 127:28	granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23, 21:14, 54:19, 61:29, 78:25, 82:18, 91:12, 118:15, 163:24, 186:25, 190:20, 197:17 greater [6] - 33:29, 98:5, 129:7, 156:16, 191:17, 218:21 greatest [1] - 145:15
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14, 79:3, 79:10, 79:13, 79:15, 81:24, 82:2, 86:3, 86:5, 86:6, 86:23, 87:6, 92:21, 93:8, 93:10, 94:2, 94:3, 94:25, 94:28, 95:2, 95:5, 96:7, 98:1, 98:6, 98:10, 98:25, 99:5, 99:21, 100:13, 100:15, 100:19,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23, 189:25, 189:27, 189:28, 190:4, 190:12, 191:3, 191:6, 191:10, 191:24, 191:27, 192:28, 193:8, 193:13, 193:15, 193:21, 194:1, 194:9, 194:15, 195:25, 195:26,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] - 65:15, 68:28, 70:25, 71:19, 71:20, 73:3, 131:20, 136:25, 176:26, 193:29 generate [3] - 149:25, 150:2, 156:29 generated [2] - 36:17, 149:1 generating [2] - 13:4, 36:13	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14 Glin [1] - 121:13 global [17] - 6:26, 8:14, 11:3, 12:10, 12:18, 12:26, 14:19, 14:21, 16:5, 17:9, 17:22, 33:4, 39:13, 98:5, 238:13, 244:22, 245:12 globally [1] - 30:8 glove [1] - 127:28 goals [2] - 11:22,	granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23, 21:14, 54:19, 61:29, 78:25, 82:18, 91:12, 118:15, 163:24, 186:25, 190:20, 197:17 greater [6] - 33:29, 98:5, 129:7, 156:16, 191:17, 218:21 greatest [1] - 145:15 Greece [1] - 12:5
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14, 79:3, 79:10, 79:13, 79:15, 81:24, 82:2, 86:3, 86:5, 86:6, 86:23, 87:6, 92:21, 93:8, 93:10, 94:2, 94:3, 94:25, 94:28, 95:2, 95:5, 96:7, 98:1, 98:6, 98:10, 98:25, 99:5, 99:21, 100:13, 100:15, 100:19, 104:4, 104:5, 104:6,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23, 189:25, 189:27, 189:28, 190:4, 190:12, 191:3, 191:6, 191:10, 191:24, 191:27, 192:28, 193:8, 193:13, 193:15, 193:21, 194:1, 194:9, 194:15, 195:25, 195:26, 196:5, 216:4, 217:27,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] - 65:15, 68:28, 70:25, 71:19, 71:20, 73:3, 131:20, 136:25, 176:26, 193:29 generate [3] - 149:25, 150:2, 156:29 generated [2] - 36:17, 149:1 generating [2] - 13:4, 36:13 generation [6] -	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14 Glin [1] - 121:13 global [17] - 6:26, 8:14, 11:3, 12:10, 12:18, 12:26, 14:19, 14:21, 16:5, 17:9, 17:22, 33:4, 39:13, 98:5, 238:13, 244:22, 245:12 globally [1] - 30:8 glove [1] - 127:28 goals [2] - 11:22, 20:8	granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23, 21:14, 54:19, 61:29, 78:25, 82:18, 91:12, 118:15, 163:24, 186:25, 190:20, 197:17 greater [6] - 33:29, 98:5, 129:7, 156:16, 191:17, 218:21 greatest [1] - 145:15 Greece [1] - 12:5 green [1] - 17:7
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14, 79:3, 79:10, 79:13, 79:15, 81:24, 82:2, 86:3, 86:5, 86:6, 86:23, 87:6, 92:21, 93:8, 93:10, 94:2, 94:3, 94:25, 94:28, 95:2, 95:5, 96:7, 98:1, 98:6, 98:10, 98:25, 99:5, 99:21, 100:13, 100:15, 100:19, 104:4, 104:5, 104:6, 104:21, 105:26,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23, 189:25, 189:27, 189:28, 190:4, 190:12, 191:3, 191:6, 191:10, 191:24, 191:27, 192:28, 193:8, 193:13, 193:15, 193:21, 194:1, 194:9, 194:15, 194:18, 195:15, 195:25, 195:26, 196:5, 216:4, 217:27, 217:29, 218:5,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] - 65:15, 68:28, 70:25, 71:19, 71:20, 73:3, 131:20, 136:25, 176:26, 193:29 generate [3] - 149:25, 150:2, 156:29 generated [2] - 36:17, 149:1 generating [2] - 13:4, 36:13 generation [6] - 13:1, 17:10, 34:23,	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14 Glin [1] - 121:13 global [17] - 6:26, 8:14, 11:3, 12:10, 12:18, 12:26, 14:19, 14:21, 16:5, 17:9, 17:22, 33:4, 39:13, 98:5, 238:13, 244:22, 245:12 globally [1] - 30:8 glove [1] - 127:28 goals [2] - 11:22, 20:8 God [1] - 73:26	granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23, 21:14, 54:19, 61:29, 78:25, 82:18, 91:12, 118:15, 163:24, 186:25, 190:20, 197:17 greater [6] - 33:29, 98:5, 129:7, 156:16, 191:17, 218:21 greatest [1] - 145:15 Greece [1] - 12:5 green [1] - 17:7 Green [22] - 16:20,
68:23, 68:24, 70:1, 70:17, 70:18, 70:22, 71:2, 71:3, 71:4, 71:9, 71:11, 71:22, 71:28, 72:21, 74:4, 74:16, 76:15, 76:26, 76:29, 77:12, 77:13, 78:1, 78:3, 78:11, 78:14, 79:3, 79:10, 79:13, 79:15, 81:24, 82:2, 86:3, 86:5, 86:6, 86:23, 87:6, 92:21, 93:8, 93:10, 94:2, 94:3, 94:25, 94:28, 95:2, 95:5, 96:7, 98:1, 98:6, 98:10, 98:25, 99:5, 99:21, 100:13, 100:15, 100:19, 104:4, 104:5, 104:6,	187:14, 187:15, 187:16, 187:17, 187:25, 187:29, 188:3, 188:4, 188:9, 188:10, 188:11, 189:2, 189:5, 189:6, 189:11, 189:14, 189:16, 189:18, 189:20, 189:23, 189:25, 189:27, 189:28, 190:4, 190:12, 191:3, 191:6, 191:10, 191:24, 191:27, 192:28, 193:8, 193:13, 193:15, 193:21, 194:1, 194:9, 194:15, 195:25, 195:26, 196:5, 216:4, 217:27,	129:14, 130:17, 131:6, 132:12, 133:3 GBSs [1] - 128:19 General [3] - 79:24, 125:2, 144:12 general [6] - 61:12, 98:27, 98:29, 147:25, 198:26, 201:7 generally [10] - 65:15, 68:28, 70:25, 71:19, 71:20, 73:3, 131:20, 136:25, 176:26, 193:29 generate [3] - 149:25, 150:2, 156:29 generated [2] - 36:17, 149:1 generating [2] - 13:4, 36:13 generation [6] -	201:17, 213:29, 220:8, 239:22 Given [4] - 112:12, 115:15, 129:29, 134:25 glad [3] - 4:26, 38:2, 118:20 Glen [1] - 119:14 Glin [1] - 121:13 global [17] - 6:26, 8:14, 11:3, 12:10, 12:18, 12:26, 14:19, 14:21, 16:5, 17:9, 17:22, 33:4, 39:13, 98:5, 238:13, 244:22, 245:12 globally [1] - 30:8 glove [1] - 127:28 goals [2] - 11:22, 20:8	granting [1] - 37:2 Graphically [1] - 12:12 grateful [1] - 205:8 graving [2] - 129:2, 129:6 Gravity [1] - 128:18 grazing [1] - 108:25 great [12] - 14:23, 21:14, 54:19, 61:29, 78:25, 82:18, 91:12, 118:15, 163:24, 186:25, 190:20, 197:17 greater [6] - 33:29, 98:5, 129:7, 156:16, 191:17, 218:21 greatest [1] - 145:15 Greece [1] - 12:5 green [1] - 17:7

55:26, 56:7, 56:14, 135:1, 138:12 growing [11] - 14:10, 56:17, 123:2, 123:5, 14:12, 14:14, 14:15, gut [1] - 28:23 158:21, 158:25, 15:26, 17:19, 17:20, gyrating [1] - 70:28 164:9, 173:12, 40:8, 69:26, 69:28, gyrations [1] - 70:20 173:19, 180:11, 156:25 Gáis [32] - 55:11, 180:15, 180:19, grown [1] - 40:1 55:25, 55:27, 56:3, 180:24, 237:4, 237:6, growth [18] - 11:4, 56:5, 56:11, 56:15, 244:18 11:6, 17:23, 19:13, 56:21, 56:29, 57:1, greenfield [1] -143:25, 144:2, 57:2, 57:3, 57:17, 109:13 144:13, 144:19, 46:23 57:26, 58:2, 58:6, greenhouse [1] -149:20, 150:2, 150:6, 58:17, 58:19, 58:25, 33:13 151:12, 153:22, 75:3, 92:24, 157:25, Greenpeace [3] -153:27, 155:15, 188:7, 188:14, 33:19, 33:22, 34:4 156:15, 157:4, 158:16 188:16, 188:19, 126:28 Grid [2] - 94:9, 95:22 guarantee [6] -189:12, 190:21, grid [23] - 26:17, 28:24, 29:2, 63:10, 225:8, 227:3, 229:24, 137:1 68:9, 68:10, 72:28 27:10, 54:16, 54:17, 230:6 55:7, 55:11, 58:9, guaranteed [2] -Gáis' [1] - 58:23 94:11, 99:22, 100:14, 37:5, 73:14 Gáis's [3] - 96:6, 100:17, 104:3, 104:4, guaranteeing [2] -226:1, 227:18 104:5, 104:9, 104:21, 68:18, 111:21 153:12, 194:9, Guard [15] - 30:24, Н 194:10, 194:17, 31:1, 43:19, 43:27, 220:18, 240:5, 242:22 44:2, 44:18, 45:4, habitats [1] - 162:21 grid" [1] - 228:9 45:14, 45:22, 45:28, Halcrow [1] - 126:4 grids [2] - 99:5, 46:11, 46:27, 47:3, half [4] - 13:18, 49:15, 49:17 153:2 91:25, 96:13, 171:27 grievance [1] -Guard's [1] - 45:24 halt [2] - 17:8, 118:21 guess [1] - 26:9 150:18 grievances [1] guidance [1] -Hammerfest [1] -118:16 10:14 GRIFFIN [15] - 2:14, guide [1] - 5:21 hand [2] - 16:18, 39:4. 42:11. 85:14. Guide" [1] - 83:10 120:10 guided [1] - 172:23 85:28, 87:14, 120:13, handed [2] - 96:27, 121:21, 121:24, guidelines [12] -166:17, 168:10, 60:24, 131:27, handful [1] - 137:12 168:27, 169:19, 153:20, 164:3, handing [1] - 96:22 215:1, 216:13 221:23, 226:27, handled [1] - 103:3 Griffin [8] - 39:6, 226:29, 227:17, handling [4] -84:23, 85:14, 120:12, 227:25, 233:26, 235:1 61:28 102:27, 124:24, 120:13, 122:7, Guidelines [28] -141:5, 213:5 166:12, 214:29 143:2, 149:14, hands [6] - 38:21, Groningen [1] - 14:2 153:17, 153:18, 125:27, 205:9, ground [7] - 91:21, 153:24, 153:27, 211:15, 214:20, 176:21, 176:27, 153:29, 154:12, 175:10 222:19 188:5, 215:12, 154:15, 154:20, hands-on [1] -215:27, 227:27 154:22, 154:23, 125:27 grounded [1] - 131:7 154:25, 155:1, happily [1] - 85:12 grounds [2] - 35:7, 155:13, 155:20, happy [12] - 5:21, 230:12 156:2, 162:2, 163:25, 15:24, 80:20, 85:10, 165:5, 165:6, 225:5, group [5] - 35:25, 101:4, 114:28, 62:7, 170:12, 180:26, 225:13, 225:28, 118:29, 122:17, 227:15, 228:21, 213:8 230:16, 231:14 218:15, 230:27, Group [9] - 17:2, 231:29, 237:2 33:7, 64:18, 79:23, guillotine [2] harbour [1] - 230:18 170:18, 223:6 109:29, 110:6, 126:1, Harbour [10] - 6:7, 135:22, 136:7 Guinea [3] - 9:29, 30:5, 80:29, 81:9, groups [1] - 214:8 14:26, 15:1 98:17, 102:11, Gulf [6] - 13:18, grow [2] - 158:17, 224:17 102:12, 125:24, 158:18 29:29, 50:11, 134:4, HEARD [1] - 1:14

134:7, 200:24 heard [4] - 22:28, hard [12] - 35:9, 84:3, 114:27, 223:2 41:12, 41:24, 51:17, hearing [16] - 47:6, 82:10, 83:29, 84:22, 78:6, 82:12, 82:28, 110:12, 132:20, 83:7, 90:13, 91:14, 137:26, 170:18, 223:5 116:24, 163:2, 203:5, hard-arm [2] -213:9. 213:11. 132:20, 170:18 213:12, 213:20, 224:1, 234:8 harder [2] - 23:4, **HEARING** [9] - 1:1, 4:1, 4:18, 114:6, hardly [1] - 24:17 harm [1] - 126:28 117:21, 124:9, harm-arm [1] -141:22, 165:27, 246:27 hearings [1] - 30:9 harnessing [1] heat [2] - 210:8. 223:19 Harvard [1] - 5:7 heating [1] - 72:5 hate [3] - 84:27, heavily [2] - 16:17, 87:10, 246:4 Haven [25] - 19:29, 65:18, 102:7, 135:12, heavy [5] - 72:5, 135:14, 170:11, 136:26, 215:16, 215:21, 244:5 170:12, 170:16, 190:3, 191:20, hectares [4] -105:12, 147:18, 191:22, 217:19, 147:24, 148:1 218:2, 218:4, 218:5, 218:16, 218:24, hedge [3] - 66:16, 218:28, 219:5, 66:17, 73:11 220:16, 220:23, hedging [1] - 72:11 222:12, 222:21, heel [1] - 139:12 223:1, 235:19 height [2] - 88:20, Havens [3] - 224:12, 224:18, 246:13 heights [4] - 85:23, hazard [3] - 82:19, 86:2, 130:15, 130:16 126:16, 213:13 held [5] - 32:28, hazards [2] - 35:7, 58:27, 63:3, 80:7, 161:15 **HAZOPS** [5] - 61:6, helicopter [1] -61:11, 61:16, 61:24, 103:24 Hello [1] - 42:12 Head [6] - 110:25, help [5] - 98:19, 111:3, 175:5, 175:6, 154:4, 156:3, 158:4, 187:1, 217:20 226:9 head [2] - 174:25, helpful [1] - 80:16 hemisphere [1] -Health [8] - 35:12, 35:15, 112:20, Hence [1] - 98:19 199:29, 200:3, 203:4, hereby [1] - 1:21 213:4, 221:16 heritage [1] - 145:29 health [12] - 31:19, Heritage [5] -82:12, 83:15, 83:16, 108:14, 146:17, 118:28, 162:27, 146:22, 146:25, 163:13, 203:2, 214:4, 146:26 246:7, 246:10, 246:22 hesitate [1] - 79:18 Heaphys [1] - 120:21 Hess [40] - 4:24, hear [6] - 78:13, 5:10, 5:26, 5:29, 6:19, 123:22, 171:15, 7:1, 7:2, 7:9, 7:16, 177:19, 224:11, 7:17, 7:18, 7:20, 7:22, 7:23, 8:14, 8:17, 8:29,

9:1, 9:10, 9:13, 9:14,

88:19, 99:27, 129:5. 9:19, 9:26, 10:2, 10:4, 217:27 hoses [5] - 131:19, 10:8, 10:12, 29:23, 131:22, 131:23, identical [2] - 81:26, 162:27, 163:4, 163:5, 31:5, 31:8, 31:18, 132:17, 134:28 82:1 201:4 37:10, 37:12, 37:16, identification [3] impeccable [1] -HOTEL [1] - 1:17 42:16, 60:13, 79:24, hour [1] - 113:29 99:23, 104:22, 107:9 81:11 80:13, 125:17 implement [2] - 7:19, hours [1] - 98:17 identified [21] -Hess' [3] - 7:9, 8:26, 16:26, 17:3, 20:9, 195:3 house [7] - 17:7, 85:21, 85:23, 86:2, 97:7, 101:17, 104:28, implementation [2] hi [1] - 184:26 19:14, 112:22 86:8, 118:18, 123:3 106:3, 107:6, 107:11, high [13] - 13:11, 109:16, 127:26, implemented [3] -House [1] - 64:17 18:20, 21:21, 33:25, 145:1, 146:16, houses [1] - 107:2 143:10, 151:18, 71:9, 74:29, 104:3, 146:18, 147:10, 221.22 Houston [1] - 98:11 148:16, 197:1, 104:9, 130:1, 131:4, implication [7] -HSA [23] - 51:23, 132:19, 134:27, 198:18, 209:7, 26:9, 31:18, 56:20, 61:10, 61:15, 61:19, 157:19 212:18, 212:21 56:24, 60:2, 203:23 84:19. 112:23. higher [4] - 15:28, identify [8] - 98:21, implies [1] - 130:17 112:26, 139:2, 27:18, 60:10, 129:26 99:19, 105:1, 105:6, imply [1] - 146:11 202:12, 202:18, highest [3] - 16:7, 112:2, 148:22, 160:7, 202:21, 202:22, implying [1] - 167:8 60:12, 239:23 212:24 202:26, 203:26, import [15] - 11:20, highlight [1] - 153:29 203:27, 212:3, 212:4, Identify [1] - 144:4 12:8, 14:10, 16:14, identifying [5] highlights [1] - 161:1 212:28, 220:26, 17:25, 26:27, 28:27, 96:27, 97:20, 99:11, highly [11] - 7:24, 221:1, 221:12, 224:9 30:15, 30:22, 42:17, 99:13, 125:19 22:7, 23:20, 51:14, 69:25, 81:21, 110:26, HSE [4] - 221:16, 76:24, 78:11, 129:28, idle [1] - 118:2 150:23, 191:11 221:18, 222:13, 224:9 130:3, 177:10, hub [8] - 96:9, 152:2, ignore [2] - 31:6, importance [8] -183:15, 214:17 154:4, 157:3, 225:19, 70:10 10:17, 14:21, 108:18, hire [3] - 223:1, 226:8, 228:12, 229:11 **II** [6] - 112:23, 158:3, 162:22, 223:2, 223:9 112:25, 201:3, hub" [1] - 226:23 162:23, 163:3, 163:26 Hiroshima [1] -213:29, 221:10, important [3] - 92:2, **hub..** [1] - 229:5 233:28 219:16 92:25, 106:28 huge [5] - 94:13, HIS [1] - 97:15 illegally [1] - 205:22 119:8, 136:15, importation [8] -History [1] - 113:11 illustrated [1] - 132:9 42:16, 43:8, 50:9, 211:13, 240:28 history [2] - 10:3, HUGH[1] - 2:8 illustrates [3] -69:14, 71:20, 243:19, 134:25 31:20, 65:27, 66:8 243:23, 244:7 hull [2] - 46:4, 130:9 hit [2] - 46:24, 51:12 illustrative [1] imported [5] - 36:18, human [1] - 32:29 hold [8] - 34:16, 192:27 36:20, 36:21, 86:3, hydrocarbon [2] -59:20, 83:24, 124:15, imagine [3] - 74:4, 190:9 33:12, 61:22 180:10, 185:19, Hydrodata [1] -74:21, 216:18 **importer** [1] - 68:12 imbalanced [1] -191:25, 233:4 importers [1] - 11:28 26:16 Importers [1] - 6:13 Hold [3] - 180:13, hypothetical [7] imbedded [1] - 73:17 192:4, 234:3 importing [4] -212:15, 212:22, holding [1] - 236:5 immediate [3] -27:19, 185:23, 189:2, 213:23, 213:25, holds [1] - 9:13 213:27, 213:29, 127:22, 150:1, 211:13 189:5 hole [3] - 223:12, 214:18 immense [1] imports [4] - 11:23, 223:13, 223:22 171:17 11:26, 16:18, 98:9 impose [2] - 66:26, I Impact [6] - 6:24, Hollys [1] - 120:29 home [1] - 41:26 105:3, 106:18, 113:9, 200:1 imposed [1] - 65:19 honest [1] - 120:24 142:7, 142:15 IDA [2] - 107:22, impact [21] - 53:4, honestly [2] impossibility [1] -108:2 103:15, 130:2, 139:3, 67:19 119:26, 224:2 idea [11] - 53:26, hook [1] - 96:20 145:18, 162:6, 162:7, impossible [1] -93:13, 120:10, 136:4, 162:13, 162:27, Hook [3] - 135:12, 67:28 190:7, 190:15, 163:7, 163:12, impression [7] -135:15, 170:14 213:25, 213:27, 163:13, 201:3, 202:8, 173:25, 180:22, hope [4] - 37:4, 218:7, 223:20, 236:29 224:13, 230:14, 180:23, 181:5, 120:3, 120:16, 235:19 ideal [7] - 102:29, 230:15, 230:19. 231:28, 234:11, hopefully [4] - 4:28, 103:13, 107:28, 242:24, 244:21, 234:14 23:14, 54:3, 90:26 112:3, 122:4, 140:25, improve [3] - 227:20, horizon [3] - 19:3, 239:1 impacted [1] - 104:1 244:22, 245:12 40:16, 88:27 ideas [2] - 181:1, impacts [8] - 48:25,

hose [1] - 134:17

156:23, 159:9, 165:9 improvements [2] -17:16, 153:2 improving[1] -16:15 **IN** [1] - 1:7 in-time [1] - 160:5 inappropriate [4] -35:6, 144:8, 148:25, 187:9 inappropriately [1] -34:15 incentive [2] - 22:2, 32:25 inch [2] - 104:7, 170:18 incident [4] - 30:12, 73:23, 98:18, 134:22 incidentally [1] -179:22 incidents [1] - 30:6 include [12] - 19:1, 40:14, 49:4, 117:8, 128:17, 144:12, 152:24, 156:22, 157:21, 207:29, 233:23, 233:26 included [10] - 5:13, 6:14, 49:9, 120:16, 125:6, 135:25, 142:14, 159:24, 162:8, 235:2 Included [1] - 147:24 includes [5] - 63:26, 145:24, 150:10, 155:24, 208:3 including [25] - 4:10, 9:17, 10:5, 11:8, 17:4, 19:14, 26:27, 36:5, 81:9, 97:23, 111:3, 113:4, 124:27, 125:17, 137:13, 155:3, 155:8, 155:14, 174:4, 204:15, 207:1, 208:2, 210:9, 230:18, 230:21 inclusion [2] -156:16, 157:12 incorporate [1] -74:6 incorporated [2] -32:7, 75:9 incorrectly [1] -158:26 increase [14] - 14:11, 21:5, 26:29, 36:1, 72:22, 89:10, 98:4, 130:4, 150:18, 156:24, 156:29,

158:14, 169:2

improvement [3] -

increased [3] -	154:14, 155:4, 156:4,	201:19, 202:6, 202:7,	48:22, 50:1, 50:8,	113:16, 113:26,
12:29, 131:10, 169:21	160:21, 164:15,	202:11, 202:15,	51:5, 54:1, 54:18,	114:10, 115:2,
increases [2] -	164:17, 164:27,	204:1, 213:17	56:13, 57:22, 59:16,	115:13, 115:27,
• •		Information [3] -	60:16, 61:13, 61:28,	116:4, 116:8, 116:16,
29:19, 71:10	164:28, 197:3, 198:1,			
increasing [5] -	198:8, 198:19, 199:4,	11:9, 100:28, 127:8	62:10, 64:14, 65:12,	117:2, 117:5, 117:9,
14:21, 15:27, 17:23,	199:14, 200:18,	informed [2] -	66:23, 67:25, 68:20,	117:12, 120:7,
70:4, 111:13	205:19, 206:12,	112:27, 202:19	69:23, 71:23, 73:1,	121:23, 122:19,
increasingly [7] -	206:20, 209:9,	infrastructural [2] -	73:15, 75:19, 79:6,	122:24, 123:15,
14:8, 15:4, 17:26,	209:13, 209:24,	145:18, 230:17	86:11, 89:20, 90:9,	123:22, 124:5,
21:17, 48:26, 50:28,	210:14, 211:3, 211:5,	infrastructure [48] -	92:3, 93:18, 94:15,	141:10, 141:18,
68:25	211:20, 212:7, 212:8,	12:9, 16:27, 17:4,	95:13, 95:26, 95:27,	165:16, 166:2,
Increasingly [1] -	214:15, 230:18,	26:26, 28:27, 29:1,	96:21, 97:18, 100:27,	168:15, 168:17,
74:27	234:1, 234:6, 234:12	29:7, 29:10, 99:29,	102:16, 106:14,	170:7, 171:1, 171:5,
incremental [1] -	industries [3] - 5:15,	100:23, 104:21,	109:26, 113:12,	171:13, 171:15,
19:18	210:4, 210:9	105:20, 108:7,	114:23, 115:22,	175:2, 175:23, 176:2,
incumbent [2] - 58:1,	industry [38] - 5:16,	110:25, 111:25,	116:7, 116:21,	176:12, 176:14,
58:2	5:17, 7:11, 10:28,	138:22, 142:8, 145:7,	116:25, 117:4,	177:3, 177:17, 179:3,
incumbents [1] -	11:3, 11:13, 12:20,	145:9, 145:13,	117:11, 120:24,	179:10, 179:15,
67:12	15:4, 17:12, 40:1,	145:17, 145:27,	121:22, 122:15,	179:28, 180:5,
incurring [1] - 162:7	57:3, 60:3, 60:26,	147:6, 152:25,	124:3, 124:12, 135:5,	180:13, 180:17,
indeed [2] - 96:24,	98:1, 110:7, 110:10,	153:10, 154:1, 154:7,	140:23, 141:6,	182:9, 182:17,
212:20	110:10, 115:17,	154:10, 154:18,	147:21, 158:24,	182:25, 183:1,
Indeed [1] - 24:8	115:18, 118:7,	156:24, 157:10,	166:28, 167:9,	183:15, 183:25,
independence [2] -	118:13, 120:4,	157:22, 158:7, 159:9,	167:13, 169:22,	183:28, 184:25,
36:2, 36:12	130:24, 131:18,	162:5, 162:9, 163:26,	170:6, 170:24,	186:9, 186:12,
independent [8] -	131:21, 131:27,	165:9, 187:17, 189:7,	176:28, 177:28,	187:26, 188:6,
31:21, 51:24, 73:7,	132:19, 137:24,	210:1, 211:11,	178:23, 179:27,	188:13, 188:21,
78:1, 78:11, 133:25,	145:10, 145:19,	226:12, 226:15,	180:4, 181:18,	190:16, 190:26,
194:16, 194:24	147:7, 163:27,	226:21, 227:20,	183:29, 184:12,	192:4, 195:11,
INDEX [1] - 3:1	172:18, 187:14,	228:1, 229:19	184:22, 186:24,	195:19, 197:28,
India [2] - 12:6,	187:25, 198:5, 210:9,	infrequent [1] -	187:8, 187:19,	198:10, 203:9,
14:14	237:19	128:12	190:18, 191:4,	203:23, 204:2,
indicate [3] - 25:12,	industry's [1] - 30:7	infrequently [1] -	195:17, 195:29,	204:27, 205:10,
208:29, 213:12	inefficient [1] -	131:24	198:27, 199:10,	205:16, 205:26,
indicated [5] - 48:11,	136:27	initial [6] - 19:3,	199:26, 200:21,	206:8, 208:11,
88:11, 107:15,	inert [1] - 55:8	19:24, 40:23, 90:6,	201:10, 202:28,	208:22, 209:18,
110:20, 203:13	inferred [1] - 229:14	129:26, 216:1	206:4, 207:16,	210:18, 211:15,
indicating [1] -	inflame [1] - 51:8	initiated [1] - 92:5	208:20, 209:17,	214:3, 214:17,
- · ·	influence [1] - 70:21	inject [5] - 176:20,	210:23, 215:23,	214:29, 216:26,
147:23 indication [1] -	influenced [4] -	176:26, 177:22,	216:29, 220:21,	217:5, 217:14,
	17:13, 70:15, 74:21,	189:8, 194:9	228:18, 228:19,	220:11, 220:20,
228:28	104:13	injecting [2] - 189:9,	230:7, 230:26,	220:27, 222:7,
indirectly [1] -	influences [1] -	191:26	231:26, 232:21,	224:14, 224:17,
220:18	17:18	injection [1] - 133:28	234:2, 234:7, 234:21,	224:28, 230:28,
individuals [1] - 43:4	influencing [1] - 17:6	injuries [2] - 30:12,	243:20, 244:4, 244:12	231:21, 231:25,
Indonesia [1] - 14:28	inform [2] - 207:15,	30:14	INSPECTOR [158] -	232:7, 233:4, 233:14,
inducing [1] - 134:19	230:26	Inlet [1] - 101:23	1:14, 4:5, 38:8, 38:17,	233:21, 234:3,
indulgence [1] -	information [37] -	innovation [3] -	38:24, 48:17, 49:11,	234:13, 234:19,
166:9	56:25, 64:2, 80:15,	152:17, 156:27,	49:20, 53:6, 53:15,	235:14, 236:9,
industrial [59] - 9:23,	87:20, 87:21, 130:13,	157:11	54:12, 55:13, 55:20,	240:19, 245:15,
76:25, 104:23,			56:19, 59:24, 61:1,	245:19, 245:22,
107:12, 107:14,	159:21, 160:10, 171:11, 171:19,	input [6] - 45:3,	62:15, 62:26, 64:8,	245:27, 246:9,
107:17, 107:23,	172:4, 172:5, 172:17,	98:27, 127:17, 202:14, 202:18	76:5, 77:26, 78:20,	246:16, 246:22,
108:3, 109:18, 142:8,	172:28, 173:8, 174:5,	202:14, 202:18, 228:22	84:23, 85:2, 85:7,	246:25
144:23, 144:26,			85:26, 87:4, 87:23,	Inspectors [1] -
144:28, 145:5, 147:9,	174:27, 174:29, 178:7, 178:9, 178:15,	insight [1] - 79:25	89:4, 89:16, 89:24,	213:11
147:26, 148:3, 148:8,	178:18, 180:27,	Insofar [1] - 195:22	90:18, 90:24, 92:11,	install [3] - 18:22,
148:17, 149:3, 149:7,	176.16, 160.27, 194:21, 194:25,	insofar [3] - 173:19,	92:19, 93:27, 94:4,	81:26, 242:27
149:23, 149:25,	134.41, 134.43,	196:21, 236:3		
140.26 140.20	201.2 201.6 201.12		94:13, 94:18, 95:10,	installed [3] - 19:11,
149:26, 149:28,	201:2, 201:6, 201:12, 201:13, 201:16	Inspector [108] -	94:13, 94:18, 95:10, 96:1, 96:11, 96:29,	installed [3] - 19:11, 134:7, 136:22
150:1, 150:20,	201:2, 201:6, 201:12, 201:13, 201:16,			

60:6, 64:26, 75:24, 185:18 instances [2] -110:27, 144:24 instead [1] - 239:3 instigated [1] -169:10 Institute [5] - 98:12, 124:17, 125:29, 174:5, 223:24 Institution [2] -142:2. 142:3 institutional [1] -142:9 INSTRUCTED [1] -2:10 instrument [1] -73:12 instrumental [1] -81:19 insulate [1] - 68:26 insurance [1] - 24:18 integral [1] - 63:11 Integrated [1] -169:10 integrated [3] - 8:14, 110:28, 143:9 integration [1] -157:2 integrity [1] - 157:7 intend [4] - 77:7, 102:17, 102:21, 106:13 intended [3] - 25:18, 126:27, 139:23 intending [1] - 5:23 intensive [1] - 24:14 intent [2] - 57:4, 241:10 intention [4] - 88:28, 93:1, 96:6, 243:28 inter [1] - 63:8 interaction [1] -45:26 interconnector [10] -22:26, 23:1, 23:6, 57:7, 186:18, 186:22, 189:4, 189:22, 190:6, 218:6 interconnectors [4] -27:11, 27:14, 192:29, 193:6 intercounty [1] -235:13 interest [10] - 9:13, 14:19, 24:8, 24:17, 24:28, 48:9, 78:25, 84:29, 197:18, 242:22 interested [5] -

56:21, 72:12, 78:2,

78:13, 82:17 investigations [1] interesting [9] -172:2 15:16, 15:18, 57:18, investing [1] - 25:8 62:21, 65:27, 76:10, investment [13] -172:13, 193:5, 196:20 26:26, 129:26, interests [6] - 7:1, 152:16, 157:1, 157:5, 25:8. 31:16. 35:7. 157:6, 157:21, 41:10, 54:20 157:24, 158:5, 158:7, interface [1] - 127:20 159:12, 160:6, 244:5 INTERJECTION [3] investments [3] -48:5, 48:16, 177:16 16:5, 119:8, 157:25 intermittent [1] investors [1] - 211:7 239:26 invests [1] - 9:6 internal [2] - 9:9, invited [3] - 203:3. 203:11, 203:12 involve [4] - 94:5, International [6] -6:13, 11:8, 58:29, 94:10, 111:16, 131:4 100:29, 125:12, involved [10] - 6:20, 163:23 6:23, 80:24, 81:1, international [19] -173:2, 178:29, 7:11, 7:25, 9:3, 10:24, 183:22, 187:20, 10:27, 31:25, 32:16, 220:7, 224:24 56:9, 68:25, 125:28, Involvement [1] -145:17, 152:11, 142:17 155:17, 163:21, involvement [2] -164:3, 172:9, 197:10, 6:18, 125:14 204:24, 237:19 involves [3] - 18:13, internationally [1] -49:1, 65:29 172:20 involving [6] - 30:11, internet [4] - 61:23, 45:25, 126:6, 130:26, 81:16, 82:9, 82:29 131:22, 133:6 interpretation [6] -Ireland [119] - 4:26, 56:10, 60:20, 230:7, 18:2, 19:15, 20:13, 231:6, 231:7, 231:20 21:3, 21:6, 21:19, interrupt [3] -21:22, 22:9, 22:18, 206:24, 211:25, 22:20, 22:25, 23:1, 212:14 23:13, 24:2, 24:5, interval [1] - 72:7 24:13, 25:16, 25:29, intervals [1] - 71:12 27:5, 27:7, 27:14, intervene [1] - 48:18 27:18, 27:24, 28:24, intervened [1] -29:8, 31:23, 32:8, 179:29 34:7, 34:10, 34:16, intervention [1] -34:22, 34:26, 35:24, 38:4, 40:10, 40:12, 68:28 55:12, 55:23, 56:1, intimately [1] - 6:20 56:8, 56:12, 57:8, introduced [1] - 5:22 invalid [5] - 161:25, 57:18, 57:20, 58:4, 62:6, 62:10, 62:22, 207:11, 207:25, 63:2, 63:6, 63:13, 208:4, 208:9 63:16, 63:24, 64:19, invariably [2] -66:13, 66:14, 67:22, 130:24, 131:19 68:2, 68:18, 68:21, inventory [2] - 75:27,

133:8

239:2

invest [2] - 160:20,

investigate [2] -

investigation [5] -

86:9, 86:19, 109:4,

221:13, 230:22

105:5, 111:27

129:12, 130:3, 131:4, 135:18, 137:7, 140:20, 142:2, 142:12, 152:27, 153:8, 156:12, 156:14, 159:10, 160:13, 182:19, 182:24, 182:26, 186:8, 189:24, 190:14, 191:28, 193:5, 194:11, 218:10, 219:13, 220:14, 221:17, 237:29, 239:15, 239:21, 239:22, 239:28, 241:22, 242:8, 242:24, 242:26 Ireland's [7] - 18:5, 23:9, 27:29, 29:8, 36:14, 36:18, 98:4 Irish [56] - 6:26, 7:12, 7:17, 10:23, 11:16, 18:25, 19:13, 20:11, 20:20, 20:24, 21:1, 21:5, 21:15, 21:27, 22:17, 22:27, 23:5, 24:14, 24:20, 24:23, 25:5, 28:3, 36:11, 38:22, 58:5, 63:20, 66:19, 68:7, 68:11, 71:15, 75:3, 75:6, 75:8, 76:2, 77:20, 99:19, 101:11, 101:12, 103:2, 110:18, 111:19, 112:11, 119:3, 122:9, 126:2, 132:10, 138:25, 141:2, 142:27, 163:25, 207:7, 220:25, 227:17, 237:14, 242:21, 243:6 Island [8] - 74:16, 106:11, 135:17, 194:13, 194:27, 195:2, 195:14 island [7] - 74:9, 106:7, 128:29, 152:26, 153:8, 153:10, 157:9 Islands [2] - 7:21, 9:12 Isle [5] - 28:15, 58:14, 65:18, 135:11, 220:14 isolation [2] - 95:7, 223:3 issue [57] - 4:16, 16:17, 25:18, 25:20,

30:25, 35:13, 35:14,

43:21, 43:26, 43:27, 44:7, 44:13, 44:18, 45:12, 45:13, 46:11, 46:14, 46:27, 46:28, 48:12, 49:18, 51:8, 51:13, 65:27, 66:8, 73:1, 77:24, 81:3, 86:26, 88:17, 89:13, 90:10, 92:21, 97:11, 105:27, 112:14, 113:20, 137:12, 138:21, 139:1, 145:13, 180:27, 188:12, 190:20, 190:23, 193:17, 203:21, 207:22, 209:11, 214:5, 214:19, 230:10, 232:29, 237:17, 237:23, 246:22 issued [2] - 47:2, 221:24 issues [38] - 7:7, 12:20, 20:16, 27:1, 43:25, 46:9, 46:25, 48:22, 48:24, 49:1, 49:2, 59:2, 73:3, 92:9, 97:7, 105:18, 111:2, 111:21, 112:8, 113:24, 122:2, 123:28, 136:16, 137:2, 137:9, 140:21, 141:16, 155:13, 155:23, 162:29, 163:15, 170:25, 179:1, 201:14, 201:15, 203:13, 212:26 Italy [4] - 11:27. 52:10, 139:7, 139:12 item [1] - 168:10 itself [8] - 32:13, 36:26, 43:4, 53:19, 54:3, 106:25, 177:24, 223:18

J

JANUARY [3] - 1:16, 4:1, 246:28 January [8] - 156:11, 160:1, 202:13, 202:18, 202:25, 212:29, 213:10, 213:19 Japan [5] - 11:24, 12:1, 69:7, 124:28, 125:1 Japan's [1] - 98:9 JARLATH [1] - 2:9

69:3. 69:5. 69:8.

71:15, 74:2, 74:6,

75:9, 76:15, 76:18,

86:23, 98:3, 98:25,

112:21, 112:24,

118:11, 118:17,

77:29, 78:12, 78:16,

118:25, 126:6, 129:2,

JCMNR [1] - 138:5	K	205:26, 206:13,	173:20, 173:25,	118:11, 233:13
JCMRN [1] - 138:16	-	– 206:19, 208:26,	174:1, 174:15, 175:5,	lake [1] - 241:4
Jerry [1] - 224:17	Wathlass	214:10, 225:19,	175:6, 175:10,	Land [2] - 144:6,
Jersey [1] - 9:16	Kathleen [2] -	226:8, 226:21,	175:21, 176:16,	148:24
JESS [1] - 17:2	119:19, 119:21	226:23, 227:20,	177:22, 179:20,	land [63] - 105:11,
jetties [6] - 125:20,	Kathy [1] - 109:9	227:21, 228:12,	181:23, 185:11,	105:15, 105:22,
127:9, 135:15,	Kayta [3] - 236:22,	228:23, 228:26,	185:22, 185:25,	106:27, 108:2,
139:22, 149:8, 199:23	236:27, 237:11	229:1, 229:3, 229:5,	186:7, 186:21,	112:24, 114:19,
Jetties [1] - 101:2	KEARNEY [34] -	229:9, 229:11,	186:29, 187:6,	115:19, 117:27,
jetty [14] - 66:1,	43:12, 47:6, 47:27,	229:24, 231:11,	187:18, 187:28,	118:1, 118:7, 118:14,
81:27, 99:4, 100:10,	48:6, 51:27, 95:27, 96:3, 115:29, 116:25,	231:15, 232:18,	188:4, 189:19, 190:13, 190:27,	119:23, 119:27,
113:5, 125:21, 126:3,	182:23, 185:29,	232:23, 233:2, 233:22 KERRY [3] - 1:8,	191:2, 191:20, 192:1,	120:5, 129:21,
126:26, 128:23,	186:10, 192:18,	1:17, 2:4	192:10, 192:17,	144:28, 147:19,
140:27, 161:6,	225:2, 225:11,	Kerryman [1] - 166:5	192:18, 192:24,	147:27, 147:29,
170:19, 223:2, 223:3	225:17, 225:21,	key [10] - 8:27,	192:29, 193:9,	148:2, 149:4, 149:26, 149:27, 149:28,
Joan [1] - 169:22	225:26, 226:5,	144:4, 145:12, 147:6,	193:13, 193:14,	150:2, 150:20,
JOAN [1] - 2:15	226:17, 226:20,	148:22, 151:21,	193:15, 195:22,	150:21, 160:17,
job [1] - 179:2	226:24, 227:2, 227:8,	154:14, 154:17,	195:25, 196:6,	161:13, 162:28,
jobs [12] - 40:18,	227:24, 228:10,	155:13, 158:11	217:20, 219:25	163:14, 168:13,
40:20, 115:18,	228:15, 229:13,	KILCOLGAN [1] -	Kish [1] - 77:19	176:16, 176:19,
119:18, 119:19,	229:21, 230:3, 231:9,	1:8	kit [1] - 81:22	196:21, 196:26,
150:25, 150:26, 211:22, 215:4, 215:6,	232:15, 233:2, 233:22	Kilcolgan [11] -	Knockfinglas [1] -	197:7, 199:15, 200:5,
215:7, 246:4	Kearney [6] - 26:1,	20:18, 24:29, 26:2,	106:23	201:14, 201:15,
jobs" [1] - 215:4	43:13, 96:3, 109:9,	29:25, 32:1, 33:8,	knowing [1] - 211:9	204:10, 205:19,
John [8] - 47:8,	110:16, 135:7	64:16, 82:5, 110:19,	knowledge [3] -	206:20, 209:14,
139:6, 139:15,	keep [4] - 28:18,	112:29, 215:10	46:21, 61:14, 183:21	209:26, 210:24,
139:29, 140:8,	118:3, 176:27, 240:4	Kilkenny [1] - 76:19	known [11] - 14:22,	211:28, 212:1, 212:2,
166:20, 222:20,	Kennedy [1] - 47:8	Killala [1] - 102:6	17:2, 27:27, 107:25,	212:6, 212:9, 212:17,
222:21	kept [1] - 188:17	Killarney [7] - 96:9,	110:27, 114:15,	213:14, 214:9,
Johnny [4] - 115:9,	Kerry [93] - 47:8,	152:2, 227:22,	150:20, 175:19,	214:22, 214:28,
184:4, 221:6, 224:3	52:17, 78:24, 91:16,	228:12, 229:25,	178:21, 213:12,	222:12, 233:1, 234:12
joined [2] - 12:3,	96:7, 107:6, 107:10,	229:29	223:17	Landbank [8] -
80:26	107:13, 109:16,	Killary [1] - 102:11	knows [2] - 48:3,	97:25, 106:6, 106:12,
joining [2] - 5:26,	118:4, 118:5, 118:14,	Killgisert [1] - 235:4	175:20	106:21, 107:7, 109:1,
124:26	118:17, 119:11,	kilometre [2] -	Korea [3] - 11:24,	109:17, 127:3
Joint [12] - 17:1,	119:16, 119:29,	104:10, 200:17	12:1, 125:1	landbank [25] -
122:29, 124:22,	120:15, 121:12,	kilometres [8] -	Kyoto [5] - 237:12,	106:25, 107:4,
138:4, 173:9, 173:18,	121:18, 121:20, 122:12, 142:28,	91:26, 104:6, 106:29,	237:15, 237:27,	107:18, 107:21,
180:10, 180:14,	143:6, 143:16,	107:1, 108:20,	237:29, 243:19	107:26, 108:5, 198:3,
180:19, 180:20,	143:17, 143:24,	150:21, 200:17,		_ 198:5, 198:7, 198:9, 198:12, 198:25,
181:23, 181:27	145:13, 145:16,	223:18	L	- 199:14, 199:22,
joint [5] - 5:28, 5:29,	145:21, 146:6, 147:5,	kilowatts [1] -		200:13, 200:18,
7:22, 9:13, 204:13	147:7, 147:15,	223:19	L003 [1] - 161:23	211:21, 214:13,
Journal [1] - 81:17	147:16, 147:17,	Kilrush [2] - 231:16, 231:19	L004 [1] - 161:23	214:14, 215:17,
judicial [1] - 206:18	148:14, 148:20,	kind [8] - 30:6,	L007 [1] - 161:22	215:18, 215:19,
July [2] - 85:22, 86:1	148:21, 149:14,	53:25, 67:19, 68:28,	L055 [1] - 161:28	215:22, 217:21
jump [1] - 74:25	149:15, 149:16,	70:19, 71:6, 180:27,	L056 [1] - 163:20	landed [1] - 27:8
June [1] - 160:18	150:9, 151:25,	216:22	Labasheeda [1] -	lands [14] - 115:24,
jurisdiction [4] -	151:27, 152:1,	Kingdom [1] -	106:10	144:4, 144:22,
38:23, 207:7, 221:28, 222:18	153:11, 153:28,	186:26	laboratory [1] -	144:25, 144:27,
	154:4, 154:19,	Kinsale [61] - 28:1,	137:17	145:1, 147:20,
jurisdictions [1] - 32:18	159:11, 161:24,	76:28, 110:21,	lack [7] - 35:21, 62:4,	148:13, 148:22,
justice [3] - 64:2,	163:20, 163:22,	110:25, 111:3, 111:6,	129:29, 132:29,	206:11, 211:4,
64:4, 64:5	163:28, 164:12,	111:20, 111:25,	134:29, 138:10, 141:4	233:25, 233:27, 234:1
, ••	164:23, 165:1,	111:27, 112:3, 112:4,	lad [1] - 93:19	Lands [4] - 197:1,
	165:11, 169:8,	112:17, 122:28,	Ladies [1] - 4:21	198:18, 209:7, 211:2
	196:28, 197:20,	123:3, 123:9, 138:4,	lady [1] - 78:20	landscape [3] -
	198:22, 201:25,	138:22, 173:7,	laid [3] - 92:27,	146:29, 162:12, 163:7
	201:27, 205:24,			

landscapes [1] -162:19 Langford [1] - 98:20 language [1] - 56:13 languished [1] -137:17 large [20] - 8:28, 9:1, 9:18, 19:6, 47:16, 60:19, 73:6, 80:8, 100:2, 104:20, 110:11, 129:2, 130:21, 134:22, 137:25, 140:26, 149:28, 151:18, 211:11 Large [1] - 155:4 larger [3] - 80:10, 89:14, 130:10 largest [8] - 9:10, 11:23, 16:10, 100:5, 103:3, 103:7, 130:10, 193:23 Larne [4] - 182:20, 182:23, 182:25, 195:4 last [25] - 11:4, 13:6, 26:18, 26:27, 41:16, 41:21, 41:22, 42:4, 42:5, 58:26, 62:23, 64:26, 72:15, 85:16, 118:9, 120:22, 121:3, 122:15, 141:17, 165:18, 169:5, 184:14, 188:29, 234:10, 246:1 late [3] - 15:3, 85:23, 86:2 latest [8] - 12:18, 63:22, 168:21. 168:29, 178:8, 178:9, 185:9, 192:1 latter [1] - 127:20 Latterly [1] - 125:1 launch [1] - 86:7 launched [3] - 85:22, 86:1. 156:11 Law [2] - 98:11, 98:12 law [7] - 22:17, 22:21, 57:24, 62:14, 63:12, 67:17, 221:17 laws [4] - 22:17, 221:15, 221:18, 221:19 layout [3] - 154:8, 226:13, 228:2 lead [1] - 17:20 leader [1] - 161:9 leading [4] - 9:20, 53:2, 133:22, 212:22

leads [1] - 136:25

leaks [3] - 30:14, 85:21, 86:6 leased [1] - 120:28 leases [1] - 108:25 least [7] - 56:22, 104:24, 162:6, 195:23, 222:29, 230:27, 246:11 leave [15] - 5:21, 41:29, 42:9, 83:16, 83:17, 90:27, 141:15, 167:15, 193:5, 203:7, 217:7. 217:10. 224:27, 230:6, 230:8 leaving [1] - 176:14 led [3] - 86:6, 136:21, 199:7 left [8] - 4:7, 15:12, 39:9. 39:20. 102:10. 203:17, 217:3, 224:15 legal [12] - 8:7, 8:10, 32:18, 45:10, 52:6, 58:16, 67:18, 172:15, 206:26, 207:17, 207:18, 221:9 legislation [5] -50:22, 77:6, 77:16, 206:16, 227:18 legitimate [2] -207:10, 227:11 length [4] - 88:4, 103:9, 190:20, 210:27 less [11] - 15:9, 26:22, 29:13, 58:13, 69:6, 69:13, 74:5, 130:15, 130:16, 221:8, 244:10 lessening [1] -158:10 lesser [2] - 11:25, **letter** [4] - 161:17, 212:27, 213:19, 213:21 level [19] - 15:8, 39:15, 40:7, 44:2, 60:12, 71:11, 74:7, 106:27, 127:12, 152:11, 152:15, 157:19, 158:14, 164:5, 171:22, 172:26, 173:21, 235:13 levels [2] - 26:14, 26:29 lever [1] - 152:15 liable [1] - 237:28

liaised [1] - 125:22

liberalised [1] - 70:6

liberal [1] - 67:13

licence [2] - 37:3, 87:27 licences [1] - 36:29 licensed [1] - 124:14 lie [2] - 14:23, 121:8 life [5] - 24:12, 55:29, 79:11, 119:21, 156:13 lifeboat [1] - 223:24 lifetime [2] - 146:19, 146:27 Light [1] - 87:16 light [1] - 211:7 lights [1] - 240:5 likelihood [3] -88:14, 188:1, 223:8 likely [11] - 17:29, 110:13, 129:13, 137:27, 146:8, 215:27, 217:9, 229:12, 230:13, 233:24, 233:27 likewise [1] - 93:2 Likewise [2] - 67:6, 167:27 LILY [1] - 2:17 Limerick [8] -119:15, 152:7, 152:10, 152:13, 152:14, 153:11, 154:25, 161:3 limestone [1] -216:22 limitations [1] limited [9] - 12:1, 29:29, 32:3, 67:2, 67:5. 67:7. 84:26. 129:15, 134:25 limiting [1] - 54:5 limits [1] - 13:20 line [23] - 21:25, 27:27, 86:19, 86:28, 91:10. 91:13. 91:19. 91:23, 92:21, 92:24, 92:27, 92:28, 93:3, 93:10, 96:8, 116:5, 133:20, 147:4, 153:27, 161:6, 183:20, 190:26 lines [6] - 86:7, 91:28, 93:5, 126:28, 182:7 linkages [1] - 145:17 linked [2] - 21:17, liquefaction [11] -6:10, 10:13, 15:4, 15:6, 16:8, 17:29, 39:14, 53:18, 81:18,

liquefied [4] - 5:12, 8:23, 150:23, 238:10 liquid [1] - 81:25 liquified [1] - 86:3 Liselton [1] - 119:13 Lislaughtin [2] -168:23, 169:3 list [6] - 37:8, 59:10, 79:21, 96:23, 143:17, 143:19 List [3] - 172:6, 172:20, 178:18 listed [6] - 8:18, 99:13, 106:3, 146:9, 158:21, 164:1 listened [2] - 78:24, 118:9 Listowel [8] - 35:10, 41:13, 41:17, 41:27, 84:1, 84:5, 119:13, 120:21 Lists [1] - 172:6 Lite [1] - 86:15 Lite's [1] - 86:29 live [3] - 48:26, 67:27, 169:12 lives [1] - 31:7 living [1] - 121:27 Lloyd's [6] - 124:18, 125:9, 172:6, 172:20, 178:17 LNG [555] - 1:5, 2:8, 3:15, 4:24, 4:25, 5:3, 5:13, 5:14, 5:16, 5:20, 5:29, 6:4, 6:7, 6:8, 6:10, 6:13, 6:14, 6:18, 6:20, 6:24, 6:29, 7:1, 7:2, 7:9, 7:10, 7:11, 7:12, 7:16, 7:17, 7:18, 7:19, 7:20, 7:22, 7:25, 8:1. 8:4. 8:8. 8:9. 8:11, 8:23, 8:26, 8:29, 9:1, 9:8, 10:8, 10:9, 10:11, 10:19, 10:22, 10:24, 10:28, 11:3, 11:15, 11:16, 11:19, 11:20, 11:23, 11:28, 12:2, 12:7, 12:10, 12:18, 13:23, 14:17, 14:20, 14:24, 14:28, 15:5, 15:9, 15:26, 15:28, 16:3, 16:9, 16:10, 16:13, 16:15, 16:28, 17:4, 17:12, 17:19, 17:23, 18:4, 18:12, 18:21, 18:25, 18:26, 19:1, 19:5, 19:10, 19:17, 20:1,

Liquefied [1] - 25:4

LIQUEFIED [1] - 1:5

20:4, 20:5, 20:19, 20:23, 20:27, 21:2, 21:4, 21:18, 21:21, 22:9, 22:14, 22:17, 22:18, 22:24, 22:27, 23:2. 23:3. 23:17. 23:22, 23:23, 23:25, 23:27, 24:1, 24:4, 24:6, 24:7, 24:12, 24:14, 24:18, 24:20, 24:27, 25:9, 25:13, 25:17, 25:19, 25:21, 25:22, 25:28, 26:27, 27:1, 27:4, 27:8, 28:5, 28:8, 28:9, 28:12, 28:15, 28:17, 28:19, 28:22, 28:24, 28:28, 29:2, 29:3, 29:27, 30:7. 30:11. 30:15. 31:21, 31:24, 31:25, 31:28, 32:8, 32:13, 32:15, 32:16, 32:20, 32:21, 32:24, 33:4, 33:12, 33:21, 33:22, 33:24, 34:1, 34:11, 34:14, 34:18, 34:26, 35:5, 35:12, 35:29, 36:4, 36:5, 36:8, 36:9, 36:10, 37:10, 37:21, 38:4, 38:23, 39:13, 39:22, 39:26, 39:28, 40:1, 40:15, 40:20, 40:27, 41:2, 42:14, 42:16, 42:22, 42:23, 43:2, 43:7, 43:14, 43:26, 44:5, 45:9, 45:12, 46:3, 46:4, 50:9, 50:26, 51:7, 51:10, 51:13, 51:14, 51:16, 51:29, 52:7, 52:9. 52:10. 53:11. 53:16, 53:17, 53:18, 53:19, 53:20, 53:25, 53:27, 53:28, 53:29, 54:4, 54:8, 54:22, 54:25, 54:26, 55:3, 55:5, 55:23, 55:29, 57:3, 57:5, 57:18, 57:19, 57:26, 57:27, 58:4, 58:27, 60:3, 60:7, 60:9, 64:22, 65:3, 65:6, 65:17, 65:28, 66:14, 66:17, 66:20, 67:1, 67:4, 68:9, 68:12, 68:23, 69:13, 69:15, 69:18, 71:19, 71:29, 72:1, 72:8, 72:29, 73:3, 73:4, 73:5, 73:10, 73:15, 73:18, 74:2, 74:6, 75:1, 75:5, 75:8,

81:21, 236:22

75:11, 75:16, 75:20,
75:28, 75:29, 79:23,
80:2, 80:3, 80:23,
80:28, 81:2, 81:7,
81:9, 81:15, 81:19,
83:9, 84:18, 85:17,
85:21, 86:29, 87:13,
91:11, 92:23, 93:21,
97:19, 98:3, 98:4, 98:10, 98:12, 98:16,
98:24, 99:8, 100:5,
100:7, 101:2, 103:7,
103:10, 103:14,
104:18, 107:19,
107:27, 108:17,
108:21, 109:2,
109:12, 109:20,
109:24, 110:7,
110:26, 110:27,
111:2, 111:5, 111:10,
111:11, 111:12,
111:14, 111:18, 111:22, 111:28,
111:22, 111:28,
111:29, 112:3, 112:4,
112:9, 112:17,
112:26, 117:8,
117:26, 118:1, 118:4, 120:3, 121:19, 122:3,
122:11, 124:22,
124:23, 124:24,
124:27, 124:28,
124:27, 124:28, 124:29, 125:14,
125:17, 125:19,
125:20, 125:21,
126:19, 126:20,
126:24, 126:28,
127:3, 127:6, 127:9,
127:13, 127:23,
128:4, 128:15,
128:21, 128:25,
130:7, 130:10,
130:13, 130:22,
130:28, 131:13,
131:23, 131:27, 131:28, 132:8,
132:12, 132:8,
132:18, 132:19, 132:29, 133:8
132:29, 133:8, 133:11, 133:12,
133:13, 133:24,
133:25, 134:2, 134:3,
135:9, 135:12,
135:15, 135:25,
135:29, 136:1, 136:3,
136:6, 136:12, 138:2,
139:8, 139:10,
139:16, 139:19,
139:21, 140:1, 140:4,
140:5, 140:10,
140:13, 140:26,
141:5, 142:13,

142:22, 142:25,
143:12, 143:19,
143:23, 147:4,
143:23, 147:4, 147:26, 147:29,
148:2, 148:7, 149:2,
149:3, 154:17, 156:1,
156:17, 158:29, 159:17, 160:18,
161:14, 161:26,
164:26, 164:29,
166:21, 166:24,
166:21, 166:24, 166:29, 167:2, 167:6,
167:10, 167:14,
170:13, 170:17,
175:14, 175:15, 176:18, 176:29,
178:3, 181:8, 181:21,
184:2, 184:7, 184:28,
185:1, 185:12,
186:27, 190:2, 190:3,
190:7, 190:8, 190:14,
191:11, 191:18, 191:21, 191:27,
191:29, 192:28,
194:8, 194:15, 198:4,
198:7, 199:5, 199:16,
199:23, 201:20,
202:15, 205:24,
208:26, 209:21, 209:29, 210:11,
210:13, 211:2, 211:4,
211:6, 215:3, 215:13,
215:14, 215:15,
215:20, 217:24,
217:28, 218:1, 218:5,
218:10, 218:16, 219:2, 219:12,
219:15, 220:13,
220:15, 220:19,
220:24, 222:23,
224:22, 225:8,
225:23, 225:29, 227:4, 228:29, 229:7,
229:15, 230:4,
233:25, 236:10,
236:12, 236:13, 236:24, 236:28,
237:20, 238:10,
238:20, 239:6, 243:13, 244:16
243:13, 244:16, 244:21, 244:27,
245:11, 245:23
LNG' [1] - 66:15
LNG's [7] - 15:8,
29:23, 41:10, 60:13,
136:8, 243:27, 245:5
LNGRV [2] - 134:12,

134:27

LNGRVs [2] -

133:13, 134:9

```
load [2] - 23:23,
54:27
 loading [2] - 127:13,
134:15
 loaned [2] - 2:29,
3:31
 loans [1] - 32:11
 local [31] - 4:9,
38:15, 44:2, 48:12,
49:6, 51:28, 94:29,
107:2, 108:8, 108:24,
110:20, 118:18,
142:19, 142:21,
149:1, 150:7, 150:14,
150:15, 150:17,
150:19, 150:29,
151:21, 153:21,
167:20, 224:13,
228:5, 231:10,
231:11, 231:12,
235:12
 Local [17] - 142:29,
143:1, 149:10,
149:12, 150:5, 150:9,
150:10, 150:11,
151:1, 162:18,
163:10, 164:12,
165:3, 167:18, 168:4
 locally [3] - 52:16,
107:25, 108:1
 locate [2] - 84:11,
105:7
 located [19] - 17:28,
30:4, 40:10, 78:12,
80:28, 104:4, 109:12,
127:1, 129:21,
130:17, 133:10,
135:8, 135:16,
140:11, 145:3,
147:26, 148:1, 192:24
 LOCATED [1] - 1:6
 location [30] - 38:15,
100:9, 102:25,
104:18, 105:29,
109:2, 112:3, 112:4,
112:13, 112:14,
113:4, 113:6, 125:19,
126:20, 127:13,
127:15, 127:27,
136:23, 138:28,
139:3. 140:27.
144:27, 145:19,
152:17, 154:7,
164:18, 164:18,
170:28, 226:11, 228:1
 locational [1] -
149:24
 locations [14] -
93:17, 99:2, 103:28,
128:2, 132:3, 132:24,
```

```
London [1] - 80:13
 long-term [15] -
15:29, 17:24, 18:1,
19:19, 21:26, 36:12,
54:2, 59:17, 129:28,
135:3, 138:15, 144:9,
148:26, 157:6, 157:19
 longest [1] - 50:5
 look [17] - 39:28,
41:20, 78:16, 90:1,
92:18, 136:4, 147:23,
147:28, 193:20,
219:10, 221:18,
223:12, 223:14,
237:3, 238:22,
243:21, 245:25
 looked [4] - 42:3,
109:25, 218:20,
235:11
 looking [13] - 56:9,
56:11, 68:4, 78:16,
83:3, 87:12, 94:24,
100:4, 100:9, 100:13,
105:11, 226:28,
232:15
 Looking [1] - 101:7
 lorries [1] - 237:22
 lose [8] - 28:14,
64:25, 65:2, 65:8,
65:10, 65:13, 66:6,
193:29
 loss [9] - 25:13,
30:11, 30:13, 119:18,
150:14, 167:20,
168:24, 168:26
 losses [1] - 32:29
 lost [1] - 95:9
 Lough [1] - 102:7
 Louisiana [2] - 30:1,
192:14
 love [1] - 220:3
 low [8] - 20:20, 68:1,
74:28, 99:26, 106:27,
131:26, 135:1, 138:11
 low-lying [1] -
106:27
 LOWER [1] - 1:8
 lower [8] - 17:10,
21:8, 21:23, 21:28,
33:16, 108:11,
161:16, 230:20
 lowering [1] - 17:7
 LPG [2] - 36:20,
131:20
```

133:4, 138:27,

144:27, 148:22,

148:24

139:23, 144:4, 144:6,

locks [1] - 133:15

logistics [1] - 111:9

Ltd [5] - 5:3, 7:18, 7:20, 7:22, 124:22 lunch [2] - 113:29, 246:8 LUNCHEON [2] -114:3, 114:6 lunchtime [1] - 96:16 LUP [1] - 202:13 Lyden [14] - 141:20, 141:26, 165:16, 167:16, 168:11, 196:20, 200:11, 205:23, 208:27, 211:19, 214:10, 225:4, 225:6, 231:15 LYDEN [26] - 3:14, 141:22, 141:24, 165:14, 168:1, 197:24, 198:1, 198:14, 199:10, 199:26, 201:10, 201:25, 216:29, 217:11, 225:9, 225:14, 225:18, 225:24, 226:3, 226:7, 226:19, 226:22, 226:27, 227:14, 228:7, 228:13 Lyden's [1] - 231:7 lying [1] - 106:27 LYNCH [9] - 2:14, 168:16, 168:19, 169:8, 217:15, 218:14, 218:22, 219:3, 219:14 Lynch [6] - 168:16, 168:19, 217:1, 217:7, 217:10, 217:15 Lynch's [1] - 217:12

М

machine [1] - 238:29 MACINTYRE [2] -124:9, 141:8 MacIntyre [44] - 3:12, 59:16, 59:22, 59:24, 60:16, 60:18, 80:21, 101:3, 103:16, 112:7, 113:20, 113:28, 123:17, 123:20, 123:21, 123:26, 124:6, 124:12, 124:13, 141:10, 166:18, 166:19, 170:15, 170:24, 173:29, 175:13, 177:25, 177:28, 178:23, 179:5, 179:12, 181:6,

181:19, 184:9,	2:30, 3:30, 3:32	202:9, 202:17	84:11	120:7, 120:24,
184:11, 184:12,	man [2] - 123:29,	Mariner [1] - 125:26	materials [2] -	121:29, 122:5, 122:8,
185:5, 185:6, 192:5,	221:6	maritime [1] - 136:21	125:20, 136:27	122:21, 139:6,
195:29, 196:9,	managed [3] - 97:21,	Maritime [1] - 126:5	mathematicians [1] -	139:15, 139:29,
200:21, 238:28,	158:19, 222:14	marked [1] - 243:29	172:15	140:8, 166:20, 171:8,
239:24	management [1] -	market [78] - 6:26,	MATHESON [1] -	182:20, 184:5,
MacIntyre's [1] -	160:25	7:12, 15:26, 16:3,	2:11	184:25, 184:26,
184:4	Manager [2] - 117:6,	16:13, 17:6, 17:18,	matter [32] - 32:11,	185:8, 186:14, 187:4,
madame [1] - 196:19	125:2	17:22, 17:27, 18:6,	34:25, 34:28, 41:20,	187:12, 187:23,
Madame [2] -	manager [1] - 124:28	18:23, 18:25, 19:13,	70:7, 73:18, 83:19,	189:1, 191:14, 192:9,
197:19, 197:25	Managing [1] - 97:18	19:15, 20:6, 20:20,	94:19, 161:25,	194:19, 196:8,
MAHONY [1] - 2:18	mandate [2] - 36:24,	20:24, 20:25, 21:2,	170:28, 173:20,	198:27, 199:19,
mailed [1] - 42:1	194:13	21:5, 21:7, 21:12,	174:14, 174:20,	200:3, 200:26,
main [9] - 30:26,	mandates [1] - 51:26	21:15, 21:16, 21:22,	174:25, 182:10,	201:24, 201:26,
30:27, 44:19, 50:29,	manmade [1] -	21:27, 22:5, 22:24,	182:25, 196:18,	203:19, 203:29,
51:2, 91:10, 104:18,	128:29	23:24, 23:25, 24:14,	200:24, 203:7,	205:16, 205:17,
151:13, 156:22	manner [8] - 2:29,	24:20, 25:24, 26:20,	204:21, 204:29,	206:1, 206:22,
Main [1] - 120:20	3:31, 22:6, 136:15,	28:19, 29:5, 29:20,	205:5, 205:9, 205:23,	206:27, 207:6,
maintain [6] - 20:10,	143:26, 144:14,	56:23, 56:28, 58:1,	206:25, 206:26,	207:15, 207:22,
40:7, 146:5, 146:15,	153:9, 159:8	58:2, 58:6, 58:21,	213:6, 219:19,	207:23, 208:6,
146:21, 146:25	manoeuvring [3] -	64:29, 67:13, 67:29,	232:21, 234:9,	208:11, 209:3,
maintained [2] -	52:5, 103:9, 126:4	68:3, 68:25, 68:27,	234:22, 237:19	210:17, 211:16,
25:21, 158:15	map [4] - 76:19,	69:4, 69:9, 70:9,	matters [10] - 53:4,	211:17, 211:27,
maintaining [4] -	147:23, 147:28	70:10, 70:12, 70:15,	64:3, 126:21, 127:19,	212:2, 212:27, 213:1,
6:28, 87:1, 147:11,	maps [2] - 147:22,	70:22, 70:29, 71:2,	173:22, 203:1, 204:3,	214:7, 217:17,
147:12	244:1	71:9, 71:17, 71:18,	207:29, 208:2, 224:20	217:23, 218:17,
maintenance [1] -	Marathon [9] -	72:15, 73:11, 74:9,	Matthew [1] - 6:8	218:27, 219:6,
86:21		74:20, 74:26, 74:27,	maximises [2] -	219:19, 220:12,
Maintenance [1] -	185:17, 187:5, 187:10, 187:11,	95:24, 98:6, 105:26,	143:29, 144:18	221:14, 230:9, 231:3,
130:23		120:20, 137:18,	Maximising [1] -	231:16, 231:22,
majeure [1] - 73:22	187:22, 188:8, 188:12, 189:10,	158:12, 193:16,	144:17	234:22, 237:26,
Major [1] - 36:5	189:14	239:15, 244:22,	maximum [3] -	243:9, 244:25, 245:3,
•		245:13	146:5, 170:19, 170:22	245:20, 245:25,
major [35] - 9:3, 9:26,	Marathon's [1] -	Market [1] - 70:14	Mayo [1] - 95:22	246:15
10:24, 11:27, 14:24,	187:21	marketer [1] - 9:20	mayor [4] - 47:10,	McElligott's [2] -
18:12, 47:19, 48:4,	March [6] - 85:20,	marketplace [7] -	47:13, 47:25, 48:6	203:15, 246:12
102:26, 107:12,	85:23, 86:1, 86:2,	12:19, 14:19, 16:6,	mayoral [1] - 48:10	McMullan [4] -
107:17, 109:18,	147:16, 207:4	23:4, 25:5, 69:5,	Mc(78:22, 78:23, 79:19,
111:2, 126:16, 145:4,	marine [37] - 16:8,	175:29	INTERJECTION [1] -	82:3
148:17, 154:28,	99:11, 99:20, 100:22,	markets [19] - 11:20,	116:12	mean [29] - 21:23,
156:14, 157:4, 150:11, 162:22	101:10, 102:27,	11:26, 15:28, 16:6,	McElligott [128] -	23:9, 30:2, 42:17,
159:11, 162:22,	104:23, 104:29,	17:28, 21:19, 21:20,	• • •	44:1, 46:6, 68:13,
164:28, 169:13, 197:3, 197:23,	107:23, 108:3,	22:14, 23:18, 23:28,	2:13, 2:16, 3:11, 38:26, 38:27, 42:12,	69:15, 79:10, 79:16,
	115:18, 124:16,	66:16, 68:4, 70:3,		88:25, 90:15, 90:20,
198:19, 199:3, 199:4,	125:16, 125:26,	70:6, 71:15, 72:9,	43:11, 43:24, 47:28,	90:23, 93:28, 94:5,
209:9, 210:20, 211:1,	125:27, 126:2,	73:6, 111:19, 127:15	48:14, 48:17, 49:22,	99:26, 111:11,
212:6, 213:13, 230:19, 238:13	126:10, 126:11,	marry [1] - 18:24	52:11, 53:8, 53:23, 55:21, 56:14, 57:11	119:10, 168:6,
	126:12, 126:19,	mass [3] - 144:1,	55:21, 56:14, 57:11,	175:23, 185:17,
majority [2] - 131:15, 144:22	127:16, 127:18,	144:19, 152:16	59:26, 60:21, 61:2,	190:13, 197:21,
	127:23, 137:14,	massive [1] - 14:2	61:24, 62:2, 62:15,	197:26, 215:19,
Malahide [1] -	156:5, 171:27, 172:9,	Master [4] - 125:24,	62:18, 62:28, 64:11, 64:20, 66:12, 67:20,	218:14, 232:28, 241:4
101:23	172:17, 198:5, 198:8,	125:26, 141:28,		meaning [1] - 66:7
Malaysia [3] - 10:5,	200:6, 201:14,	200:24	68:13, 69:12, 71:16,	meaningful [1] -
14:27, 36:6	209:23, 211:28,		72:27, 73:13, 75:1,	214:15
Mallon [2] - 239:6,	212:3, 212:6, 214:25	Masters [1] - 5:6	75:10, 75:14, 76:3,	means [16] - 11:20,
240:10	Marine [16] - 110:17,	material [9] - 7:5, 35:5, 56:24, 76:28,	76:5, 89:24, 89:27,	13:3, 44:21, 93:14,
Mallow [6] - 96:8,	124:17, 124:28,	140:17, 174:7,	90:15, 90:20, 115:9, 115:15, 115:25	93:29, 94:24, 174:19,
226:26, 228:11,	126:1, 135:14, 137:8,		115:15, 115:25, 116:13, 116:17	202:24, 204:16,
229:18, 229:24,	137:29, 138:5, 174:4,	184:15, 184:19, 213:8	116:13, 116:17, 117:18, 117:21,	213:23, 216:8,
229:29	181:24, 181:28,	Material [5] - 61:5,	117:10, 117:21,	216:23, 218:2,
Malone [4] - 2:28,	200:7, 200:29, 202:7,	61:20, 61:21, 82:25,	111.20, 111.20,	

116:17, 116:19, 117:2 223:20, 240:5, 242:26 99:11, 99:14, 121:12, 105:15, 114:20, mistakes [1] - 60:10 meantime [1] -155:10 136:5, 166:7, 179:29, morning [11] - 4:5, mitigate [1] - 72:24 metal [1] - 86:4 189:25 183:13, 188:26, mitigation [5] - 47:5, 4:22, 39:4, 82:17, methane [2] - 61:22, 192:27, 198:6, 203:6, 172:8, 190:25, measure [3] -49:9, 162:8, 163:5, 216:3, 216:4, 218:25, 195:17, 236:17, 150:19, 235:29, 79:4 163:7 237:15 235:6 237:4, 238:5, 246:21 method [5] - 27:21, mixer [1] - 55:3 Mike [1] - 120:13 most [22] - 13:2, measures [2] - 49:9, 138:17, 181:29, mixes [1] - 54:14 146:4 190:4, 222:13 miles [3] - 98:14, 16:6, 29:28, 36:17, mixtures [1] - 53:27 methodology [2] -140:11, 184:7 39:23, 51:17, 104:17, meat [1] - 120:20 MMBtu [1] - 29:16 media [1] - 160:27 milestone [1] -127:12, 128:8, 129:6, 94:16, 99:7 moderate [2] -129:24, 132:11, 156.14 medium [1] - 189:29 Methodology [1] -132:13, 140:19 Milford [23] - 19:29, 133:4, 134:21, 109.21 Meehan [1] - 41:19 modern [7] - 83:2, methods [5] - 4:11, meet [13] - 11:21, 65:18, 135:12, 137:13, 167:23, 100:19, 103:25, 135:13, 170:12, 193:21, 238:17, 14:9, 18:23, 20:8, 92:16, 216:9, 216:13, 197:12, 204:11, 241:20, 242:1, 242:9, 216:17 170:16, 190:3, 60:20, 67:19, 133:27, 204:14, 216:17 242:18 191:20, 191:22, 146:1, 156:25, 157:8, metre [5] - 71:4, modified [4] - 45:18, 217:19, 218:1, 218:4, Most [1] - 42:22 140:26, 223:12, 193:15, 197:16, 45:21, 131:14, 132:26 218:5, 218:16, motivation [1] -223:13, 223:22 199:17 modifying [1] - 30:29 metres [18] - 71:3, 218:23, 218:28, meeting [9] - 26:22, module [15] - 38:14, 52:17, 58:27, 59:9, 90:1, 90:2, 90:3, 90:4, 219:5, 220:16, Motor [1] - 124:16 52:29, 53:1, 82:13, 220:23, 222:12, Mount [1] - 106:11 63:3, 114:26, 157:19, 99:26, 103:4, 103:6, 83:16, 141:14, 222:21, 222:29, Mountains [1] -215:9, 215:25 103:23, 121:27, 170:26, 199:12, 235:18 13:19 129:11, 130:12, meeting' [1] - 47:26 201:18, 203:2, 203:8, million [11] - 8:2, 130:15, 130:16, mounted [2] meetings [1] - 51:9 203:18, 214:5, 222:1, 223:10, 223:19, 29:13, 29:17, 32:9, 133:23, 207:5 meets [1] - 112:24 222:10 74:16, 74:19, 86:7, 223:24 mouth [1] - 223:16 member [11] - 5:7, modules [1] - 35:17 98:14, 102:27, Mexico [7] - 12:4, move [7] - 18:10, 16:24, 20:10, 37:10, Moffat [1] - 186:18 160:20, 161:2 13:18, 30:1, 50:11, 23:6, 48:14, 52:11, 37:12, 37:15, 59:17, molecular [3] millions [1] - 175:12 134:4, 135:2, 138:12 69:19, 188:3, 212:25 67:15, 124:17, 85:18, 85:23, 86:2 mind [8] - 47:21, Mexico's [1] - 13:21 moved [3] - 75:29, 124:18, 142:2 molecules [1] -Michael [4] - 116:11, 88:27, 118:3, 120:12, 120:28, 120:29 Member [3] - 63:6, 191:5 127:16, 146:24, 117:17, 117:25, movement [1] -63:7, 63:8 moment [19] - 27:15, 148:29 217:4, 226:24 members [3] - 36:7, 132:23 41:3, 44:15, 57:17, MICHAEL [3] - 2:19, mine [2] - 88:22, movements [3] -37:9, 42:29 69:12, 69:20, 71:21, 117:3 membership [1] -3:11, 117:21 34:22, 131:12, 134:19 121:2, 166:8, 180:13, microphone [1] mines [1] - 195:4 moving [2] - 46:23, 37:17 187:16, 188:1, 192:4, minimise [2] - 99:26, mention [8] - 19:21, 122:24 202:6, 208:12, 222:6, 102:20 132:22 35:24, 40:13, 41:9, mid [2] - 152:6, 231:2, 233:4, 234:3 MR [382] - 1:15, 2:4, minimum [1] - 99:25 42:25, 62:6, 88:13, 193:25 Monday [2] - 119:20, 2:8, 2:9, 2:13, 2:14, Minister [9] - 208:7, Mid [6] - 152:13, 2:15, 2:16, 2:17, 2:18, 227:4 213:10 154:22, 156:2, 162:1, 222:20, 243:16, 2:18, 2:19, 2:19, 2:20, mentioned [19] -Money [2] - 103:2, 16:25, 18:3, 20:9, 165:5 243:17, 244:17, 3:5, 3:8, 3:9, 3:11, 106:10 244:18, 244:26, 28:11, 39:8, 42:3, Mid-West [1] money [3] - 157:14, 3:12, 4:14, 4:18, 4:21, 245:1, 245:7 38:6, 38:11, 38:20, 71:8, 75:21, 79:22, 152:13 239:16, 239:21 minority [2] - 10:9, 38:27, 39:1, 42:12, middle [3] - 19:26, 79:24, 90:1, 90:7, monitors [1] -10:12 43:11, 43:12, 43:24, 92:22, 107:29, 33:27, 83:21 103:19 minute [4] - 96:15, 47:6, 47:27, 47:28, 120:14, 166:20, mideast [1] - 151:12 monopoly [1] - 58:3 48:6, 48:14, 49:22, 168:12, 180:18, midsized [1] - 19:27 165:19, 168:3, 193:15 month [3] - 26:28, 51:27, 52:11, 53:2, minutes [1] - 211:27 238:29 Midwest [3] - 230:15, 50:21, 71:4 minutia [1] - 234:8 53:8, 53:23, 55:21, MEP [1] - 109:9 231:11, 231:14 monthly [1] - 70:13 57:11, 59:26, 61:2, misleading [1] merchant [2] midwest [1] - 165:10 months [12] - 50:4, 25:17 61:13, 61:24, 61:27, 244:20, 245:10 Midwestern [1] -50:7, 50:10, 50:14, 62:2, 62:18, 62:28, miss [1] - 246:4 merely [1] - 219:27 231:6 50:24, 71:13, 120:23, 64:11, 64:14, 64:20, missed [1] - 184:23 merge [2] - 175:14, might [33] - 19:21, 132:10, 175:28, 65:11, 66:12, 66:23, 176:29 38:17, 43:5, 45:24, missing [2] - 10:11, 176:1, 185:25, 195:7 67:20, 67:25, 68:13, 78:7 message [1] -48:24, 56:29, 58:22, moored [2] - 130:8, 68:20, 69:12, 69:23, Mississippi [1] -121:15 60:24, 61:25, 65:11, 139:22 71:16, 71:23, 72:27, 73:8, 73:26, 74:4, messages [1] mooring [3] - 111:5, 73:1, 73:13, 73:15, 74:21, 89:20, 96:18, mistake [1] - 171:10 151:13 126:27, 131:10 75:1, 75:6, 75:10, met [6] - 47:22, 49:8, 98:3, 99:3, 101:9, mistaken [1] - 183:8 Moran [4] - 116:14,

75:13, 75:14, 75:19,	192:20, 194:19,	240:20, 240:25,	12:6, 39:5, 43:13,	185:24, 186:17,
76:3, 76:9, 77:25,	195:15, 195:20,	241:14, 241:18,	62:16, 87:14, 87:17,	194:9, 238:8, 240:13
77:28, 78:6, 78:9,	195:29, 196:3, 196:8,	241:19, 241:26,	96:1, 117:24, 124:13,	nature [11] - 24:14,
79:6, 80:5, 83:18,	196:9, 196:13,	241:28, 242:1, 242:4,	141:25, 168:18,	32:15, 70:25, 84:12,
84:24, 85:4, 85:10,	197:25, 198:27,	242:6, 242:8, 242:13,	196:19, 208:22	174:1, 175:4, 175:6,
86:11, 87:7, 87:16,	199:19, 200:3,	242:15, 243:9,	named [1] - 1:24	177:6, 183:23,
87:24, 88:16, 89:2,	200:21, 200:26,	244:12, 244:25,	namely [4] - 11:24,	212:15, 234:26
89:7, 89:20, 89:27,	201:24, 201:26,	244:29, 245:3, 245:6,	129:20, 151:14,	Naval [1] - 223:23
90:9, 90:15, 90:20,	202:28, 203:10,	245:17, 245:20,	170:14	Navigation [2] -
91:1, 91:4, 91:5, 92:3,	203:19, 203:29,	245:25, 246:2,	names [1] - 85:27	125:29, 126:1
92:14, 92:20, 93:18,	204:5, 204:29, 205:3,	246:15, 246:19,	narrow [5] - 30:25,	navigation [2] -
93:29, 94:7, 94:14,	205:5, 205:13,	246:24	44:6, 44:18, 45:12,	43:28, 44:5
94:21, 94:26, 95:13,	205:17, 206:1, 206:4,	MRS _[1] - 2:17	129:10	navigational [2] -
95:27, 96:3, 96:18,	206:11, 206:22,	MS [46] - 2:14, 2:15,	National [29] - 5:7,	46:28, 46:29
97:3, 97:15, 97:18,	206:24, 207:15,	2:16, 3:14, 39:4,	29:15, 70:14, 94:9,	NDP [1] - 164:1
102:19, 113:18,	207:20, 207:23,	42:11, 78:22, 79:19,	95:22, 96:4, 108:9,	near [18] - 10:14,
114:23, 115:6, 115:9,	207:27, 208:6,	82:3, 85:14, 85:28,	126:5, 135:13, 143:1,	26:19, 58:3, 60:28,
115:15, 115:22,	208:19, 208:24,	87:14, 120:13,	143:2, 149:14, 151:3,	99:5, 103:13, 106:22,
115:25, 115:29,	209:19, 210:17,	121:21, 121:24,	151:6, 151:8, 151:25,	108:14, 110:20,
116:7, 116:13,	210:22, 211:17,	141:22, 165:14,	152:7, 153:6, 153:27,	111:5, 111:12,
116:17, 116:21,	211:24, 212:2,	166:17, 168:1,	156:8, 156:9, 156:11,	112:17, 130:18,
116:25, 117:3, 117:6,	212:13, 212:27,	168:10, 168:27,	156:19, 159:2, 165:6,	138:27, 139:11,
117:11, 117:15,	214:7, 214:21,	169:19, 169:22,	191:14, 191:16	185:16, 185:21,
117:21, 117:23,	215:23, 216:16,	197:24, 198:1,	national [23] - 4:9,	186:20
120:24, 122:5, 122:8,	217:15, 217:23,	198:14, 199:10,	20:8, 20:11, 24:28,	nearby [1] - 100:6
122:23, 122:26,	218:14, 218:17,	199:26, 201:10,	38:16, 58:9, 139:20,	nearest [1] - 106:28
123:18, 123:24,	218:22, 218:27,	201:25, 215:1,	142:19, 142:21,	nearly [4] - 98:10,
123:25, 124:1, 124:3,	219:3, 219:6, 219:14,	216:13, 216:29,	145:17, 145:29,	134:5, 138:4, 181:23
124:9, 124:12, 141:8,	219:19, 219:22,	217:11, 225:9,	150:2, 152:10,	necessarily [5] -
141:12, 141:19,	220:12, 220:21,	225:14, 225:18,	152:18, 153:2,	36:4, 72:16, 174:15,
141:24, 168:16,	221:2, 221:9, 221:14,	225:24, 226:3, 226:7,	153:20, 155:17,	197:21, 220:16
168:19, 169:8,	221:21, 222:2, 222:8,	226:19, 226:22,	157:1, 157:3, 163:21,	
170:10, 170:24,	222:11, 224:16,	226:27, 227:14,	163:24, 164:3, 164:4	necessary [19] -
171:4, 171:8, 171:9,	224:19, 225:2,	228:7, 228:13	national/	16:23, 16:27, 18:22,
171:14, 171:17,	225:11, 225:17,	MSDS [3] - 61:5,	international [1] -	28:8, 29:1, 55:16, 77:7, 134:8, 144:1,
175:3, 175:25, 176:4,	225:21, 225:26,	61:8, 61:11	152:15	144:19, 145:7,
176:13, 177:4, 177:8,	226:5, 226:17,	multidisciplinary [1]	nationally [2] -	145:10, 145:26,
177:9, 177:13,	226:20, 226:24,	- 142:11	153:12, 157:17	146:4, 150:18, 172:2,
177:20, 177:28,	227:2, 227:5, 227:8,	multimillion [1] -	nations [2] - 36:1,	233:8, 233:12
178:7, 178:23, 179:5,	227:10, 227:24,	171:23	238:11	necessity [1] -
179:12, 179:17,	228:10, 228:15,	multiple [2] - 66:11,	Natural [9] - 25:4,	174:18
179:24, 180:2, 180:7,	228:18, 229:13,	75:26	108:13, 123:1, 137:8,	
180:16, 180:20,	229:16, 229:21,	MURPHY [2] - 2:15,	138:5, 146:22,	need [54] - 4:8,
181:14, 181:16,	229:27, 230:3, 230:9,	169:22	146:25, 181:24,	15:23, 16:4, 17:3,
181:17, 182:4,	231:3, 231:9, 231:16,	Murphy [1] - 169:22	181:28	18:17, 27:7, 32:9,
182:13, 182:18,	231:22, 231:26,	must [18] - 2:29,	NATURAL [1] - 1:5	38:22, 46:12, 46:21,
182:20, 182:21,	232:10, 232:15,	3:30, 36:18, 36:20,	natural [45] - 5:12,	48:25, 55:2, 57:19, 57:21, 63:7, 74:3
182:23, 182:27,	232:20, 233:2, 233:9,	37:1, 66:15, 114:23,	,	57:21, 63:7, 74:3,
183:4, 183:18,	233:18, 233:22,	130:17, 130:22,	5:14, 8:17, 8:23, 9:22,	76:11, 87:20, 88:7,
183:27, 183:29,	233:29, 234:5,	146:1, 151:17,	11:29, 12:22, 12:25,	93:13, 93:16, 97:20,
184:12, 184:22,	234:18, 234:20,	151:19, 151:21,	13:1, 13:7, 15:13, 15:21, 17:6, 17:10,	108:9, 108:25,
184:26, 185:6, 185:8,	234:22, 235:15,	158:19, 207:2, 207:9,		118:13, 119:16,
185:29, 186:10,	236:10, 236:15,	208:5, 235:1	17:18, 19:9, 27:18, 28:2, 33:15, 33:23,	119:28, 121:10,
186:14, 186:23,	236:18, 236:19,	mutual [1] - 152:26	36:20, 39:12, 66:27,	129:4, 131:13, 134:26, 135:24
187:4, 187:8, 187:12,	236:21, 236:29,	Móna [1] - 157:26	70:1, 71:2, 71:11,	134:26, 135:24, 137:17, 143:10
187:19, 187:23,	237:9, 237:13,	mona [1] = 107.20		137:17, 143:10,
188:2, 188:8, 188:16,	237:26, 238:5,	NI	_ 71:28, 74:4, 74:16, 79:10, 81:24, 86:3,	144:28, 153:29, 154:10, 163:24
188:26, 189:1,	238:14, 238:17,	N	- 98:10, 104:6, 123:12,	154:10, 163:24, 164:4, 171:2, 185:23
190:18, 191:2,	238:19, 238:22,		150:23, 157:7, 159:4,	164:4, 171:2, 185:23,
191:14, 192:9,	238:26, 239:10,	N69 [1] - 108:9	185:13, 185:20,	185:26, 186:4, 190:14, 190:24,
192:15, 192:18,	239:16, 239:18,	name [14] - 4:23,	100.10, 100.20,	100.17, 100.24,

201:6, 221:28, 222:27, 226:14, 239:20, 240:4, 242:26, 245:25 needed [11] - 25:29, 28:23, 55:7, 120:5, 132:11, 151:19, 152:15, 194:21, 217:25, 229:1, 229:20 Needle [1] - 10:9 needs [17] - 4:16, 18:5, 18:24, 55:9, 69:9, 93:8, 108:7, 121:15, 138:18, 145:10, 147:7, 155:9, 155:21, 160:5, 182:1, 218:10, 227:13 negate [1] - 129:19 negative [1] - 26:13 negotiated [1] -20:26 negotiation [1] -73:19 Neighbouring [1] -105:22 neighbourliness [1] - 92:25 Netherlands [3] -12:4, 12:23, 13:29 network [23] - 8:8, 58:10, 145:26, 154:3, 188:14, 188:16, 190:5, 190:9, 191:26, 193:18, 193:21, 225:8, 225:19, 226:2, 226:8, 226:23, 227:3, 227:19, 228:6, 228:25, 229:4, 229:11, 230:6 Network [1] - 14:7 network" [1] - 226:4 networks [3] -145:18, 152:28, 162:4 never [17] - 23:8, 23:19, 31:15, 43:8, 61:6, 61:8, 68:6, 76:11, 76:21, 119:20, 180:29, 207:26, 208:9. 223:14. 232:2. 233:17, 236:6 nevertheless [2] -76:29, 77:15 New [11] - 5:19, 8:18, 9:15, 9:16, 14:28, 15:1, 80:13, 140:11, 140:19, 184:7, 184:16 new [22] - 13:4, 13:15, 14:5, 16:26, 16:28, 17:4, 24:14, 26:10, 43:6, 58:20,

80:3.86:23.93:6. 95:23, 119:10, 156:13, 160:21, 161:7, 161:8, 171:10, 174:27, 184:29 **news** [1] - 118:9 newspapers [1] -121:17 next [38] - 4:12, 10:21, 11:5, 14:12, 18:8, 28:5, 28:22, 29:22, 31:3, 38:9, 38:11, 42:28, 52:12, 53:1, 61:2, 79:19, 96:17, 105:1, 114:12, 119:18, 134:13, 135:22, 137:29, 138:25, 139:6, 139:15, 139:29, 140:8, 201:29, 203:2, 203:7. 203:17. 213:10, 217:9, 222:1, 222:9, 244:3, 246:18 NICOLA [1] - 2:10 Nigeria [2] - 14:25, 238:7 night [1] - 121:9 nine [2] - 124:28, 124:29 nitrogen [2] - 33:18, 55:8 nitrous [1] - 17:15 NMCI [1] - 126:6 nobody [2] - 42:6, 210:24 **NOEL** [1] - 2:14 Noel [3] - 168:16, 168:19, 217:15 noise [1] - 53:4 nology[1] - 239:25 Non [1] - 83:10 non [5] - 5:20, 7:29, 14:16, 132:26, 244:1 non-oil [1] - 14:16 non-recourse [1] -7:29 non-standard [1] -132:26

non-technical [2] -

Non-technical [1] -

none [6] - 28:10,

133:24, 194:11

42:21, 42:22, 131:2,

nonetheless [1] -

normal [1] - 20:4

normally [5] - 55:16,

72:2, 146:10, 193:24,

5:20, 244:1

83:10

60:26

13:24, 13:27, 118:4, 118:5, 118:13, 118:17, 119:11, 119:16, 119:28, 121:12, 121:18, 121:20, 122:12, 124:18, 132:5, 134:22, 150:9, 152:7, 152:13, 153:11, 154:19, 154:26, 159:11, 183:7, 186:26, 214:10 Northeast [1] - 183:7 northern [1] - 10:14 Northern [4] - 71:15, 152:27, 182:24, 182:26 northwest [1] - 74:22 Norway [6] - 10:15, 14:26, 26:8, 26:11, 28:13, 36:6 Norway's [1] - 14:4 Norwegian [1] - 29:4 nose [1] - 118:9 notably [1] - 16:27 note [19] - 25:2, 31:29, 32:2, 33:12, 35:23, 36:3, 36:8, 36:23, 36:25, 37:1, 39:29, 40:28, 45:24, 60:24, 69:2, 110:20, 136:7, 201:22, 240:15 noted [23] - 24:1, 24:10, 24:27, 24:29, 25:3, 25:6, 25:28, 28:10, 29:3, 29:12, 29:18, 31:28, 33:3, 36:15, 37:9, 55:27, 56:7, 56:15, 69:2, 106:17, 150:15, 172:10 notes [3] - 149:23, 150:12, 167:19 Nothing [1] - 31:7 nothing [7] - 13:25, 46:28, 55:2, 92:25, 136:8, 171:29, 228:13 notice [5] - 15:29, 55:21, 74:18, 77:6, 120:10 noticed [3] - 62:20, 78:29, 83:9 notified [1] - 232:24

194:8

north [11] - 21:17,

102:6, 102:7, 102:8,

186:7, 194:6, 195:3

North [30] - 10:3,

10:10, 12:23, 13:13,

150:22, 152:28,

noting [1] - 98:9 notion [1] - 68:1 2:19, 3:9, 114:23, notwithstanding [1] 115:6, 115:22, 116:7, 116:21, 117:3, 117:6, - 209:11 Notwithstanding [2] 117:11, 117:15 - 60:22, 164:2 November [4] -193:26, 202:1, 215:9, 202:13 245:17 nuclear [1] - 51:16 number [25] - 19:3, 19:10, 25:22, 29:29, 230:11 40:18, 60:19, 69:25, 69:27, 78:26, 84:26, 88:24, 99:1, 101:8, 107:2, 109:23, 110:11, 137:25, 150:16, 155:7, 169:9, 36:13, 54:1, 145:6, 186:28, 203:13, 211:13, 216:9, 234:26 numbering [1] -96:26 numbers [1] - 127:18 numerous [6] - 5:16, 5:17, 51:9, 118:6, 142:7, 223:27 0 O'Brien [1] - 37:23 o'clock [4] - 114:1, 246:6, 246:8, 246:20 O'CONNOR [1] -O'Connor [5] -20:18, 22:13, 24:1, 24:28, 55:22

O'Donagh's [1] -

O'Donovan [1] - 33:7

O'DONOVAN [1] -

O'MAHONY [2] -

O'NEILL [22] - 2:8,

4:14, 38:11, 38:20,

53:2, 96:18, 97:3,

113:18, 123:18,

123:25, 141:12,

141:19, 206:24,

207:20, 207:27,

211:24, 212:13,

227:5, 227:10

123:16, 141:11

114:14, 114:21,

O'Sullivan [5] -

115:4, 116:5, 116:10

221:9, 221:21, 222:8,

O'Neill [3] - 38:9,

120:20

2:18

2:17, 2:17

146:3, 146:15, 146:21, 146:24, 148:19, 148:21, 148:28, 157:16, 158:4, 159:2, 198:22 objectives [30] -36:2, 142:26, 143:10, 143:14, 143:17, 143:22, 143:27, 144:11, 144:15, 146:29, 147:5, 149:13, 151:1, 153:21, 154:20, 156:1, 156:18, 156:22, 159:20, 163:9, 164:17, 165:1, 165:4, 198:24, 198:25, 199:18, 201:21, 210:13, 230:15, 230:17 objector [1] - 30:24 **OBJECTORS** [5] -2:13, 3:6, 3:16, 39:2, 166:15 objectors [10] -34:18, 35:21, 35:26, 35:29, 36:26, 36:28, 37:8, 62:4, 62:8, 110:20 obligation [5] -20:19, 20:24, 21:12, 66:20, 74:7 obligations [2] -243:18, 243:21 obliged [2] - 63:14, observation [3] -60:17, 193:11, 246:1 observations [3] -

29:27, 162:26, 163:13

observe [2] - 70:1,

O'SULLIVAN [11] -

object [6] - 65:9,

objected [1] - 44:2

objection [2] - 67:23,

Objective [1] - 146:3

objective [15] - 25:9,

118:19. 119:15.

119:23, 119:28,

objecting [3] -

118:14, 121:14,

246:1 124:29 36:6 obstacle [6] - 24:4, offices [2] - 80:13, 24:5, 33:5, 34:18, ON [4] - 1:6, 1:16, operator [5] - 58:2, onerous [1] - 22:4 51:4, 51:5 official [2] - 119:22, 4:1, 97:15 ones [4] - 83:15, 58:3, 175:20, 187:1, obstacles [1] - 58:16 242:22 181:2 onboard [1] - 66:1 126:10, 132:9, 216:19 obstructing [1] offloading [4] -Once [1] - 70:9 onshore [14] - 50:18, operators [7] -58:10, 140:2, 166:21, 43:29 125:22, 178:1, 178:3, once [9] - 21:11, 55:1, 99:14, 100:11, obstruction [1] -178:5 71:4, 108:25, 121:20, 105:2, 128:23, 129:8, 166:27, 167:3, 188:9, 123:3, 215:15, 129:17, 131:9, 45:10 offshore [46] - 9:29, Operators [3] obtained [1] - 127:21 31:29, 38:15, 40:27, 215:20, 223:15, 132:18, 137:15, 50:18, 50:20, 78:15, 139:8, 139:25, 184:3 58:29, 100:29, 125:12 obviate [2] - 70:10, 241:16 202:5 110:2, 110:3, 110:27, oncoming [1] - 57:19 onward [1] - 67:22 opinion [9] - 51:8, OPEC [4] - 36:1, 60:13, 164:2, 164:29, 111:7, 112:9, 112:14, One [10] - 20:17, obvious [5] - 73:8, 113:21, 113:22, 73:22, 78:29, 82:7, 36:4. 36:8 205:13, 221:5, 226:1, 172:27, 194:20, 125:5, 126:20, 128:1, 229:22, 230:8 202:5. 237:5 90:1, 145:15, 168:10, Open [1] - 93:29 128:4, 128:6, 128:10, 169:11, 173:5, 217:25 opinions [1] - 181:3 obviously [6] open [17] - 35:7, 129:28, 131:6, one [111] - 5:28, 41:11, 58:1, 58:12, opportunities [1] -10:11, 80:1, 97:6, 131:18, 132:3, 132:5, 9:10, 15:15, 19:1, 70:6, 93:24, 93:27, 150:3 168:28, 228:5, 229:11 132:6, 132:16, 19:24, 30:4, 40:14, 94:9, 102:4, 102:5, opportunity [8] -Obviously [2] - 73:8, 132:24, 133:3, 133:6, 40:24, 43:21, 44:25, 102:6, 102:7, 102:8, 54:2, 115:1, 171:20, 179:24 occasion [1] -133:7, 134:3, 135:26, 46:10, 49:11, 50:5, 120:3, 213:10, 237:23 172:1, 201:8, 204:9, 135:26, 138:3, 51:5, 51:14, 52:14, opened [3] - 12:8, 205:18, 205:28 139:16, 139:23, 53:28, 54:5, 55:17, occasional [2] -120:22, 121:3 oppose [1] - 48:1 140:10, 141:4, 57:9, 60:17, 64:15, opposed [15] -180:8, 180:9 opens [1] - 51:11 170:28, 178:1, 64:20, 67:25, 71:2, 29:28, 47:9, 47:10, operate [11] - 18:18, occasions [1] -181:22, 184:3, 184:7, 72:11, 72:22, 74:8, 47:12, 47:13, 47:15, 31:10, 32:21, 67:29, 176:22 238:26 74:12, 75:23, 75:27, 93:21, 140:5, 160:3, 47:17, 47:18, 47:19, occur [3] - 23:20, Offshore [3] - 50:25, 75:29, 76:14, 76:19, 166:23, 167:5, 47:25, 48:7, 138:20, 132:9, 193:10 128:15, 132:15 77:5, 77:19, 77:23, 182:2, 243:22 occurred [1] - 75:24 174:13, 239:1 Ofgem [1] - 26:23 79:17, 79:29, 80:10, opposing [1] - 45:11 ocean [4] - 134:19, operated [14] - 6:6, often [4] - 70:15, 81:28, 85:13, 86:17, 6:7, 9:12, 30:5, 87:18, opposite [1] - 51:17 137:9, 137:12, 137:19 71:29, 74:20, 176:23 88:8, 90:8, 91:10, 123:9, 125:8, 140:5, opposition [3] -Ocean [5] - 33:28, oftentimes [2] - 72:3, 93:11, 95:14, 95:28, 166:24, 166:28, 48:1, 48:9, 52:3 137:6, 140:10, 113:25, 113:28, 167:6, 167:10, optimal [2] - 99:8, 140:15, 184:6 Ogie [4] - 116:13, 120:9, 120:10, 167:13, 187:1 109:2 oceans [1] - 136:20 116:17, 116:18, 117:2 121:12, 122:28, Optimal [1] - 130:11 operates [8] - 9:14, October [5] - 26:12, 123:17, 128:9, oil [50] - 7:25, 8:15, 9:15, 9:17, 9:26, 10:4, optimising [1] -62:24, 63:3, 137:8, 129:19, 129:25, 8:16, 8:22, 9:4, 9:10, 80:9, 193:13, 193:20 127:18 160:13 134:12, 134:13, 9:17, 9:18, 9:22, 9:26, **OF** [11] - 1:7, 1:8, operating [12] - 9:2, optimistic [3] - 21:2, 9:28, 10:2, 12:28, 136:23, 141:12, 10:19, 30:3, 42:16, 38:6, 113:14, 117:15, 183:16, 183:24 145:21, 150:25, 13:9, 13:11, 13:22, 42:17, 42:23, 87:3, 141:8, 165:14 optimum [1] - 125:19 158:10, 169:13, 14:6, 14:16, 16:28, 93:22, 129:29, opting [1] - 216:27 offer [10] - 16:7, 170:18, 172:22, 34:13, 36:10, 71:9, 132:16, 134:25, option [2] - 216:28, 22:2, 25:23, 57:29, 173:16, 174:11, 72:4, 72:5, 72:6, 78:1, 189:17 58:11, 70:25, 175:25, 217:21 174:25, 176:10, 78:3, 78:11, 80:11, operation [7] -175:28, 176:8, 221:4 options [2] - 110:11, 179:21, 180:29, 88:27, 95:1, 125:4, 40:22, 40:24, 51:29, offered [2] - 20:6, 137:25 185:11, 188:23, 125:5, 125:6, 125:28, 133:17, 139:11, 30:9 oral [9] - 91:14, 190:15, 191:15, 128:4. 130:24. 158:12, 176:16 116:23, 139:6, offering [2] - 72:19, 193:10, 196:18, 131:18, 134:15, operational [5] -139:15, 139:29, 176:8 197:6, 197:8, 204:20, 134:22, 139:20, 21:11, 128:10, 131:4, offerings [1] - 70:22 140:8, 203:5, 213:9, 216:28, 217:27. 159:8, 161:6, 176:23, 137:15, 179:9 213:20 offers [2] - 18:2, 218:9, 218:12, 176:24, 224:21, 238:9 operationally [1] -175:21 **ORAL** [4] - 1:1, 4:18, 218:25, 219:22, Oil [1] - 187:11 136:27 office [9] - 35:10, 124:9. 141:22 220:1, 223:1, 223:2, Okume [1] - 9:29 operations [16] - 8:8, order [17] - 21:27, 41:12, 41:17, 41:25, 223:3, 223:4, 223:14, old [5] - 30:26, 9:5, 20:5, 28:29, 22:23, 27:6, 29:15, 42:1, 82:10, 84:1, 223:15, 223:22, 43:28, 44:19, 45:5, 31:21, 32:23, 32:25, 34:6, 55:10, 57:6, 84:5, 222:19 224:4, 230:10, 86:22 57:28, 89:23, 98:24, Office [5] - 32:4, 94:6, 123:3, 143:11, 234:27, 235:4, older [1] - 13:14 103:20, 104:29, 146:5, 156:24, 41:6, 167:24, 168:7, 236:13, 236:23, oldest [2] - 30:3, 124:24, 131:18, 156:28, 157:4, 169.26 236:25, 239:29, 131:29 172:29, 234:27, Officer [2] - 4:24, 6:4 242:9, 242:18, 243:9, Oman [2] - 14:27, Operations [1] -239:12 officer [1] - 59:18

7:17, 24:3, 24:4, 24:6, 8:12, 32:10, 32:12 29:16, 29:17, 39:15, ordinary [2] - 83:24, Pasmaquadi [1] -221:5 37:13, 53:11, 55:24, parish [4] - 169:27, 215:5 102:28, 158:14, organisation [5] -75:4, 75:6, 75:10, 170:2, 170:4 pass [1] - 24:22 201:5, 223:19 97:25, 107:4, 107:21, percentage [5] -37:16, 171:23, parity [1] - 26:19 passage [1] - 45:9 39:27, 47:28, 48:3, 171:25, 183:5, 219:24 160:2, 214:28 Park [1] - 135:13 passing [2] - 35:23, owner [2] - 111:26, 189:13, 238:19 organisation's [1] part [39] - 11:9, 240:15 perfect [6] - 59:11, 124:22 16:14, 21:14, 24:18, 37:18 past [5] - 84:8, 86:6, ownership [5] - 9:13, 27:4, 32:16, 32:23, 60:4, 60:27, 60:28, organised [1] - 8:9 96:13, 178:9, 222:14 32:20, 105:18, 60:29, 194:23 origin [1] - 53:26 36:24, 51:21, 53:1, Pat [2] - 202:23, 111:26, 214:23 63:12, 65:22, 74:21, perform [3] - 51:24, original [4] - 12:2, owning [3] - 57:26, 157:29, 194:16 45:15, 47:2, 52:22 79:23, 81:23, 82:6, patented [1] - 133:14 93:20. 93:22 performance [4] -84:15, 85:19, 91:16, originally [1] - 45:1 pause [1] - 166:9 owns [1] - 9:14 92:27, 95:7, 101:16, 81:13, 125:21, **ORMSBY** [1] - 2:11 pay [9] - 22:24, 152:14, 156:28 otherwise [5] - 17:2, oxides [3] - 17:15, 103:21, 110:26, 22:26, 22:29, 23:5, 114:12, 127:16, performed [1] -26:16, 34:12, 60:1, 33:18 24:21, 68:8, 68:11, 135:14, 144:7, 242:23 232:22 68:17, 238:2 147:27, 148:24, P Perhaps [2] - 227:5, Otherwise [1] paying [3] - 26:14, 184:23, 188:23, 134:10 91:7, 239:22 188:24, 201:8, perhaps [17] - 7:29, ought [2] - 51:12, pays [1] - 21:6 Pacific [2] - 33:26, 228:23, 240:22, 10:29, 11:25, 38:23, 195:24 Peace [2] - 237:5, 33:28 242:11, 242:21, ourselves [4] - 54:5, 237:6 76:25, 82:29, 91:24, pack [1] - 19:27 246:18 114:29, 115:1, 174:15, 201:23, 244:7 peak [5] - 26:22, Paddy [5] - 135:20, participant [1] -123:20, 141:15, outcome [1] - 195:5 26:24, 27:17, 29:9, 138:23, 142:24, 37:15 177:25, 181:10, outcomes [1] - 25:25 194:10 158:22, 159:3 participate [1] -203:6, 203:17, 207:5, peakshaving [1] outcry [1] - 81:1 PADDY [1] - 3:8 201:8 212:25 outlined [4] - 101:10, 10:9 page [7] - 137:10, particular [27] period [29] - 12:9, peat [1] - 145:25 105:2, 110:6, 144:21 166:18, 166:20, 20:25, 25:25, 43:21, 12:20, 26:13, 28:27, outlines [1] - 151:13 Pelamis [1] - 137:13 167:17, 168:3, 225:6, 76:19, 77:22, 77:23, 28:28, 32:27, 50:1, output [2] - 14:2, Pembrokeshire [2] -225:11 87:6, 89:18, 91:12, 50:21, 52:15, 52:24, 158:5 135:13, 135:14 **PAGE** [1] - 3:3 91:16, 92:1, 98:28, 52:25, 60:7, 74:8, outset [1] - 114:22 penalties [1] - 26:15 Panigaglia [1] -143:22, 152:29, 74:24, 87:26, 88:5, outside [4] - 29:29, people [51] - 42:27, 139:10 163:6, 164:27, 165:8, 111:22, 130:27, 43:10, 51:17, 52:26, 144:25, 211:4, 238:3 Paper [28] - 16:20, 173:13, 173:26, 134:11, 150:24, overall [10] - 48:24, 54:21, 64:1, 70:16, 20:9, 24:9, 25:2, 25:5, 177:9, 183:20, 186:3, 153:23, 157:22, 127:17, 143:7, 83:23, 84:13, 88:19, 55:26, 56:7, 56:14, 197:13, 230:16, 158:6, 158:13, 143:22, 144:11, 88:28, 96:16, 113:29, 56:17, 100:28, 123:2, 235:17, 242:21, 168:25, 190:10, 118:11, 118:14, 152:16, 157:16, 123:5, 158:21, 244:28 193:3, 193:4, 193:24 118:18, 118:27, 158:16, 187:24, 158:25, 158:26, particularly [11] periods [5] - 27:17, 118:28, 119:27, 210:29 163:28, 164:2, 164:8, 6:25, 13:10, 15:18, 50:12, 70:26, 111:13, 121:18, 121:24, overhead [3] - 91:28, 164:9, 173:12, 54:24, 72:1, 113:21, 130:25 121:26, 121:29, 93:5, 101:14 173:19, 180:11, 144:5, 148:23, peripherality [3] -122:12, 166:3, overlap [1] - 134:9 180:15, 180:19, 201:17, 205:11, 145:14, 145:16, 167:25, 167:26, overseeing [1] -180:24, 189:27, 239:28 145:18 167:27, 167:28, 30:22 244:15 parties [6] - 20:7, permanent [3] oversight [1] - 65:21 167:29, 171:25, paper [10] - 28:25, 63:6, 93:25, 94:1, 40:19, 130:9, 150:26 172:10, 172:16, oversupplied [1] -33:19, 33:23, 34:4, 96:26, 97:8 permanently [1] -173:24, 174:4, 34:14, 101:1, 127:8, partly [1] - 135:12 136:22 177:17, 181:11, overview [1] - 142:20 160:11, 179:28, 217:2 partner [1] - 161:9 permeable [1] -181:12, 191:18, own [28] - 22:2, 27:1, Papua [1] - 15:1 Partners [9] - 5:27, 177:12 197:16, 210:20, 31:6, 43:6, 45:24, paragraph [9] -7:23, 8:20, 79:22, permission [10] -210:26, 214:9, 45:29, 47:21, 53:10, 52:13, 163:28, 168:4, 79:25, 80:7, 124:21, 2:30, 3:32, 25:15, 218:23, 218:28, 63:9, 66:11, 75:1, 225:5, 225:7, 225:14, 124:26 29:22, 33:3, 35:1, 221:3, 224:23, 79:21, 86:29, 87:12, 225:20, 225:25, 228:7 partners [1] - 5:28 87:28, 184:10, 197:9, 235:21, 241:20, 89:11, 111:1, 136:20, parallel [1] - 63:8 parts [2] - 7:6, 78:16 242:2, 243:6 171:25, 176:2, 176:4, paramount [1] -Party [1] - 244:18 permit [3] - 19:18, people...(187:2, 191:29, 158:2 35:3, 108:16 party [10] - 2:30, INTERJECTION [1] -197:17, 205:27, pardon [2] - 77:13, 3:31, 22:3, 53:22, permits [1] - 49:5 241:17 214:9, 224:8, 224:11, 180:16 57:29, 58:12, 63:13, permitted [3] - 45:1. per [11] - 12:11, 230:8 parent [4] - 4:25, 65:16, 65:23, 66:5

owned [17] - 6:6, 6:8,

146:10, 215:17

12:12, 15:7, 29:13,

n a resittin er (a)	125:25	142.24 142.27	145:00 151:14	Diserále (15) 25.2
permitting [2] -		143:24, 143:27,	145:22, 151:14,	Pleanála [15] - 35:3,
43:18, 140:14	pilots [2] - 100:23,	144:15, 145:6,	151:16, 154:7, 154:9,	35:20, 41:19, 48:23,
permutations [2] -	126:7	145:21, 145:28,	159:27, 164:2,	62:4, 82:7, 102:16,
110:11, 137:25	Pine [1] - 10:9	147:6, 147:15,	164:15, 164:20,	118:19, 119:3,
person [5] - 48:7,	pipe [3] - 86:5, 88:6,	147:17, 148:14,	178:27, 179:14,	122:10, 135:6,
55:19, 121:13,	229:9	148:20, 149:10,	184:6, 195:8, 197:9,	194:24, 202:2,
220:28, 221:29	pipeline [47] - 6:15,	149:11, 149:12,	200:5, 200:8, 200:27,	213:10, 213:19
personally [3] -	8:6, 8:11, 14:9, 16:17,	149:14, 149:16,	200:28, 201:9,	pleasant [1] - 4:29
75:23, 78:4, 111:1	26:8, 26:9, 26:10,	149:23, 150:6, 150:9,	201:22, 201:24,	plenty [2] - 15:12,
personnel [2] -	26:11, 27:20, 28:13,	150:10, 150:11,	203:21, 206:29,	165:18
10:18, 141:17	29:4, 55:10, 57:7,	150:12, 150:15,	207:24, 207:25,	plethora [2] - 171:23,
	66:29, 67:1, 68:22,	150:17, 151:1, 151:8,	208:16, 208:18,	172:16
perspective [6] -		153:16, 153:25,	213:14, 219:11,	
10:29, 57:20, 58:15,	73:24, 85:21, 93:21,	153:10, 155:25,	226:10, 226:12,	Plus [1] - 42:3
60:29, 66:13, 66:19	93:22, 93:24, 93:26,			plus [1] - 27:10
Perth [1] - 80:14	94:2, 94:17, 95:21,	156:11, 156:19,	226:13, 226:29,	Point [7] - 29:15,
pertinent [1] -	100:14, 104:6, 129:1,	157:17, 157:28,	227:29, 228:1, 228:3,	70:14, 103:2, 106:10,
212:26	133:21, 133:27,	158:6, 158:9, 158:18,	230:16, 234:28,	106:23, 135:17
Peru [1] - 15:1	176:6, 176:11,	158:20, 159:2,	235:5, 235:8, 235:12,	point [68] - 12:15,
Peter [2] - 98:20,	185:24, 187:28,	159:14, 159:24,	245:5	38:19, 39:10, 39:18,
98:26	189:4, 190:10,	159:26, 160:20,	plans [13] - 38:16,	40:13, 53:12, 54:16,
petition [1] - 205:21	191:12, 191:23,	161:25, 162:17,	45:21, 142:19, 150:1,	56:6, 57:4, 59:27,
•	193:9, 193:18, 196:8,	162:18, 163:10,	153:21, 159:27,	60:4, 60:17, 62:9,
Petrobras [1] -	196:11, 218:12,	163:11, 164:11,	160:14, 160:15,	
139:19	229:8, 229:24, 229:29	164:20, 165:2, 165:6,	163:21, 164:3,	64:6, 77:5, 82:18,
petrol [9] - 9:18,		167:18, 168:5, 168:6,	196:21, 222:5, 225:2	82:19, 88:8, 89:16,
70:29, 79:2, 79:5,	pipelines [7] - 16:28,			90:6, 93:4, 95:21,
79:13, 79:16, 121:3,	39:25, 86:6, 187:17,	191:15, 191:16,	Plans [6] - 142:24,	95:28, 97:5, 100:14,
121:6	217:29, 218:3, 218:13	196:29, 198:13,	162:3, 164:12, 165:3,	113:1, 116:2, 149:6,
petroleum [7] - 8:22,	pipes [1] - 181:9	198:16, 198:25,	212:5, 235:1	150:25, 166:11,
8:23, 36:19, 69:17,	place [25] - 55:14,	199:8, 199:25,	plant [23] - 10:10,	167:23, 170:15,
69:20, 72:4, 80:11	55:15, 57:13, 118:26,	200:14, 200:19,	10:13, 34:27, 40:20,	171:3, 177:27,
Petroleum [1] - 5:8	134:4, 174:12,	201:22, 206:14,	43:14, 53:18, 80:3,	177:28, 178:3,
pharmaceutical [2] -	183:13, 200:18,	207:2, 207:3, 207:9,	81:29, 82:1, 88:7,	179:19, 189:1, 192:3,
210:3, 210:9	207:4, 207:26, 208:9,	208:2, 208:3, 209:6,	91:11, 122:3, 210:6,	194:19, 196:2, 197:6,
	209:14, 209:26,	210:13, 214:12, 235:7	215:4, 220:24,	197:18, 204:20,
pharmacy [1] -	211:11, 211:21,	Plan's [1] - 143:13	222:13, 236:23,	209:3, 209:16,
120:28	215:20, 220:24,	planned [8] - 13:16,	240:19, 240:20,	209:19, 210:2,
phase [5] - 19:24,	226:21, 227:4, 228:6,	27:28, 42:22, 100:15,	243:29, 244:2, 244:3,	210:11, 210:16,
49:28, 99:18, 179:14,		157:22, 230:15,	244:6	
246:20	235:6, 239:1, 241:27,	244:20, 245:10	plants [18] - 13:2,	212:21, 215:23,
Phase [2] - 99:12,	242:3, 242:5	•		218:22, 219:22,
104:27	placed [3] - 13:19,	Planning [20] -	13:4, 13:6, 15:7, 16:8,	220:12, 221:9,
phased [1] - 18:19	81:25, 89:1	143:2, 153:16,	17:29, 33:16, 34:4,	223:23, 227:23,
phases [1] - 240:23	places [4] - 12:6,	153:18, 154:6,	36:16, 39:14, 52:7,	228:29, 230:9,
phenomenon [1] -	85:27, 177:11, 238:7	154:20, 154:22,	52:9, 52:10, 109:12,	236:17, 237:7,
26:17	plan [24] - 120:25,	154:23, 154:24,	240:13, 240:14,	237:25, 240:25,
photocopied [2] -	143:7, 143:8, 144:22,	156:2, 162:1, 163:25,	240:16, 242:29	243:9, 243:26
2:29, 3:30	145:1, 146:19,	165:5, 206:16,	platform [9] -	pointed [2] - 237:5,
	146:27, 146:29,	206:28, 207:1,	110:26, 111:3,	240:11
photographs [1] -	149:15, 149:20,	207:28, 208:25,	111:10, 111:12,	points [6] - 24:29,
166:7	151:9, 153:26,	227:14, 228:21	111:21, 177:1, 179:4,	67:20, 78:26, 82:4,
Phrase [1] - 101:7	156:13, 156:22,	planning [76] - 19:3,	215:28, 215:29	126:18, 215:1
physical [5] - 70:19,	158:4, 159:20,	25:15, 29:22, 33:3,	platforms [4] -	polamis [1] - 238:29
72:24, 82:19, 149:19,		34:29, 35:1, 35:26,	110:28, 111:6, 111:7,	•
151:10	160:24, 161:1,	36:25, 40:16, 46:10,	111:15	Poland [1] - 12:5
physically [3] - 57:6,	164:16, 164:17,	49:1, 49:22, 49:27,		Policies [3] - 142:24,
70:16, 94:4	168:2, 168:9, 191:28,		play [2] - 11:15,	162:18, 231:6
picture [7] - 11:16,	230:17	49:29, 50:2, 51:1,	172:21	policies [25] - 38:16,
32:6, 40:29, 41:2,	Plan [89] - 91:17,	51:3, 51:13, 51:19,	players [2] - 70:16,	142:20, 142:27,
51:11, 184:8	107:6, 107:15,	51:26, 52:18, 53:3,	155:17	143:10, 149:13,
pieces [1] - 134:18	109:15, 142:29,	60:8, 62:9, 63:21,	playing [4] - 171:22,	149:15, 152:22,
	143:1, 143:3, 143:6,	87:27, 88:11, 97:23,	172:27, 235:25,	152:24, 154:7,
pilot [1] - 103:24	143:7, 143:18,	121:1, 140:9, 140:14,	235:26	159:22, 159:26,
Pilot [2] - 101:13,		141:14, 142:21,		

162:16, 163:9,	160:16, 161:8,	possibly [9] - 30:1,	244:6	prejudice [2] - 144:8,
163:21, 165:7,	164:28, 197:3,	52:18, 71:5, 210:3,	POWER [40] - 3:8,	148:25
210:12, 217:25,	197:12, 197:23,	216:2, 220:14,	92:3, 92:14, 93:18,	premature [1] -
225:3, 231:20,	198:4, 198:19, 199:2,	220:29, 246:11,	93:29, 94:7, 94:14,	192:8
234:28, 234:29,	199:17, 204:11,	246:18	94:21, 95:13, 97:15,	premier [11] - 107:8,
243:14, 243:15, 244:8	204:14, 204:23,	post [1] - 51:7	97:18, 102:19, 124:3,	107:11, 107:16,
Policy [8] - 5:19,	209:9, 209:15,	posted [1] - 202:20	175:3, 175:25, 176:4,	109:18, 145:4, 147:8,
16:21, 160:1, 162:20,	209:27, 212:6, 224:21	posture [1] - 25:22	176:13, 177:4, 177:9,	148:17, 164:28,
190:22, 194:28,	Port [19] - 9:15,	Poten [15] - 5:27,	179:24, 180:2,	197:2, 198:19, 209:8
195:2, 195:14	101:11, 101:24,	5:28, 6:2, 7:23, 8:20,	181:14, 181:17,	premium [3] - 21:6,
policy [33] - 16:23,	103:20, 125:23,	79:22, 79:24, 80:6,	182:13, 182:18,	21:7, 24:21
20:8, 25:12, 25:25,	159:23, 160:8,	80:7, 80:12, 80:13,	182:21, 186:23,	PRENTICE [1] - 2:11
34:25, 36:11, 36:13,	160:15, 160:19,	80:22, 124:21,	187:8, 187:19, 188:2,	preparation [5] -
36:24, 36:26, 38:22,	161:13, 161:17,	124:26, 184:29	188:8, 188:16,	97:22, 142:7, 142:14,
58:16, 65:15, 70:7,	200:22, 202:16,	potential [32] - 7:12,	188:26, 190:18,	142:18, 228:20
141:14, 142:21,	203:4, 212:7, 222:21,	14:1, 20:12, 24:14,	191:2, 195:15,	prepared [8] -
151:7, 159:29, 160:3,	223:16	69:3, 78:14, 95:4,	244:12, 244:29,	100:28, 122:20,
160:7, 163:24, 195:1,	portfolio [1] - 58:5	98:1, 98:22, 99:20,	245:6, 245:17	137:7, 142:6, 142:18,
195:6, 195:10,	portion [2] - 100:11,	105:1, 106:9, 107:29,	Power's [2] - 39:7,	195:1, 227:15
203:22, 212:11,	147:29	114:18, 129:7, 130:1,	96:22	•
226:12, 228:1,	ports [10] - 99:2,	138:17, 139:1,	practical [6] -	preparing [2] - 45:20, 125:20
235:12, 242:12,	99:18, 101:27,	143:29, 144:17,	123:12, 127:2,	prerequisites [1] -
242:17, 243:12,	109:25, 127:9,	144:18, 151:20,	152:26, 173:20,	
243:13	135:10, 135:18,	151:21, 155:5,	177:21, 220:9	28:8
Politicians [1] -	159:23, 160:2, 160:3	155:24, 156:3,	practice [12] - 31:13,	Prescott [2] -
119:24	Ports [2] - 101:2,	160:14, 160:16,	37:27, 59:2, 59:7,	222:20, 222:21
polling [2] - 48:8,	160:1		59:8, 59:14, 59:28,	presence [1] -
48:11	Portugal [1] - 12:4	181:29, 211:1, 211:7, 219:18	60:5, 60:11, 60:15,	163:26
pollution [2] -	•		60:21, 221:19	present [6] - 66:21,
134:22, 146:4	position [12] - 25:23,	potentially [4] -	practices [3] - 31:6,	77:22, 116:23, 176:7,
	34:20, 58:4, 63:2,	74:10, 131:14, 193:3,	86:21, 87:1	200:25, 234:23
pool [2] - 223:17,	63:9, 114:17, 133:17,	230:20		presentation [13] -
223:18	173:3, 180:12, 181:7,	pound [1] - 171:23	pre [1] - 159:16	4:12, 4:15, 39:8,
poor [1] - 86:29	184:11, 208:12	Power [32] - 4:11,	pre-application [1] -	78:25, 84:15, 89:12,
population [22] -	positioned [1] -	11:1, 15:15, 18:3,	159:16	96:20, 114:13,
48:13, 106:1, 112:13,	59:19	18:9, 38:12, 56:25,	precedent [2] -	123:21, 123:27,
113:5, 129:22,	positions [1] - 203:6	76:7, 76:12, 90:29,	210:1, 221:19	141:13, 160:27, 225:1
150:12, 150:18,	positive [4] - 196:15,	91:2, 92:22, 95:10,	preceding [1] - 25:11	presentations [1] -
155:23, 156:25,	231:8, 244:21, 245:11	96:13, 96:18, 96:23,	precise [1] - 54:22	51:10
167:19, 167:25,	possessing [1] -	103:3, 113:16,	precisely [2] - 7:29,	PRESENTED [1] -
167:28, 168:24,	102:1	122:27, 123:11,	60:22	97:15
168:26, 169:1, 169:14, 169:21,	possibilities [2] -	123:13, 138:23,	preclude [5] - 198:4,	presented [5] -
	98:3, 155:2	142:24, 158:22,	198:7, 210:14, 216:1,	12:16, 44:27, 106:18,
169:24, 169:29,	possibility [10] -	159:3, 172:13, 175:2,	216:12	204:23, 244:14
224:13	20:9, 37:28, 64:23,	176:20, 177:15,	predicated [1] -	presenting [3] - 4:8,
populations [2] -	75:16, 76:26, 89:6,	185:10, 190:16,	127:13	10:21, 59:21
138:27, 139:1	113:22, 173:7,	195:11	predict [1] - 55:6	presently [1] - 7:26
porosity [1] - 177:10	180:18, 214:14	power [38] - 12:15,	predictable [1] -	presents [3] - 32:4,
porous [2] - 76:27,	possible [31] - 28:11,	13:1, 13:2, 13:4, 13:6,	137:2	54:3, 155:2
177:10	34:27, 38:14, 39:22,	17:10, 33:16, 34:27,	preempt [2] - 202:8,	preservation [1] -
Porous [1] - 177:8	41:1, 53:16, 53:19,	36:14, 91:11, 91:12,	202:26	145:28
port [38] - 98:15,	58:19, 65:5, 75:20,	92:6, 92:9, 93:3, 93:5,	Preferably [1] -	preserve [2] - 14:3,
101:16, 101:22,	77:7, 91:27, 91:29,	93:6, 94:29, 108:7,	100:22	157:7
103:22, 107:8,	97:6, 103:11, 110:11,	119:17, 135:20,	preference [1] -	preserving [1] -
107:12, 107:16,	132:12, 137:25,	136:18, 136:20,	219:25	108:17
109:12, 109:18,	154:9, 174:19,	139:25, 145:23,	preferentially [1] -	President [5] - 4:23,
109:23, 109:26,	176:13, 177:21,	145:25, 194:6, 239:8,	21:18	6:4, 101:4, 125:11,
124:23, 125:8,	181:5, 181:6, 187:14,	240:13, 240:14,	preferred [7] - 12:27,	187:4
125:28, 135:8, 145:4,	188:26, 210:7,	240:16, 241:2,	13:3, 97:22, 101:9,	president [1] - 6:12
147:8, 148:17,	218:12, 219:9,	241:11, 242:29,	102:25, 106:21,	press [3] - 96:16,
149:29, 159:20,	226:14, 243:28	243:29, 244:2, 244:3,	127:26	140:16, 166:6

43:6, 44:16, 44:21, 112:15, 138:27, pressing [3] - 57:27, principally [1] producing [7] -139:25 110:28, 176:23, 44:25, 45:1, 45:4, 221:28 171:2. 190:14 principles [2] -236:12, 236:23, 45:11, 45:16, 45:17, properties [1] pressure [3] -236:24, 238:3, 241:2 46:7, 46:13, 47:9, 82:20 134:27, 188:18, 143:27, 144:15 193:29 print [1] - 59:1 product [10] - 34:13, 47:11, 47:12, 47:14, property [3] - 30:14, Presumably [1] -36:21, 68:5, 69:19, 47:15, 47:17, 47:18, 89:1, 224:23 priorities [1] - 16:26 69:21, 70:5, 80:11, 47:20, 47:24, 48:1, 72:23 proportion[1] prioritise [1] -48:2, 48:20, 48:23, 134:16, 237:21 presumably [2] -104:14 70:18 49:3, 49:7, 51:29, 199:12, 214:27 Private [1] - 160:6 production [25] proposal [20] -52:3, 55:9, 56:8, 56:9, 6:15, 8:15, 12:24, 94:23, 95:15, 136:6, presume [2] - 38:21, private [6] - 11:11, 57:5, 64:24, 81:16, 13:9, 13:15, 13:21, 222:7 25:7, 80:17, 111:26, 161:14, 164:19, 13:28, 14:3, 14:5, 81:18, 81:21, 86:7, 186:25, 191:6, presumption [1] -159:1, 159:12 97:21, 98:27, 115:21, 146.12 14:24, 18:17, 19:15, 191:10, 198:24, privately [1] - 80:7 117:8, 117:10, 34:2, 34:13, 36:9, 199:5, 201:20, prevailing [1] - 69:10 prize [1] - 81:12 121:26, 122:4, 36:10, 40:8, 68:23, 204:22, 209:22, prevent [3] - 146:4, problem [14] - 43:19, 125:14, 125:17, 199:14, 235:29 78:18, 127:14, 136:3, 209:28, 210:5, 46:15, 46:29, 53:9, 238:9, 238:20, 126:12, 136:1, 136:9, 210:12, 210:14, preventing [2] -64:27, 65:2, 75:27, 240:22, 241:7 140:16, 140:18, 227:16, 231:13, 200:13, 236:6 189:9, 189:12, 140:20, 142:14, products [5] - 8:16, 244:16 prevents [1] - 136:9 189:21, 193:6, 205:4, 142:22, 142:25, 235:23. 240:27 8:22, 36:20, 69:17, proposals [5] previous [2] -143:13, 143:19, 72:4 129:24, 133:25, 114:28, 166:12 problems [5] - 58:14, 143:23, 147:4, 145:22, 187:2, 219:29 professional [5] previously [2] -66:11, 98:15, 189:27, 148:28, 156:1, 88:24, 118:27, propose [5] - 16:25, 36:15, 190:2 189:28 156:17, 159:11, 118:28, 172:23, 55:8, 110:24, 170:25, procedure [1] price [29] - 20:25, 159:18, 163:3, 163:8, 229:22 198:6 21:7, 21:15, 21:16, 207:18 165:1, 165:3, 178:27, profile [3] - 18:16, proposed [58] - 7:19, 21:17, 22:11, 27:7, procedures [3] -179:14, 185:12, 19:8, 19:12 10:8, 20:28, 28:15, 29:14, 29:15, 29:19, 126:15, 189:17, 190:24, 198:3, 198:4, profit [11] - 31:16, 43:15, 46:7, 59:3, 64:28, 66:16, 66:17, 206:28 198:7, 198:9, 198:22, 37:22, 37:28, 56:3, 89:15, 97:27, 103:29, 66:18, 68:8, 68:11, proceed [6] - 18:19, 199:16, 210:29, 56:4, 57:15, 57:16, 104:1, 104:8, 104:10, 68:24, 69:15, 69:19, 31:2, 46:13, 200:28, 211:6, 211:9, 229:7, 239:22, 241:12, 108:13, 110:21, 70:13, 71:1, 71:6, 201:7. 209:22 243:11, 244:27, 245:2 241:15, 241:18 114:20, 118:1, 71:20, 71:22, 72:3, proceeding [4] profitability [1] project...(121:28, 125:19, 72:4, 72:6, 72:13, 35:17, 48:28, 85:6, INTERJECTION [1] -127:27, 128:6, 128:8, 72:24 86:12 242:14 profitable [3] -130:13, 135:29, priced [2] - 20:20, proceedings [2] projected [3] - 15:9, 136:9, 136:11, 137:3, 157:18 31:14, 243:5, 244:10 166:5, 207:17 15:10, 158:13 137:4, 140:18, profits [1] - 243:7 prices [34] - 13:11, proceeds [1] - 194:2 projects [14] - 5:13, 140:25, 140:28, programme [2] -16:7, 21:6, 21:8, process [34] - 30:28, 7:10, 9:3, 9:27, 10:6, 157:16, 157:20 145:2, 146:23, 21:21, 21:23, 21:28, 35:27, 36:25, 43:22, 10:25, 14:29, 34:11, 146:26, 147:4, 148:7, progressed [1] -23:10, 23:13, 23:14, 45:20, 49:1, 49:6, 42:15, 80:24, 142:9, 150:5, 150:22, 26:12, 26:19, 26:20, 119:9 49:17, 49:25, 49:29, 211:12, 216:12, 150:28, 153:5, 153:6, 26:28, 27:18, 29:12, 50:2, 51:20, 51:29, progressive [2] -222:24 155:20, 158:29, 242:12, 242:17 29:16, 66:21, 68:1, 52:4, 52:5, 52:6, prolonged [2] - 52:1, 159:4, 159:19, 161:4, prohibitively [1] -68:17, 68:19, 69:21, 58:13, 62:9, 65:23, 52:4 164:14, 164:16, 136:28 70:26, 71:10, 71:11, 81:24, 97:21, 98:28, promises [1] - 118:6 184:16, 194:13, Project [3] - 117:6, 71:18, 71:19, 72:21, 99:12, 103:21, 201:4, 208:14, promote [7] - 145:8, 74:23, 74:25, 74:28, 142:17, 169:11 104:28, 127:17, 149:19, 150:6, 230:13, 230:23, 74:29, 239:15, 239:23 195:6, 206:17, 213:7, project [127] - 4:9, 150:29, 153:27, 233:24, 233:27, 5:14, 6:10, 6:19, 6:23, Prices [1] - 17:26 216:20, 233:13, 159:10, 229:2 233:29, 234:5 6:27, 6:29, 7:13, 7:28, pricing [1] - 27:2 235:8, 235:26, 242:23 Promotion [1] -**PROPOSED** [1] - 1:5 primarily [2] - 36:17, 7:29, 8:21, 8:28, 8:29, produce [3] - 33:13, proposes [1] -9:9, 9:28, 10:2, 10:10, 236:12, 236:19 promotion [2] -151:11 primary [6] - 36:19, 10:11, 10:19, 10:28, produced [12] -157:9, 157:12 proposing [4] - 24:6, 18:10. 18:12. 18:27. 95:15, 126:23, 16:20, 33:24, 34:6, pronounced [2] -179:5, 191:7, 191:9 18:29, 20:28, 22:6, 169:11, 175:7, 186:5 36:4, 76:19, 153:24, 12:29.74:3 proposition [2] -23:12, 24:8, 24:27, prime [1] - 152:21 176:23, 236:12, proper [4] - 34:7, 23:22, 135:27 25:13, 25:28, 29:23, Prime [2] - 152:23, 236:13, 237:8, 145:16, 164:20, proprietary [1] -30:18, 30:19, 31:2, 237:11, 242:20 188:18 32:11, 33:10, 35:1, principal [2] produces [2] - 33:17, properly [4] - 97:11, prospect [1] - 127:23 37:14, 38:3, 40:14, 126:10, 126:18 39:25 34

prospective [3] -13:16, 24:21, 28:9 prospects [1] - 38:3 prosperity [1] -153:22 prosperous [1] -156:14 protect [1] - 132:21 protected [5] -126:28, 144:7, 148:25, 151:21, 162:21 protection [7] -31:11, 37:24, 147:12, 149:20, 162:11, 162:19, 162:20 Protection [1] -108:15 Protocol [2] -237:27, 237:29 prototype [3] -136:19, 137:13, 137:16 prototypes [1] -137:26 prove [4] - 51:17, 191:21, 235:22, 235:24 proved [1] - 129:26 proven [6] - 13:2, 13:10, 50:26, 132:17, 232:22, 240:18 provide [26] - 17:25, 17:27, 28:12, 34:20, 56:26, 61:15, 74:15, 98:3, 98:5, 99:4, 112:7, 130:28, 137:18, 149:17, 150:19, 150:24, 151:6, 153:7, 154:4, 160:4, 175:27, 190:28, 190:29, 191:1, 204:25, 226:9 provided [13] - 37:8, 61:7, 98:6, 102:14, 102:15, 104:16, 130:8, 160:27, 162:4, 171:19, 190:22, 201:16, 242:25 provides [11] - 8:20, 93:6, 127:5, 140:25, 143:7, 143:9, 149:20, 154:13, 162:4, 186:28, 201:11 providing [11] - 9:21, 16:3, 37:11, 58:20, 111:18, 127:22, 133:1, 193:13, 204:14, 210:7, 227:20

provision [15] -

144:29, 145:7, 145:9, 145:12, 145:16, 145:24, 155:10, 156:28, 157:11, 157:13, 162:3, 164:17, 165:10, 210:1, 225:29 provisions [10] -28:14, 63:10, 63:15, 67:2, 67:24, 148:13, 149:13, 153:5, 164:19, 220:2 proximity [7] -100:13, 104:20, 108:6, 111:7, 112:12, 199:23, 216:3 Proximity [2] -100:17, 105:26 précis [1] - 96:22 public [32] - 7:8, 24:23, 30:12, 30:14, 35:4. 35:8. 35:26. 37:25, 41:11, 47:7, 48:8, 48:9, 48:25, 50:17, 51:6, 51:8, 51:9, 51:15, 58:27, 61:8, 61:12, 62:8, 68:11, 80:18, 81:1, 83:26, 119:22, 157:11, 160:26, 196:23, 201:7, 232:27 public's [1] - 60:28 publicity [4] -140:17, 184:14, 184:18, 184:20 published [9] -11:12, 26:23, 101:2, 159:29, 160:10, 161:1, 169:25, 172:7 pull [1] - 103:26 pump [12] - 176:17, 185:1, 185:3, 185:4, 185:14, 185:22, 185:26, 187:29, 192:1, 192:13, 223:7, 241:3

pumped [5] - 138:3,

Pumped [1] - 176:12

pumping [6] - 183:8,

purchase [7] - 17:24,

purchased [1] - 72:2

53:10, 53:12, 53:20,

71:29, 73:10, 74:7

purchases [1] -

19:18

176:19, 181:22,

187:15, 220:17

185:15, 186:6,

188:23, 188:24,

purchasing [2] -70:27. 108:2 purely [3] - 83:1, 184:20, 219:23 purge [1] - 188:14 purpose [9] - 37:10, 91:14, 94:23, 97:23, 148:10, 148:12, 151:5, 182:16, 195:13 purposes [5] - 25:19, 95:15, 144:26, 193:7, 196.23 pursue [3] - 7:19, 136:8, 183:20 pursuing [1] - 130:2 Pursuing [1] - 131:3 put [45] - 12:14, 31:6, 38:25, 52:26, 54:15, 75:2. 75:18. 85:19. 93:11, 96:9, 107:21, 116:2, 119:2, 119:27, 120:17, 121:16, 123:12, 172:21, 177:25, 180:29, 182:29, 187:12, 187:22, 188:4, 188:11, 189:5, 189:14, 191:5, 191:12, 196:5, 196:10, 196:11, 196:15, 201:29, 202:1, 204:10, 207:17, 211:6, 217:27, 219:8, 220:9, 236:25, 243:17, 243:26, 244:5 putting [11] - 37:22, 54:8, 54:13, 65:9, 181:11, 181:13, 185:10, 196:7, 218:10, 219:28, 222:14

Q

Qatar [2] - 14:25, 53:28
QRA [12] - 35:4, 35:8, 35:15, 41:11, 41:15, 41:18, 41:22, 61:7, 82:8, 83:19, 139:2, 209:4
Qualifications [1] - 141:24
qualified [3] - 78:1, 221:29, 227:13
qualify [1] - 78:4
qualifying [1] - 227:8
qualities [1] - 54:25

quality [9] - 17:16, 55:4, 55:5, 55:6, 76:21, 133:27, 146:5, 156:13, 162:11 quantified [2] -138:18, 182:1 Quantitative [4] -112:26, 170:16, 200:6, 200:23 quantity [1] - 237:8 quarter [1] - 245:28 quarterly [1] - 72:6 queries [2] - 101:5, 175:16 query [1] - 217:16 questionable [1] -129:29 QUESTIONED [2] -3:6. 3:16 questioning [1] -90:28 QUESTIONING [1] -117:15 questions [47] -35:12, 35:14, 38:19, 38:25, 39:6, 42:11, 76:7, 78:27, 80:5, 83:14, 91:1, 96:12, 113:17, 113:19, 113:24, 114:16, 114:27, 114:29, 115:3, 116:9, 119:1, 120:11, 120:26, 122:15, 122:18, 122:21, 135:2, 138:14, 141:15, 165:18, 166:11, 170:8, 171:7, 175:16,

212:25, 213:25, 214:16, 217:3, 239:12 quick [3] - 114:26, 139:24, 242:29 quickest [1] - 216:6 quickly [10] - 15:22, 39:21, 40:5, 40:6, 40:11, 69:16, 69:20, 69:21, 240:10, 243:6 quiet [1] - 121:10 quite [20] - 44:29, 48:28, 71:24, 76:10, 77:20, 172:27, 173:26, 174:16, 178:25, 181:5, 181:7, 181:10, 195:21, 196:20, 208:27, 216:20, 218:15. 224:2, 224:26, 227:10

179:21, 195:21,

205:1, 208:17,

212:15, 212:22,

Quite [1] - 168:11 quotas [1] - 36:9 quote [1] - 169:5 quoted [4] - 40:19, 168:9, 190:20, 190:21 quoting [3] - 168:1, 169:15, 245:8

R

radiant [1] - 223:19

radio [2] - 121:17, 219:14 raise [8] - 46:21, 72:21, 74:17, 92:20, 135:2, 207:22, 220:6, 243:9 raised [20] - 7:7, 20:16, 20:17, 22:13, 32:22, 43:21, 43:27, 59:2, 82:5, 83:14, 84:17, 90:5, 90:10, 97:7, 122:2, 209:3, 210:2, 230:11, 237:7, 240:9 raises [3] - 136:16, 137:2, 138:14 raising [2] - 97:11, 120:10 RALAPPANE [1] -1:8 ran [1] - 81:6 range [7] - 16:11, 129:10, 131:12, 142:8, 159:5, 170:20, 170:23 ranked [1] - 48:11 rapid [1] - 17:22 rapidly [7] - 14:13, 14:25, 40:1, 69:16, 74:18, 186:27, 194:9 rare [3] - 22:22, 23:19, 132:22 rate [5] - 18:16, 74:2, 173:22, 193:27, 194:1 rates [11] - 15:18, 19:15, 22:25, 22:26, 23:1, 23:5, 23:6, 39:10. 131:27 rather [7] - 47:27. 60:27, 70:16, 77:11, 136:12, 160:26, 176:24 ratification [1] - 63:7 ratified [4] - 62:12, 63:7, 63:16, 63:22 rationale [2] - 6:27, **RAYMOND** [1] - 2:17

RBG [1] - 226:10 re [5] - 23:17, 67:12, 120:22, 121:3, 176:26 re-exporting [1] -202:22 23:17 re-inject [1] - 176:26 re-opened [2] -120:22, 121:3 238:10 re-write [1] - 67:12 reach [4] - 15:7, 27:7, 39:14, 137:18 reached [1] - 27:14 read [15] - 5:23, 25:1, 71:3, 71:4, 72:21, 102:17, 146:24, 181:20, 184:28, 189:8, 189:10, 198:16, 225:6, 226:5, 245:6 readily [3] - 11:7, 61:23, 83:5 Reading [1] - 9:15 reading [8] - 42:13, 46:26, 79:1, 79:23, 96:4, 102:22, 194:12, 227:23 ready [3] - 93:6, 93:15, 222:24 real [2] - 94:28, 163:25 190:14 realisable [1] - 72:13 realisation [1] -163:24 realise [1] - 90:2 realised [3] - 27:19, 72:13. 83:27 232:26 realistic [1] - 68:5 realities [2] - 29:6, reality [3] - 119:16, 136:14, 202:5 really [20] - 18:9, 181:23 43:4, 46:1, 51:21, 54:22, 65:29, 78:4, 79:25, 83:3, 94:18, 114:15, 170:5, 171:11, 173:6, 183:4, 187:22, 192:5, 219:8, 219:19, 234:7 reason [6] - 44:1, 66:4, 68:2, 197:8, 207:6, 244:9 reasonable [5] -52:23, 66:19, 99:16, 168:29 222:3, 235:27 recourse [1] - 7:29 reasonably [2] recover [1] - 85:6 17:28, 58:21 recovery [2] - 9:28, reasons [9] - 13:20, 31:12, 73:20, 74:12, redistribution [1] -

89:14, 92:26, 144:26,

151:11

169:11, 218:9 reassess [1] - 202:24 reassessing [1] reassuring [1] - 43:2 rebuttal [1] - 75:22 recaptured [1] receive [1] - 46:18 received [5] - 30:23, 128:12, 134:5, 232:11, 232:27 receives [1] - 68:22 receiving [2] -127:14. 136:2 recent [14] - 24:9, 26:23, 30:24, 48:10, 77:5, 77:16, 134:21, 150:13, 167:19, 167:23, 169:6, 169:7, 243:16, 244:19 recently [7] - 5:19, 14:5, 21:20, 66:28, 92:8, 110:7, 137:13 recess [1] - 133:15 reclaim [1] - 77:8 recognise [4] -24:11, 55:28, 155:1, recognised [2] -108:1, 172:20 recognises [1] recommendation [3] - 138:21, 182:3, recommendations [3] - 35:25, 62:8, 127:7 recommended [5] -59:5, 59:14, 138:4, 173:11, 180:22 Recommended [1] record [14] - 30:7, 60:4, 60:5, 60:27, 60:28, 81:12, 96:10, 117:1, 128:12, 132:18, 132:19, 152:3, 219:24, 245:4 recorded [1] - 131:7 recorder [1] - 103:18 recordings [1] - 1:23 records [2] - 76:17,

reduce [3] - 17:8, 21:6. 177:23 reduced [2] - 14:2, reduces [1] - 145:18 reduction [1] -238:12 reductions [2] -17:14, 29:14 redundancies [1] -118:13 refer [9] - 35:24, 62:6, 102:20, 113:8, 147:21, 173:7. 196:18, 196:19, 227:18 reference [10] - 72:3, 96:23, 96:25, 101:5, 153:26, 158:22, 161:12, 164:7, 180:23, 225:10 referenced [2] -25:11, 107:10 references [6] -96:28, 98:6, 123:2, 123:5, 143:23, 190:22 referencing [2] -97:4, 168:3 referred [15] - 25:18, 28:25, 29:3, 30:24, 33:19, 67:21, 96:24, 96:25, 97:2, 107:24, 133:12, 153:19, 158:26, 197:11, 240:11 referring [7] - 52:7, 56:15, 79:17, 127:10, 226:26, 228:11, 229:23 refers [12] - 86:12, 135:7, 161:29, 162:15, 163:28, 169:26, 217:18, 226:1, 226:17, 228:5, 230:6, 243:4 refined [2] - 8:16, 36:21 refineries [2] - 9:10, 10:7 refinery [2] - 9:12, 9:15 refining [1] - 8:16 reflect [3] - 27:7, 72:16, 74:19 reflecting [2] - 12:26, reflects [3] - 37:26, 44:18, 70:13 refuse [2] - 14:6,

refused [3] - 33:4, 44:2, 204:13 regard [9] - 18:29, 19:21, 159:18, 174:17, 207:29, 208:1, 208:5, 209:12, 232:29 regarded [2] - 78:11, regarding [3] - 36:3, 160:12, 179:1 regardless [1] -111:20 regards [1] - 138:26 REGASIFICATION [1] - 1:5 regasification [20] -18:14, 66:1, 74:14, 111:3, 128:17, 130:7, 133:10, 133:23, 138:8, 138:13, 140:5, 166:24, 166:29, 167:6, 167:10, 167:14, 176:18, 178:11, 178:19, 210:6 Regasification [2] -128:20, 133:12 regasified [3] -111:9, 111:11, 193:4 regasify [2] - 133:13, regime [2] - 188:18, 242:24 regimes [1] - 242:10 region [18] - 129:7, 152:9, 152:16, 153:12, 153:23, 154:29, 155:7, 155:10, 155:14, 155:16, 155:16, 155:22, 156:3, 228:5, 230:14, 231:11, 231:12 regional [21] - 4:9, 38:16, 95:18, 97:26, 142:21, 151:14, 151:26, 151:29, 152:12, 153:13, 154:24, 155:26, 156:16, 156:24, 157:2, 159:10, 161:10, 164:3, 165:8, 231:20, 235:13 Regional [20] -143:2, 153:16, 153:18, 154:20, 154:22, 154:23, 154:24, 156:2, 162:1,

163:25, 165:4, 165:5,

225:5, 225:13,

228:20, 230:15, 231:14 regionally [1] -157:18 regions [7] - 12:21, 16:24, 33:27, 151:10, 153:2, 157:4, 165:10 Register [2] -124:18, 125:10 registered [1] - 7:20 Registration [2] -32:4. 41:6 regularly [3] - 81:12, 103:1, 221:27 regulations [4] -31:18, 233:13, 235:28, 236:3 regulator [2] - 26:23, regulators [2] - 45:5, 86:14 regulatory [5] - 6:22, 8:6, 44:25, 60:25, 184:17 Regulatory [5] -30:21, 45:3, 51:25, 86:13, 86:20 reinforce [1] - 59:27 reintroduce [1] -204:13 reiterating [1] -215:26 relate [3] - 40:18, 144:26, 162:19 related [10] - 8:21, 107:23, 126:19, 149:29, 160:15, 170:27, 181:2, 198:5, 199:17, 217:3 relates [5] - 88:17, 162:11, 162:20, 186:2, 209:4 relating [7] - 6:21, 47:1, 48:9, 79:20, 101:5, 152:24, 201:15 relation [37] - 4:16, 7:6, 49:12, 56:16, 87:26, 96:20, 114:17, 114:27, 141:14, 144:11, 145:12, 145:23, 146:29, 149:23, 151:24, 152:6, 152:21, 154:29, 159:23, 162:26, 162:28, 163:12, 163:14, 163:20, 164:11, 165:8, 168:21,

172:12, 184:2,

225:28, 227:14,

219:11

186:29, 187:3, 203:5, 243:22, 244:8, 244:11 213:13, 213:18, renewed [1] - 151:19 217:17, 225:2, 246:2 repair [1] - 130:26 relationship [3] repeatable [1] - 44:5 7:8, 7:16, 100:19 repeating [1] relative [3] - 21:1, 106:13 69:4. 122:28 replace [3] - 15:22, relatively [12] -86:7. 119:19 14:23, 15:29, 86:23, replaced [1] - 45:7 103:27, 104:19, replied [2] - 62:5, 106:27, 129:11, 130:18, 176:17, reply [5] - 64:14, 193:14, 193:27 116:28, 201:9, release [5] - 83:26, 201:27, 208:10 132:22, 140:16, Report [8] - 79:24, 160:26, 184:20 180:11, 180:19, released [1] - 184:14 180:21, 232:17, releasing [1] - 77:11 233:20, 233:24, relevance [3] -238:24 44:29, 143:18, 143:22 report [25] - 17:3, relevant [9] - 164:11, 29:12, 35:23, 35:24, 204:25, 205:11, 62:6, 62:7, 64:16, 205:15, 206:15, 80:17, 82:8, 85:19, 210:3, 218:20, 96:24, 96:25, 122:28, 220:29, 235:21 137:9, 160:11, reliability [6] - 20:13, 168:12, 173:18, 25:19, 134:28, 182:7, 184:29, 138:10, 194:17, 232:26, 233:12, 242:27 237:5, 237:6, 239:4, reliable [4] - 131:20, 240:11 132:11, 132:18, 133:2 reported [2] - 30:10, reliably [1] - 132:16 98:14 reliance [1] - 134:27 Reports [1] - 232:24 relied [1] - 221:24 reports [3] - 168:27, reloading [1] - 111:9 178:16, 180:15 represent [4] - 32:6, relocation [2] -154:10, 226:14 40:29, 121:18, 244:17 reluctant [1] - 14:4 representative [2] remain [1] - 22:9 47:22, 116:19 remaining [8] representatives [3] -14:22, 32:26, 36:16, 47:7, 203:3, 203:12 40:3, 40:4, 115:24, representing [3] -149:4, 188:11 47:16, 78:23, 170:11 remains [3] - 21:15, represents [4] -15:9, 39:22, 69:3, 133:19, 137:11 159:11 remarks [1] - 69:2 remember [2] reproduced [4] -50:16, 87:22 2:29, 3:31, 106:19, 143:19 removal [3] - 45:11, **Republic** [1] - 152:26 49:13, 216:12 remove [1] - 90:13 request [4] - 114:13, removed [5] - 45:8, 116:11, 117:17, 166:5 requested [3] - 61:4, 45:16, 45:18, 48:21, 61:12, 61:19 130:25 requests [2] - 35:10, removing [1] -216:14 41:12 require [13] - 34:22, renewable [10] -33:6, 34:19, 145:26, 36:15, 99:1, 129:10, 155:11, 238:21, 131:10, 132:15, 132:25, 152:9,

242:19, 243:18,

152:14, 160:3, 172:11, 172:29, 209:22 required [18] - 18:18, 20:10, 28:16, 50:23, 58:10, 64:19, 65:7, 83:25, 86:7, 101:20, 102:1, 127:5, 127:21, 132:7, 145:7, 148:23, 191:13, 234:15 requirement [14] -14:13, 49:14, 49:16, 50:20, 61:15, 99:27, 126:23, 146:1, 147:11, 160:13, 173:13, 176:24, 176:26, 186:8 requirements [19] -8:7, 18:6, 18:23, 20:4, 20:12, 27:29, 29:9, 49:14. 60:25. 98:10. 99:12, 99:14, 99:21, 101:10, 112:25, 131:12, 162:9, 194:18, 242:27 requires [2] - 130:24, 162:12 requisite [1] - 22:4 resale [2] - 67:5, 67:7 Research [2] -110:17, 137:29 research [11] -122:1, 122:6, 122:9, 122:11, 122:13, 138:20, 157:10, 171:27, 179:10, 182:2, 195:1 researched [1] -215:5 researching [1] -122:14 reservations [3] -183:24, 231:19, 236:5 reserve [4] - 144:7, 148:24, 186:4, 190:28 reserves [6] - 14:22, 15:13, 15:17, 40:7, 186:26, 188:28 reserving [1] - 77:16 reservoir [14] -175:5, 175:6, 175:11, 177:9, 185:4, 185:26, 188:10, 189:6, 191:5, 191:23, 192:11, 193:29, 194:2 reservoirs [10] -175:7, 175:8, 176:10,

residential 131 -70:24, 142:9, 152:3 Residents [7] -20:18, 32:1, 64:17, 82:5, 110:19, 113:1, 215:10 residents [6] - 24:29, 26:2, 29:25, 33:8, 47:29, 170:12 resolve [1] - 46:12 resolved [2] - 46:29, resource [1] - 154:28 Resources [5] -123:1, 137:8, 138:5, 181:24, 181:28 resources [7] -35:22, 62:5, 155:10, 156:5, 194:22, 218:21, 221:6 respect [10] - 57:4, 63:14, 79:6, 95:19, 95:25, 136:21, 140:15, 145:1, 202:28, 230:23 respectfully [1] -59:20 respective [1] - 16:5 respectively [1] -163:18 respects [2] - 110:9, 137:23 respond [22] - 7:13, 20:15, 55:19, 57:22, 65:11, 66:24, 69:24, 109:6, 110:22, 121:21, 124:4, 135:5, 135:9, 139:10, 139:19, 140:4, 140:13, 178:24, 181:14, 186:23, 194:10, 241:16 responded [4] -84:19, 167:1, 167:5, 215:14 respondent [2] -2:30, 3:31 responding [2] -167:9, 239:19 response [25] -20:22, 22:15, 24:3, 27:6, 27:24, 29:26, 32:1, 35:13, 36:3, 40:26, 40:28, 61:7, 64:13, 68:20, 72:15, 84:20, 109:15, 112:20, 135:29, 138:7, 161:21, 166:21, 181:19,

191:2. 192:2. 193:24

Response [1] - 163:2 responsibilities [2] -117:8, 125:6 responsibility [3] -5:11, 6:28, 122:12 responsible [8] -32:28, 81:8, 92:23, 97:20, 112:22, 125:3, 125:16, 126:9 rest [10] - 27:5, 64:29, 115:19, 120:4, 120:17, 128:18, 199:22, 214:14, 215:17, 241:23 restrict [1] - 149:3 restricted [1] -219:28 restriction [1] result [16] - 13:23, 14:8, 23:2, 27:17, 32:16, 34:1, 34:2, 37:16, 46:3, 63:13, 73:26, 114:19, 130:28, 167:20, 202:8, 203:19 resulted [2] - 134:21, 150:14 resulting [3] - 21:8, 71:10, 99:27 resume [3] - 114:11, 166:3, 166:11 **RESUMED** [3] - 4:1, 114:6, 165:27 resumés [1] - 10:20 retailing [1] - 152:3 retained [1] - 125:25 revenue [1] - 28:19 reverse [4] - 57:7, 150:18, 187:27, 188:3 reversed [1] - 231:2 reversing [1] revert [1] - 245:26 review [6] - 16:25, 20:12, 34:29, 65:20, 154:29, 206:18 reviewed [6] - 47:3, 65:16, 106:16, 112:26, 143:13, 156:18 reviewing [3] -126:9, 213:5, 213:7 revised [1] - 34:8 revival [2] - 150:17, 150:29 rezone [1] - 208:9 rezoned [4] - 147:18,

147:25, 148:3, 198:3

181:26, 184:4

185:11. 186:7.

189:19, 190:13,

rezoning [8] -	Robinson [2] -	safe [14] - 30:19,	175:8	140:18, 176:15,
147:24, 198:8,	170:10, 171:1	32:25, 44:16, 44:22,	sands [1] - 13:9	179:7, 192:7, 212:9,
205:21, 207:25,	robustness [2] -	44:26, 45:17, 92:16,	sandstone [1] -	212:18, 241:5
208:9, 230:12,	152:20, 153:1	103:10, 104:20,	177:7	seabed [6] - 128:18,
230:13, 234:12	rock [11] - 52:20,	119:6, 126:23, 127:6,	satisfied [1] - 98:24	129:11, 129:12,
Ria [11] - 141:20,	76:28, 174:2, 215:19,	133:1, 140:25	satisfy [3] - 49:14,	133:21, 134:1, 240:29
141:25, 196:20,	216:6, 216:7, 216:8,	Safe [3] - 31:13,	49:16, 101:9	Seacore [1] - 126:3
200:11, 200:13,	216:12, 216:14,	100:2, 111:5	satisfying [1] - 54:20	Seaflow [1] - 137:14
200:20, 205:23,	216:21, 216:25	safely [3] - 98:17,	sausage [1] - 238:29	seals [2] - 86:4, 86:5
208:27, 211:19,	Rocky [1] - 13:19	98:25, 140:28	sausage-type [1] -	seaport [1] - 160:12
214:10, 231:7	role [7] - 7:12, 11:15,	Safety [13] - 35:13,	238:29	search [1] - 87:19
Richard [1] - 114:14	17:7, 24:14, 142:17,	35:15, 61:5, 61:20,	Save [1] - 170:11	season [1] - 193:28
RICHARD [1] - 2:19	151:20, 179:25	61:21, 82:26, 84:11,	saw [6] - 5:27, 20:1,	seasonal [2] - 4:27,
richer [1] - 68:15	roles [1] - 145:22	112:20, 199:29,	184:1, 184:7, 184:8,	19:9
rightly [1] - 240:11	rollout [1] - 154:15	200:4, 203:4, 213:4,	184:15	seasoned [1] - 10:22
Ringaskiddy [1] -	room [3] - 83:21,	221:16	SC [1] - 2:8	seats [3] - 4:7,
126:6	103:10, 242:2	safety [77] - 29:25,	scale [12] - 7:13,	114:11, 166:4
Riparian [1] - 139:2	root [1] - 86:28	30:7, 30:23, 31:6,	8:28, 12:13, 18:10,	Second [1] - 241:21
riparian [2] - 112:13,	Rosslare [1] - 101:24	31:9, 31:15, 31:19,	18:24, 19:23, 24:12,	second [13] - 16:13,
138:28	Rotterdam [1] -	31:21, 31:24, 31:25,	35:6, 55:29, 155:4,	39:29, 40:13, 46:14,
ripping [1] - 216:8	161:7	35:5, 37:22, 37:24,	184:20, 211:10	52:13, 70:1, 85:16,
Ripping [1] - 216:18	rough [1] - 192:7	37:28, 43:25, 43:27,	scales [1] - 246:4	91:5, 133:6, 167:15,
rise [3] - 21:13,	round [1] - 36:13	44:7, 44:9, 44:11,	Scapa [1] - 132:2	216:2, 237:7, 239:24
39:23, 52:16	route [3] - 102:26,	44:12, 44:13, 44:21,	scenario [1] - 46:1	Secondary [1] -
riser [1] - 133:20	217:8, 219:13	44:24, 45:15, 45:19,	scenarios [1] - 93:23	108:10
rises [1] - 72:24	Route [1] - 108:10	45:21, 46:9, 46:11,	scene [1] - 172:9	secondary [1] -
rising [3] - 12:25,	row [1] - 204:6	46:25, 46:28, 47:17,	scenery [1] - 91:21	148:3
12:26, 39:12	Royal [2] - 125:29,	48:25, 49:16, 51:7, 51:14, 60:4, 60:27,	scenic [2] - 109:13,	Secondly [3] -
Risk [12] - 112:26,	223:23	60:28, 61:18, 81:11,	149:21	173:29, 194:27, 215:9
170:16, 200:7,	RPGs [2] - 153:19,	81:13, 82:12, 83:15,	scheduled [2] - 45:6,	secondly [1] -
200:23, 200:29,	154:6	83:16, 86:14, 86:17,	49:19	170:22
202:7, 202:9, 202:17,	rubber [1] - 86:4	87:2, 87:10, 98:15,	School [1] - 5:7	seconds [1] - 223:21
222:22, 222:24,	rude [1] - 197:27	111:2, 118:29, 122:2,	science [1] - 156:27	secretary [1] - 41:17
222:28, 224:8	rule [2] - 87:29,	126:15, 126:21,	Science [2] - 5:5,	Section [11] - 99:9,
risk [10] - 16:18, 31:7, 51:24, 60:10,	133:3	132:19, 132:21,	124:17	105:2, 106:13, 109:22, 113:9,
111:13, 112:23,	ruling [3] - 30:24,	162:9, 162:27,	scope [3] - 63:17,	113:10, 153:17,
130:4, 131:5, 139:1,	44:18, 88:1 run [5] - 43:2, 93:11,	163:14, 170:13,	142:12, 234:7	162:2, 162:10, 208:26
218:2	121:10, 183:6, 241:5	170:26, 170:29,	Scotland [2] - 79:12, 132:2	section [29] - 11:1,
risks [1] - 81:1	running [2] - 88:7,	174:18, 199:12,	screen [1] - 134:23	11:2, 16:21, 18:8,
river [1] - 45:7	240:5	201:14, 201:18,	Screening [6] -	26:5, 42:14, 52:13,
River [5] - 43:15,	rupture [2] - 131:22,	203:2, 214:5, 218:24,	232:16, 232:24,	52:28, 52:29, 90:12,
43:26, 47:29, 48:4,	193:9	220:23, 222:4,	233:6, 233:20,	101:10, 102:20,
49:24	rural [7] - 135:11,	235:17, 235:23,	233:24, 234:17	109:21, 112:15,
Road [1] - 120:21	135:17, 147:25,	246:8, 246:10, 246:22	screening [2] -	127:4, 128:9, 142:18,
road [7] - 91:16,	151:21, 151:22,	sale [4] - 8:16, 67:22,	232:26, 233:12	143:14, 144:21,
91:18, 91:20, 107:2,	157:5, 159:12	121:4, 121:7	Sea [14] - 10:3,	148:6, 148:14,
108:8, 237:21	rush [1] - 60:9	salt [18] - 174:3,	13:27, 33:7, 77:20,	149:11, 151:4,
roads [1] - 53:4	Russia [4] - 14:9,	174:6, 174:9, 174:10, 174:11, 175:9,	109:29, 110:6, 111:6,	156:19, 158:24,
roadway [1] - 88:3	15:1, 28:14, 36:7	182:11, 182:14,	111:23, 132:5,	159:24, 163:27,
ROBINSON [19] -	Russian [3] - 67:1,	182:15, 182:27,	134:22, 135:22,	164:16, 170:29
170:10, 171:4,	67:6, 67:10	183:2, 183:8, 183:11,	136:7, 136:9, 186:26	sections [4] - 6:25,
222:11, 224:16,	Ryan [1] - 244:18	184:28, 185:2, 185:4,	SEA [6] - 205:22,	33:11, 86:5, 162:1
224:19, 236:10,	régime [1] - 58:12	195:4	206:16, 206:17,	sector [7] - 13:1,
236:18, 236:21,		saltwater [1] -	230:22, 233:1, 233:26	25:7, 65:15, 78:18,
237:9, 238:14,	S	136:25	sea [18] - 22:27,	80:9, 160:6, 243:18
238:19, 238:26,		San [1] - 10:1	23:2, 23:27, 98:15,	sectors [2] - 144:6, 148:24
239:16, 240:25,	SAC [1] - 135:14	sanction [1] - 14:4	100:2, 103:19, 127:2,	secure [10] - 14:20,
241:18, 241:26, 242:1, 242:6, 242:13	sad [1] - 243:7	sand [2] - 175:7,	127:22, 128:27,	17:24, 18:5, 22:4,
272.1, 272.0, 272.13	200 [·] = 10.1		129:17, 137:13,	11.27, 10.0, 22.7,

30:19, 44:16, 45:17,	self-sufficient [2] -	Services [5] - 2:29,	58:27, 59:3, 64:21,	228:28, 229:7,
54:2, 69:8, 158:5	12:22, 13:14	2:30, 3:30, 3:32,	65:3, 65:6, 75:5, 75:8,	229:15, 230:4,
secured [1] - 20:27	sell [9] - 22:18,	169:10	75:11, 79:23, 81:27,	230:16, 230:20,
securely [2] -	22:23, 32:22, 57:14,	services [9] - 8:21,	81:28, 82:1, 93:21,	233:25, 243:27,
126:25, 140:28	57:16, 72:15, 239:14,	20:6, 28:11, 125:25,	95:17, 97:19, 97:25,	244:21, 244:27,
	239:21, 243:6	150:14, 150:19,	102:12, 102:21,	245:5, 245:11, 245:24
securing [5] - 18:1,			102:25, 103:5,	SHANNON [4] - 1:7,
21:26, 24:19, 29:1,	seller [1] - 73:20	152:4, 157:11, 167:20		
154:14	sellers [2] - 16:4,	session [2] - 114:28,	103:20, 104:14,	2:8, 3:9, 3:15
Securing [1] - 16:22	26:14	126:21	104:16, 106:6,	shareholder [4] -
security [26] - 16:4,	selling [2] - 70:17,	set [10] - 10:28,	106:12, 106:21,	6:9, 7:26, 10:9, 10:13
16:15, 16:27, 17:25,	71:28	11:15, 17:26, 46:8,	107:4, 107:7, 107:17,	shareholders [1] -
45:15, 46:29, 47:1,	semi [1] - 135:11	50:22, 59:11, 82:16,	107:21, 108:12,	80:18
47:3, 48:27, 98:4,	Seminole [1] - 10:1	98:21, 151:7, 154:23	108:14, 109:1,	sharply [1] - 26:13
123:7, 130:19,	Seminole-San [1] -	set-up [1] - 59:11	109:16, 111:18,	SHEARER [54] - 3:5,
130:29, 153:1, 153:9,	10:1	setting [6] - 77:11,	111:29, 112:26,	4:18, 4:21, 38:6, 39:1,
157:17, 158:9, 159:6,		80:3, 81:6, 81:15,	114:14, 115:16,	61:13, 61:27, 64:14,
	Senator [2] - 47:8		115:23, 116:14,	
163:24, 165:12,	send [1] - 83:29	153:21, 193:1	116:17, 116:19,	65:11, 66:23, 67:25,
178:4, 185:29,	senior [1] - 117:5	Settlements [1] -		68:20, 69:23, 71:23,
191:17, 243:24,	Senior [1] - 208:24	150:10	116:22, 116:23,	73:1, 73:15, 75:6,
244:22, 245:12	seniority [1] - 117:9	seven [3] - 50:6,	116:26, 117:7, 117:8,	75:13, 75:19, 77:25,
Security [3] - 5:18,	sense [6] - 12:12,	133:18, 156:13	120:3, 124:22,	77:28, 78:9, 79:6,
17:1, 158:2	22:23, 23:27, 23:28,	several [9] - 9:17,	125:14, 125:18,	80:5, 83:18, 84:24,
See [1] - 132:4	42:19, 231:8	11:4, 11:6, 19:28,	125:23, 125:24,	85:4, 85:10, 86:11,
see [29] - 10:20,	sensible [2] -	24:29, 26:3, 36:3,	126:7, 127:3, 135:29,	87:7, 87:16, 88:16,
40:2, 42:28, 49:25,	161:16, 220:10	66:27, 81:10	136:3, 136:6, 136:8,	89:7, 89:20, 90:9,
57:20, 58:19, 72:19,	·	Several [1] - 50:11	139:3, 139:10,	91:4, 192:15, 192:20,
74:13, 76:1, 79:3,	sensitive [2] - 16:16,	severely [1] - 186:3	139:19, 140:4,	236:15, 236:19,
	79:15	•	140:13, 140:24,	236:29, 237:13,
82:26, 83:6, 88:7,	sent [1] - 35:12	Seveso [7] - 112:16,	142:13, 142:22,	238:5, 238:17,
88:29, 91:15, 93:10,	Separate [1] - 189:14	112:22, 112:25,	142:25, 143:3,	
105:6, 111:1, 111:21,	separate [9] - 8:4,	201:3, 213:29,		238:22, 239:10,
177:1, 182:6, 210:25,	8:10, 20:6, 34:29,	221:10, 233:28	143:12, 143:18,	239:18, 240:20,
232:3, 232:28,	91:13, 92:4, 95:8,	shallow [1] - 108:20	143:23, 145:3, 147:4,	241:14, 241:19,
234:16, 234:17,	96:27, 194:16	shallower [1] -	147:19, 147:26,	241:28, 242:4, 242:8,
240:28, 241:4, 242:1	separately [2] - 26:4,	103:28	147:29, 148:2,	242:15
seek [5] - 22:8, 94:2,	138:22	shallowest [1] -	148:28, 149:4,	Shearer [19] - 4:14,
98:27, 136:23, 239:8	September [4] -	103:5	149:27, 152:10,	4:23, 38:8, 39:7,
seeking [4] - 8:7,	• • • • • • • • • • • • • • • • • • • •	Shannakea [1] -	152:14, 154:17,	39:10, 42:12, 48:19,
72:20, 72:22, 94:1	41:16, 41:21, 42:6,	106:10	154:28, 155:1, 155:2,	49:21, 64:10, 76:7,
seem [6] - 116:28,	63:4		155:27, 156:1, 156:5,	76:9, 79:1, 85:15,
177:23, 178:20,	sequestered [1] -	Shannon [219] -	156:17, 158:29,	87:15, 88:12, 89:4,
	240:13	4:25, 5:3, 5:13, 6:18,	159:14, 159:17,	90:29, 96:12, 190:25
180:26, 227:23,	sequestering [1] -	6:20, 6:24, 6:29, 7:9,	159:21, 159:23,	
243:17	240:17	7:16, 7:17, 7:19, 7:25,	160:8, 160:15,	Shearer's [1] - 78:25
sees [1] - 58:1	series [3] - 49:2,	8:9, 8:29, 9:8, 10:11,	160:17, 160:18,	SHEEHY [21] - 2:4,
segments [1] - 27:9	49:5, 239:10	10:19, 10:22, 11:16,		206:4, 206:11,
selected [3] - 97:27,	serious [5] - 87:28,	15:8, 18:4, 18:21,	160:22, 161:6, 161:7,	208:19, 208:24,
102:23, 109:2	131:21, 146:9,	18:26, 19:10, 20:1,	161:9, 161:12,	209:19, 210:22,
selecting [1] - 97:21	224:19, 231:19	20:5, 20:19, 20:23,	161:13, 161:14,	215:23, 216:16,
selection [18] -		20:27, 21:4, 22:14,	161:17, 161:26,	228:18, 229:16,
38:13, 38:14, 59:12,	seriously [1] -	22:17, 22:24, 23:2,	164:26, 164:29,	229:27, 231:26,
96:21, 98:28, 99:7,	235:11		185:12, 197:14,	232:10, 232:20,
	serve [3] - 26:26,	23:17, 23:26, 23:28,	197:15, 198:4,	233:9, 233:18,
99:18, 101:7, 104:27,	145:27, 234:27	24:7, 24:27, 25:21,	198:29, 199:7,	233:29, 234:5,
105:8, 113:3, 113:21,	served [2] - 108:8,	25:28, 28:5, 28:8,	199:16, 199:21,	234:18, 234:20
125:7, 126:19, 127:8,	125:9	28:15, 28:17, 28:22,	200:21, 202:16,	·
127:10, 127:13,	serves [1] - 86:16	28:28, 31:28, 32:8,	203:3, 205:24,	Sheehy [7] - 208:24,
127:17	Service [2] - 146:17,	32:13, 32:16, 32:20,	208:26, 209:29,	211:18, 215:2,
SELECTION [1] -	146:27	32:24, 33:22, 34:1,		215:12, 215:14,
97:15	service [8] - 25:24,	35:12, 36:8, 36:10,	211:19, 214:8,	233:6, 234:4
Selection [3] - 101:1,		37:21, 40:27, 41:2,	214:24, 215:3,	Sheep [1] - 102:7
109:21, 113:11	131:20, 131:23,	41:10, 53:11, 53:16,	217:28, 218:25,	Sheet [1] - 61:6
self [2] - 12:22, 13:14	132:18, 133:2, 161:7,	53:17, 53:19, 57:5,	225:8, 225:23,	sheet [1] - 96:27
,	161:9, 230:17	· · · · · · · · · · · · · · · · · · ·	225:29, 227:4,	

sheets - 35-5,	61.5, 61.9, 61.11 1242.3, 124.29 side [is] - 9.9, 9.26, 5 sipping [in] - 33.29 sipping [in] - 33.29 sipping [in] - 33.29 sipping [in] - 33.29 six [in] - 24.7, 24.24 six [in] - 24.2, 24.27 six [in] - 24.2, 24.2 six [in] - 24.2					
Sheets -61-20,	Sheets -61 20		103:10, 108:21,		10:1	
		61:5, 61:9, 61:11	· ·	side [15] - 9:9, 9:26,	sipping [1] - 33:29	131:26, 186:2
Shelign 124.27, 129.20, 130.13, 110.22, 139.12, 38.13, 38.14, 82.11, 149.28, sixhin 48.12, 87.12, sixhin 48.12,	Shelip 124.27, 129.20, 130.13, 110.22, 139.12, 38.13, 38.14, 68.21, 17.12, 17.12, 125.12, 18.12, 132.26, 134.2, 172.24, 173.17, 80.14, 64.21, 87.19, 19.22, 134.27, 138.22, 138.13, 139.21, 138.13, 139.21, 138.13, 139.21, 138.13, 139.21, 138.13, 139.21, 139.22, 139.13, 139.24, 139.23, 139.18, 139.22, 139.18, 139.22, 139.18, 139.22, 139.18, 139.22, 139.18, 139.22, 139.18, 139.22, 139.18, 139.22, 139.18, 139.22, 139.18, 139.22, 139.18, 139.22, 139.18, 139.22, 139.18, 139.22, 139.23, 139.23, 139.24	Sheets [4] - 61:20,	125:9, 125:19,	13:13, 72:18, 72:19,	site [87] - 24:7, 24:8,	six [8] - 5:27, 50:6,
1251. 1252 1311.0. 1311.4. 171.24. 1731.7. 801.4. 842.1, 871.9. 181.5. 181.9. 181.5. 171.22. 171.25. 171.22. 171.25. 181.5. 191.29. 181.5. 181.5. 181.5. 191.29. 181.5	125-1, 126-2 131-10, 131-14, 171-24, 173-17, 80-14, 48-21, 88-19, 18-15, 19-12, 18-15, 18-12, 18-15, 18-12, 18-15, 18-12, 18-15, 18-12, 18-15, 18-12, 18-15, 18-12, 18-15, 18-12, 18-15, 18-12, 18-15, 18-12, 18-15, 18-12, 18-15, 18-12, 18-15, 18-12,	61:21, 82:26, 84:12	127:19, 128:21,	101:22, 105:7,	32:20, 32:22, 34:27,	52:1, 88:8, 126:6,
		Shell [3] - 124:27,	129:20, 130:13,	110:22, 139:12,	38:13, 38:14, 59:11,	169:5, 169:19, 245:29
102-11, 102-29, 134-27, 136-22, 223-17, 223-22, 93.3, 93.6, 96-21, 136-22,	102-11, 102-29, 134-27, 136-22, 23-17, 223-22 93.3, 93.6, 98-21, 136-23, 1	125:1, 125:2	131:10, 131:14,	171:24, 173:17,	80:14, 84:21, 87:19,	sixth [1] - 48:12
188-13, 139-21, 188-13, 139-21, 189-22, 189-26, 189-22, 199-26, 189-22, 199-26, 189-22, 199-26, 189-22, 199-26, 189-22, 199-27, 199-19,	138:13, 139:21, 138:13, 139:21, 138:14, 139:21, 138:14, 139:21, 138:14, 139:21, 138:14, 139:21, 138:14, 139:21, 138:14, 139:21, 138:14, 139:21, 138:14, 139:21, 138:14, 138:14, 139:21, 138:14, 139:21, 138:14, 139:21, 138:14, 139:22, 139:23, 138:18, 139:21, 138:18, 139:22, 139:26, 133:19, 133:10, 133:19, 133:24, 139:24, 133:19, 133:24, 139:24, 133:19, 133:24, 139:27, 133:19, 133:24, 139:27, 133:19, 133:24, 139:27, 133:19, 133:24, 139:27, 133:19, 133:24, 139:27, 133:19, 133:24, 139:28, 133:19, 133:24, 139:28, 133:19, 133:24, 139:28, 133:19, 133:24, 139:22, 199:26, 133:19, 133:24, 139:28, 133:19, 133:24, 139:22, 199:26, 133:19, 133:24, 139:22, 199:26, 133:19, 133:24, 139:22, 199:26, 133:19, 133:24, 139:22, 199:26, 133:19, 133:24, 139:28, 139:28, 139:29, 139:	shelter [4] - 101:18,	132:26, 134:2,	177:25, 223:13,	88:15, 91:11, 91:28,	size [11] - 18:15,
		102:11, 102:29,	134:27, 136:22,	223:17, 223:22	93:3, 93:6, 96:21,	19:4, 89:5, 89:10,
100-110, 1435, 127-1, 191-29, 204-15, 218-3 sign 4-53, 35-7 sign-off 19-45-3		136:23	138:13, 139:21,	sight [2] - 95:9,	97:22, 97:25, 98:22,	89:27, 100:15,
		sheltered [8] - 99:4,	140:26, 178:2, 190:9,	134:18	98:28, 99:1, 99:7,	126:27, 132:6,
		104:19, 113:5, 127:1,	191:29, 204:15, 218:3	sign [2] - 45:3, 85:7	99:8, 99:10, 99:13,	204:15, 210:20,
Sheltered (- 99:25 120:29	Sheltred (i) - 99:25 120:29 58.hg 21-17:3 109:29, 104:6, 109:17 109:29, 104:6, 109:17 10	127:21, 129:14,	shipyard [1] - 130:22	sign-off [1] - 45:3	99:18, 100:11,	223:12
Ship Q - 179:3 ShORE -1.6 signed Q - 48:20, 105:6, 105:8, 106:21, 104:11, 104:27, 127:19 105:26, 105:8, 106:22, 106:22, 106:22, 106:22, 106:22, 106:22, 106:22, 106:22, 106:22, 106:23, 106:22, 106:24, 107:15, 107:19, 107:14, 107:15, 107:19, 107:26, 107:28, 107:28, 107:14, 107:16, 107:19, 107:26, 107:28, 10	Ship	129:15, 130:18	shop [2] - 120:19,	signatory [3] - 62:10,	102:22, 103:13,	sizes [5] - 88:10,
Ship	Ship	Sheltered [1] - 99:25	120:29	62:13, 62:17	103:29, 104:6,	89:19, 90:1, 90:7,
45:26, 45:28, 46:2, 104:19, 105:7, 108:6, 232:27 106:22, 106:26, 157:14 108:20, 156:14, 65:29, 129:15, 129:19, 107:15, 107:19, 107:26, 107:26, 107:28, 107:26, 107:28, 107:26, 107:28, 107:28, 107:28, 108:23, 109:31,	45:26, 45:29, 46:2, 104:19, 105:7, 108:6, 232:27 106:22, 106:26, 157:14, 107:15, 107:19, 107:15, 107:19, 107:26, 107:26, 107:28, 107:2	Ship [2] - 179:3	SHORE [1] - 1:6	signed [5] - 48:20,	104:11, 104:27,	127:19
4.526, 45.28, 46.2, 104:19, 1057, 1078:6, 123:27 106:22, 106:26, 157:11 107:10, 1	45.52, 45.28, 45.2 104:19, 105.7, 108:6, 232.27 106:22, 106:26, 157:11 105.7, 107:14, 107:1, 107:19, 107:3, 107:1, 107:19, 107:3, 107:2, 107:2, 107:3, 107:1, 107:19, 107:3, 107:2, 107:2, 107:2, 107:3, 107:1, 107:19, 107:3, 107:2, 107:3, 107:1, 107:19, 107:3, 107:2, 107:2, 107:2, 107:2, 107:3, 107:1, 107:19, 107:3, 107:2, 107	• • • •	shore [10] - 55:15,	49:7, 63:25, 139:20,	105:6, 105:8, 106:21,	skills [2] - 156:28,
53:21, 54:27, 54:29, 129:19, 129:19, significance 1 107:3, 107:7, 107:14, skin 1 22:21 skip 1 23:27, 139:26 107:36, 107:7, 107:14, skin 1 22:21 skip 1 23:27, 139:26 107:26, 107:28, slide 23 -15:14, 15:19 107:26, 107:28, slide 23 -15:14, 15:19 107:26, 107:28, slide 23 -15:14, 15:19 108:5, 108:8, 108:11, 15:19 108:5, 108:8, 108:11, 108:5, 108:8, 108:11, 15:19 108:5, 108:8, 108:11, 15:19 108:5, 108:8, 108:11, 108:13, 108:24, 109:3, 109:2, 108:3, 109:13, 108:3, 109:13, 108:3, 109:13, 108:3, 109:3, 108:3, 109:3, 108:3, 109:3, 108:3, 109:3, 108:3, 109:3, 108:3, 109:3, 108:3, 109:3, 108:3, 109:3, 108:3, 109:3, 108:3, 109:3, 108:3, 109:3, 108:3, 108:3, 109		•	104:19, 105:7, 108:6,	232:27	106:22, 106:26,	157:11
55:14, 65:29, 66:1, 130:18, 133:22, 139:26 significant			129:15, 129:19,	significance [1] -	107:3, 107:7, 107:14,	skin [1] - 223:21
66.3, 73-23, 75-17, 75-12, 133-27, 51-12, 133-27, 51-12, 133-27, 139-26, 132-27, 139-26, 139-13, 139-	5663, 73-23, 75-17, 133-27, 139-26 significant 1/2 107-26, 107-28, 108-14, 151-14, 100-5, 100-7, 104-20, shores [n] - 104-4 shores [n] - 104-4 155:2, 156:10, 158:7, 108-16, 108-20, 108-13, 109-13, 108-14, 109-3, 109-13, 108-14, 109-3, 109-13, 108-14, 109-3, 109-13,		130:18, 133:22,	97:5	107:15, 107:19,	skip [1] - 18:8
			133:27, 139:26	significant [12] -	107:26, 107:28,	• • •
100.5, 100.7, 104.20, shores 1 - 104.4 155.2, 156.10, 158.7, 108.16, 108.20, 108.20, 108.21, 109.2, 108.22, 109.1, 109.2, 108.22, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 109.3, 109.13, 109.13, 109.2, 109.10, 119.3, 109.10, 119.3, 109.10, 119.3, 109.10, 119.3, 109.10, 119.3, 109.10, 119.3, 109.10, 119.3, 109.10, 119.3, 109.10, 119.3, 109.10, 119.3, 109.10, 119.3, 109.10, 119.3, 109.10, 119.3, 109.10, 119.3, 119.3, 119.3, 119.3, 119.3, 119.3, 119.3, 109.1, 109.	100.5, 100.7, 104.20, shores 1 - 104.4 155.2, 156.10, 158.7, 108.16, 108.20, 108.21, 109.1, 109.2, 108.22, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 108.23, 109.1, 109.2, 109.3, 109.10, 109.3, 109.10, 109.3, 109.10, 109.3, 109.10, 109.3, 109.10, 109.3, 109.10, 109.3, 109.10, 109.3, 109.10, 109.3, 109.10, 109.3, 109.10, 109.3, 109.10, 109.3, 109.10, 109.3, 109.10, 109.3, 109.11, 109.2, 109.3, 109.11, 109.3, 109.11, 109.2, 109.3, 109.11, 109.2, 109.10, 109.11, 109.2, 109.10, 109.11, 109.2, 109.11, 109.2, 109.11, 109.2, 109.11, 109.2, 109.11, 109.2, 109.11, 109.2, 109.11, 109.2, 109.11, 109.2, 109.2, 109.11, 109.2, 109.2, 109.12, 109.2, 109.12, 109.2, 10		shoreline [1] - 149:8	•	108:5, 108:8, 108:11,	
111:11, 125:4, 126:4, 165:27, 165:27, 211:14, 230:14, 109:23, 109:13, 109:13, 109:13, 109:13, 109:14, 109:14, 109:15, 109:14, 109:15, 109:14, 109:15, 109:14, 109:14, 109:15, 109:14, 10	11111, 1254, 1264, 12624, 12625, 16527 16527, 21114, 230:14, 109:23, 109:13, 109:13, 109:13, 109:13, 109:13, 109:13, 109:13, 109:13, 109:13, 109:13, 109:13, 109:13, 109:13, 109:13, 109:14, 125:6, 126:14, 126:		shores [1] - 104:4		108:16, 108:20,	
126:24, 126:25, 165:27 211:14, 230:14, 109:3, 109:13, 109:19, 113:3, 109:19, 129:12 130:22, 130:23, 19:18, 26:13, 56:22, 133:21, 132:23, 95:6, 99:13, 108:24, 37:8, 37:10, 37:13, 127:10, 127:10, 127:10	165:27, 130:10, 165:27, 211:14, 230:14, 238:8, 242:28 109:3, 109:13, 133:3, 130:22, 130:22, 130:23, 131:28, 74:18, 78:29, 84:12, 37:8, 37:10, 37:13, 132:1, 125:6, 133:10, 120:9, 120:11, 133:10, 133:10, 133:24, 139:22, 189:26, 139:22, 189:28, 109:3, 131:28, 127:10, 127:12, 133:11, 133:16, 189:22, 189:26, 59:9, 59:14, 59:18, 127:17, 127:26, 133:19, 133:24, 139:29, 190:10, 59:29, 60:14, 101:1, 101:4, 101:5, 113:2, 127:27, 168:12, 170:28, 159:12, 159:27, 168:18, 195:24, 196:15, 196:12, 196:15, 196:12, 196:15, 196:12, 196:15, 101:12, 137:26 159:22, 223:4, 223:7, 223:24, 223:7, 223:24, 223:7, 223:24, 233:7, 169:22, 133:26, 169:22, 133:28, 169:22, 133:28, 169:22, 133:28, 169:22, 133:28, 169:22, 133:28, 169:22, 133:28, 169:22, 133:28, 169:22, 133:29, 169:22, 133:29, 169:14, 100:14, 101:5, 113:2, 129:24, 169:22, 130:27, 169:24, 130:24, 130:24,		SHORT [2] - 165:22,		108:23, 109:1, 109:2,	• • • • • • • • • • • • • • • • • • • •
126:27, 130:10,	126.27, 130.10, short [18] - 15.29, 238.8, 242.28 109.19, 113.3, 130.21, 131.28, 74.18, 782.9, 84.12, 95.6, 99.13, 108.24, 37.8, 37.10, 37.13, 37.17, 56.28, 59.6, 127.17, 127.12, 127.13, 127.12, 127.13, 127.14, 127.12, 127.14, 127.12, 127.1				109:3, 109:13,	
130:22, 130:23, 9:18, 26:13, 56:22, signify - 63:20 13:21, 125:6, 126:18, 127-4, 127:8, 126:18, 127-4, 127:8, 126:18, 127-4, 127:8, 127:10, 127:12, 126:18, 127-4, 127:8, 127:10, 127:12, 127:10, 127:13, 127:10, 127:13, 127:10, 127:12, 127:10, 127:13, 127:10, 127:12, 127:10, 127:13,	130:22, 130:23, 19:18, 26:13, 56:22, 19:18, 26:13, 56:22, 37:8, 37:10, 37:13, 13:11, 133:16, 139:22, 189:26, 59:9, 59:14, 59:18, 133:21, 133:24, 189:29, 190:10, 59:29, 60:14, 101:1, 101:4, 101:5, 113:2, 148:7, 156:4, 160:17, 56:22, 1794, 179:16, 1794, 179:16, 181:8, 195:24, 196:15, 196:12, 196:15, 199:22, 129:15, 223:2, 223:4, 223:7, 223:24 shortcut[1] - 218:13 shortfall [2] - 98:2, 58:29, 60:14, 101:4, 101:5, 113:2, 164:14, 164:26, 164:12, 170:28, 170:19, 224:23				109:19, 113:3,	•
130.26, 131.28, 74.18, 78.29, 84.12, SIGTTO [23] - 30.10, 126.18, 127.4, 127.8, 76.23 132.12, 132.23, 95.6, 99.13, 108.24, 37.13, 58.28, 59.6, 127.17, 127.26, 127.17, 127.26, 133.11, 133.16, 189.22, 189.26, 59.9, 59.14, 59.18, 128.26, 147.10, 127.17, 127.26, 133.19, 133.24, 189.29, 190.10, 59.29, 60.14, 101.1, 148.7, 156.4, 160.17, 70.19, 177.26, 207.6, 216.11 101.4, 101.5, 113.2, 164.14, 164.26, 164.17, 164.26,	130:26, 131:28, 74:18, 78:29, 84:12, SIGTTO [23] - 30:10, 126:18, 127:4, 127:8, 76:23 130:12, 132:23, 95:6, 99:13, 108:24, 37:8, 37:10, 37:13, 127:10, 127:12, 127:26, 133:11, 133:16, 189:22, 189:26, 59:9, 59:14, 59:18, 128:26, 147:10, 128:71, 172:26, 133:11, 133:16, 189:22, 189:26, 59:9, 59:14, 59:18, 128:26, 147:10, 128:71, 172:26, 127:17, 172:26, 127:17, 172:26, 127:17, 172:26, 127:17, 172:26, 128:26, 147:10, 128:71, 172:26, 128:12, 172:27, 148:71, 156:4, 160:17, 148:71, 156:4, 160:17, 148:71, 156:4, 160:17, 148:71, 156:4, 160:17, 164:14, 164:26, 164:14, 164:14, 164:26, 164:14, 164:14, 164:14, 164:14, 164:14, 164:14, 1			•	113:21, 125:6,	
33:12, 132:23, 95:6, 99:13, 108:24, 37:8, 37:10, 37:13, 127:10, 127:12, 127:17, 127:26, 62:27 133:11, 133:16, 133:24, 189:22, 189:10, 59:9, 59:14, 59:18, 59:14, 193:12, 133:19, 133:24, 189:29, 190:10, 59:29, 60:14, 101:1, 148:7, 156:4, 160:17, 30:13, 39:26, 69:3, 70:19, 177:26, 207:6, 216:11 101:4, 101:5, 113:2, 168:12, 170:28, 30:13, 39:26, 69:3, 70:17, 103:27, 70:19, 177:26, 30:13, 39:26, 69:3, 70:17, 103:27, 70:19, 177:26, 170:19, 224:23 20:15, 210:20, 210:15, 210:20, 210:15, 210:20, 210:27, 211:2, 211:6, 23:21, 23:22, 223:4, 223:7, 223:13, 223:17, 223:13, 223:17, 223:13, 223:17, 223:13, 223:17, 223:13, 223:17, 223:13, 223:17, 223:13, 223:17, 223:13, 223:17, 223:13, 223:17, 23:10 35:1	33:12, 132:23, 95:6, 99:13, 108:24, 37:8, 37:10, 37:13, 127:10, 127:12, 127:17, 127:26, 62:27 13:16, 63:11, 133:16, 133:19, 133:24, 189:29, 190:10, 59:29, 60:14, 101:1, 148:7, 156:4, 160:17, 30:13, 39:26, 69:3, 70:19, 177:26, 207:6, 216:11 101:4, 101:5, 113:2, 168:12, 170:28, 30:13, 39:26, 69:3, 70:17, 103:27, 70:17, 103:27, 70:17, 103:27, 179:6, 181:8, 195:24, shortterm[1] - 127:8, 127:27, 205:19, 210:2, 210:15, 210:20, 10:12, 137:26 shortfall [2] - 98:2, 38:milar [1] - 12:19, 38:milar [2] - 31:22, 23:17, 223:13, 223:17, 223:13, 223:17, 223:24, 223:7, 223:24 98:26 shortfall [2] - 98:2, 48:29, 65:5, 65:6, 48:29, 65:5, 65:6, 48:29, 65:5, 65:6, 199:21, 113:10 155:27, 160:18, 50:19, 103:2, 109:24, 113:10 155:27, 160:18, 160:21, 150:24, 163:3, 163:24, 132:6, 142:25, 109:24, 133:24, 132:6, 142:25, 109:24, 133:24, 132:26, 102:29, 109:24, 123:24, 233:24, 132:26, 102:29, 10:14, 10:15, 113:2, 10:14, 10:15, 113:2, 10:14, 10:15, 113:2, 10:16, 40:26, 10:16, 40			• • • • • • • • • • • • • • • • • • • •	126:18, 127:4, 127:8,	
133:9, 133:10, 120:9, 120:11, 37:17, 58:28, 59:6, 127:17, 127:26, 62:27 small g - 9:15, 133:19, 133:24, 139:29, 168:12, 170:28, 127:17, 127:26, 128:29, 151:20 139:29, 159:14, 59:18, 128:26, 147:10, 138:75, 156:4, 160:17, 138:75, 156:4, 160:17, 138:75, 156:4, 160:17, 138:75, 156:4, 160:17, 138:75, 156:4, 160:17, 138:75, 156:4, 160:17, 138:75, 156:4, 160:17, 138:75, 156:4, 160:17, 138:75, 156:4, 160:17, 138:75, 156:4, 160:17, 138:75, 156:4, 160:17, 138:75, 156:4, 160:17, 138:75, 156:4, 160:17, 138:75, 176:4, 160:17, 138:75, 176:4, 160:17, 138:75, 176:4, 160:17, 138:75, 176:4, 160:17, 138:75, 176:4, 160:17, 138:75, 176:4, 160:17, 138:75, 176:4, 160:17, 138:75, 176:4, 160:17, 138:75, 176:4, 160:17, 138:75, 176:4, 160:17, 138:75, 176:4, 160:17, 138:75, 176:4, 160:17, 138:75, 176:4, 160:17, 138:75, 176:4, 160:17, 139:17, 139:17, 139:18, 189:18, 189:19, 188:19, 199:19, 188:12, 189:19, 189:19, 188:12, 170:28, 139:18, 189:19, 188:12, 170:28, 139:18, 189:19, 188:12, 170:28, 139:18, 189:19, 199:19, 188:12, 170:18, 189:19, 199:18, 188:26, 147:10, 148:75, 156:4, 160:17, 148:75, 148:75, 170:28, 148:75, 170:28, 148:75, 170:28, 148:75, 170:28, 148:75, 170:28, 148:75, 170:28, 148:75, 170:28, 148:75, 170:28, 148:75, 170:28, 148:75, 170:28, 148:75, 170:28, 148:75, 170:28, 14	133:9, 133:10, 120:9, 120:11, 37:17, 58:28, 59:6, 127:17, 127:26, 59:29, 59:14, 59:18, 128:26, 147:10, 138:24, 139:22, 189:26, 59:9, 59:14, 59:18, 148:7, 156:4, 160:17, 148:7, 160:17, 148:7, 160:17, 148:7, 160:17, 148:7, 160:17, 148:7, 160:17, 148:7, 160:17, 148:7, 160:17, 148:7, 160:17, 148:7, 160:17, 148:7, 160:17, 148:7, 160:17, 148:7, 160:17, 148:7, 160:17, 148:7, 177, 127:28, 148:7, 177, 127:28, 148:7, 177, 177:28, 148:7, 177:18, 148:7, 177:18, 148:7, 177:18, 148:7, 177:18, 148:7, 177:18, 148:7, 177:18, 148:7, 177:18, 148:7, 177:18, 148:7, 177:18, 148:7, 177:18, 148:7, 177:18, 148:7, 177:18,				127:10, 127:12,	
133:11, 133:16,	133:11, 133:16,				127:17, 127:26,	• • • • • • • • • • • • • • • • • • • •
133:19, 133:24, 189:29, 190:10, 59:29, 60:14, 101:1, 148:7, 156:4, 160:17, 30:13, 39:26, 69:3, 170:19, 177:26, 207:6, 216:11 101:4, 101:5, 113:2, 164:14, 164:26, 70:17, 103:27, 179:6, 181:8, 195:24, short-term[t] - 125:12, 125:27, 205:19, 210:2, 205:19, 210:2, 205:19, 210:2, 205:19, 210:2, 210:15, 210:20, 210:27, 211:2, 211:6, 223:2, 223:4, 223:7, shortage [2] - shortcut [t] - 218:13 shortfall [2] - 98:2, 28:16, 42:19, 48:23, 232:1, 322:3, 332:6 375:29, 232:13, 223:17, shortfall [2] - 98:2, 28:16, 42:19, 48:23, 36:3, 100:29, 130:27, 30:13, 39:26, 69:3, 30:14, 10:22, 30:10, 22, 30:10, 22, 30:10, 22, 30:10, 22, 30:10, 22, 30:10, 22, 30:10, 22, 30:10, 22, 30:10, 22, 30:21, 30:21, 30:21, 30:21, 30:21, 30:21, 30:21, 30:21, 30:21, 30:21, 30:21, 30:21, 30:21, 30:21, 30:21,	133:19, 133:24, 189:29, 190:10, 59:29, 60:14, 101:1, 148:7, 156:4, 160:17, 30:13, 39:26, 69:3, 170:19, 177:26, 207:6, 216:11 101:4, 101:5, 113:2, 164:14, 164:26, 70:17, 103:27, 178:4, 179:1, 179:3, 179:6, 181:8, 195:24, short-term[1] - 125:12, 125:27, 205:19, 210:2, 205:19, 210:2, 205:19, 210:2, 205:19, 210:2, 205:19, 210:2, 205:19, 210:2, 210:15, 210:20, 210:15, 210:20, 210:27, 211:2, 211:6, 232:2, 233:4, 223:7, shortcut[1] - 218:13 shortfall [2] - 98:2, 98:26 48:29, 65:5, 65:6, shortfall [2] - 98:2, 98:26 48:29, 65:5, 65:6, 36:3, 167:24, 183:21 show[1] - 13:19 155:27, 156:10, 155:27,				128:26, 147:10,	
170:19, 177:26, 207:6, 216:11 101:4, 101:5, 113:2, 164:14, 164:26, 70:17, 103:27, 179:6, 181:8, 195:24, 156:22 170:19, 224:23 210:15, 210:20, 195:27, 196:15, 190:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 137:26 132:8 101:12, 132:3, 223:17, 223:13, 223:17, 233:14 298:26 48:29, 65:5, 65:6, 109:21, 113:10 156:16, 157:12, 162:5 160:8 150:14, 108:18, 130:21, 108:11, 109:13, 109:21, 113:10 156:16, 157:12, 162:5 160:18, 150:19, 130:28, 123:11 132:2, 129:7, 130:12, 129:12 130:14, 106:3, 106:3, 167:24, 183:21 130:14, 106:3, 106:3, 167:24, 183:21 150:14, 106:3, 106:3, 167:24, 183:21 150:14, 106:3, 106:3, 167:24, 183:21 150:14, 106:3, 106:3, 167:24, 183:21 150:14, 106:3, 106:3, 167:24, 183:21 156:16, 157:12, 162:5 134:22 156:18, 160:21, 130:22, 129:24, 130:22, 129:24, 130:22, 129:24, 129:20:15 130:25, 130:27, 130:27, 130:27, 130:27, 113:20 130:27, 113:10 156:16, 157:12, 162:5 130:11, 124:23 100:11, 130:13, 130:14, 106:3, 106:3, 167:24, 183:21 150:14, 106:3, 106:3, 167:24, 183:21 150:14, 106:3, 106:3, 167:24, 183:21 150:14, 106:3, 106:3, 166:14, 106:3, 106:3, 167:24, 183:21 150:14, 106:3, 106:	170:19, 177:26, 207:6, 216:11 101:4, 101:5, 113:2, 164:14, 164:26, 70:17, 103:27, 179:14, 179:3, 179:15, 179:15, 179:15, 17				148:7, 156:4, 160:17,	
178:4, 179:1, 179:3, 179:3, 179:6, 181:8, 195:24, 189:24, 199:22, 199:15, 199:22, 219:15, 110:12, 137:26 132:8 232:1, 232:3, 232:6 232:1, 232:3, 232:6 232:1, 232:3, 232:7, 232:17, 233:13, 223:17, 233:13, 223:17, 233:13, 223:17, 233:13, 223:17, 233:13, 223:17, 233:13, 223:17, 233:13, 223:17, 233:14, 233:10 160:8 214:1 218:13 160:8 214:1 218:13 233:10	178:4, 179:1, 179:3, 179:6, 181:8, 195:24, 179:6, 181:8, 195:24, 185:22, 196:12, 186:15, 196:12, 186:15, 196:12, 186:15, 199:22, 219:15, 101:12, 137:26 132:8 132:8 232:1, 232:3, 232:6 180:12, 170:19, 224:23 210:27, 211:2, 211:6, 19:25, 20:2, 147:28, 175:29 232:1, 232:3, 232:6					
179:6, 181:8, 195:24, short-term [1]	179:6, 181:8, 195:24, short-term[1]					
195:27, 196:1, 56:22 170:19, 224:23 210:15, 210:20, 19:25, 20:2, 147:28, 19:22, 219:15, 110:12, 137:26 132:8 232:1, 232:3, 232:6, 232:1, 232:37, shortfall [2] - 98:2, 28:16, 42:19, 48:23, 109:21, 113:10 ship/shore [1] - 16:08 216:18 155:27, 156:10,	195:27, 196:14, 56:22 170:19, 224:23 210:15, 210:20, 19:25, 20:2, 147:28, 19:22, 219:15, 110:12, 137:26 132:8 232:1, 232:3, 232:6, 232:1, 132:1, 109:21, 113:10 156:16, 157:12, 162:5 Society [3] - 58:28, 100:28, 132:1, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 109:24, 109:23, 113:21, 109:24, 109:23, 113:21, 109:24, 109:23, 113:21, 109:24, 109:24, 109:24, 109:24, 109:24, 109:24, 109:24, 109:13, 109:13, 109:13, 109:13, 109:13, 109:23, 113:21, 113:22, 129:7, 146:18, 147:13, 155:4, 162:21, 214:1, 160:3				205:19, 210:2,	
196:12, 196:15, shortage [2] - Similar [2] - 31:22, 223:2, 223:4, 223:7, shortcut [1] - 218:13 similar [1] - 12:19, Site [3] - 101:1, 3 social [6] - 151:9, 152:27, 156:10, 223:24 98:26 48:29, 65:5, 65:6, 199:21, 113:10 156:16, 157:12, 162:5 160:8 214:1 106:3, 106:9, 106:16, 106:3, 106:9, 106:16, 106:3, 106:9, 106:16, 106:3, 106:9, 106:16, 106:14, 109:24, 125:2, 125:10 shipping [3] - 101:2, 30:27, 33:28, 132:4, 132:6, 142:25, 102:26, 102:29, showing [2] - 29:24, 102:26, 102:29, shows [3] - 15:12, 155:18, 160:21, 190:4, 200:9, 237:20, 33:28, 44:5, 66:7, 23:6, 223:7 190:19, 119:21 99:19, 119:21 99:19, 119:21 99:19, 119:21 99:19, 119:21 99:10, 127:14, 204:7, 203:95 100:28, 403:20, 40	196:12, 196:15, 196:15, 196:15, 199:22, 219:15, 110:12, 137:26 132:8 similar [2] - 31:22, 232:1, 232:3, 232:6 Snohvit [1] - 10:13 social [6] - 151:9, 152:27, 156:10, 156:16, 157:12, 162:5 Snohvit [1] - 10:13 social [6] - 151:9, 155:27, 156:10, 156:16, 157:12, 162:5 Snohvit [1] - 10:13 Social [6] - 151:9, 155:27, 156:10, 156:16, 157:12, 162:5 Snohvit [1] - 10:13 Social [6] - 151:9, 155:27, 156:10, 156:16, 157:12, 162:5 Snohvit [1] - 10:13 Social [6] - 151:9, 155:27, 156:10, 156:16, 157:12, 162:5 Society [3] - 58:28, 109:21, 113:10 Sites [18] - 105:2, 106:3, 106:9, 106:16, 156:16, 157:12, 162:5 Society [3] - 58:28, 106:3, 106:9, 106:16, 106:3, 106:9, 113:22, 129:7, 146:10, 146:16, 146:16,					
199:22, 219:15, 110:12, 137:26 132:8	199:22, 219:15, 10:12, 137:26 132:8			•		
223:2, 223:4, 223:7, shortcut [1] - 218:13 similar [11] - 12:19, 28:16, 42:19, 48:23, 48:29, 65:5, 65:6, 109:21, 113:10 155:27, 156:10, 156:16, 157:12, 162:5 shortfalls [2] - 26:25, 71:14, 81:28, 130:21, 214:1 106:3, 106:9, 106:16, 109:21, 113:10 156:16, 157:12, 162:5 Society [3] - 58:28, 100:24, 125:2, 125:10 show [8] - 21:4, 29:8, 109:24, 124:25, 109:23, 113:21, 108:11, 109:13, 109:24, 129:12 113:22, 129:7, 146:10, 146:16, 146:16,	223:2, 223:4, 223:7, 223:13, 223:17, 223:13, 223:17, 223:13, 223:17, 223:24 98:26 48:29, 65:5, 65:6, 48:29, 48:2		-		232:1, 232:3, 232:6	
223:13, 223:17,	223:13, 223:17,				SITE [1] - 97:15	
223:24 98:26 48:29, 65:5, 65:6, 109:21, 113:10 sites [18] - 105:2, 106:3, 106:9, 106:16, 157:12, 162:5 society [3] - 58:28, 100:24, 129:10 showing [2] - 29:24, 109:13, 113:10 solld.il, 113:10 solld [3] - 49:26, 102:29, 103:11, 124:23, 100:24, 122:6, 102:29, 103:11, 124:23, 124:21 shows [3] - 15:15, 155:18, 160:21, 190:4, 200:9, 237:21 ships [31] - 18:15, 130:25, 130:27, 130:25, 130:27, 130:27, 130:27, 130:27, 130:27, 130:27, 130:27, 130:25, 130:27, 130:27, 130:23, 130:25, 130:27, 130:25, 130:27, 130:25, 130:27, 130:11, 130:25, 130:27, 130:12, 1	223:24 98:26 48:29, 65:5, 65:6, 109:21, 113:10 sites [18] - 105:2, 106:3, 106:9, 106:16, 157:12, 162:5 Society [3] - 58:28, 100:24, 125:10 shipping [28] - 101:12, 30:27, 33:28, 102:26, 102:26, 102:29, 103:11, 124:23, 103:1				Site [3] - 101:1,	
ship/shore [1] - shortfalls [2] - 26:25, 71:14, 81:28, 130:21, sites [18] - 105:2, 35:16, 13:12; 162:3 127:19 160:8 214:1 106:3, 106:9, 106:16, 106:28, 125:11 30:28, 13:25, 108:11, 109:13, 100:28, 125:11 30:28, 13:21, 30:28, 13:21, 30:28, 13:21, 30:28, 13:21, 30:28, 13:21, 30:28, 125:11 30:28, 13:21, 30:28, 13:21, 30:28, 12:20, 70:18, 75:14, 81:7 30:16, 13:22, 129:7, 30:28, 125:11 30:28, 125:11 30:28, 125:11 30:28, 125:11 30:28, 125:11 30:28, 125:11 30:16, 19:23, 106:9, 106:16, 100:28, 125:11 30:28, 125:11 30:16, 19:24, 125:1 30:16, 19:24, 125:1 30:28, 125:11 30:16, 19:24, 125:1 30:28, 125:11 30:28, 125:11 30:28, 125:11 30:16, 19:24, 125:1 30:28, 125:11 30:28, 125:11 30:16, 19:24, 125:1 30:16, 19:25, 125:1 30:16, 19:24, 125:1 30:16, 19:24, 125:1 30:25, 130:27, 19:24 100:23, 106:16, 109:13, 109:23, 113:21, 134:25 100:23, 113:21, 134:25 100:28, 125:11 30:16, 19:25, 125:12 30:16, 19:25, 125:12 30:16, 19:25, 109:23, 113:21, 134:25 113:22, 129:7, 146:10, 146:16, 146:16, 146:10, 146:16, 146:10, 146:16, 146:12, 121:14 30:16, 19:25, 125:12 30:1	ship/shore [1] - shortfalls [2] - 26:25, 71:14, 81:28, 130:21, sites [18] - 105:2, 50:16, 106:3, 106:9, 106:16, 50:24, 106:3, 106:9, 106:16, 50:28, 25:28, 50:28, 100:28, 125:11 50:28, 100:28, 125:11 50:28, 100:28, 125:11 50:28, 100:28, 125:11 50:28, 100:28, 125:11 50:28, 100:28, 125:11 50:28, 100:28, 125:11 50:28, 100:24, 109:23, 113:21, 109:23, 113:21, 100:28, 125:11 50:28, 100:24, 109:23, 113:21, 109:23, 113:21, 100:28, 125:11 50:28, 100:24, 109:23, 113:21, 100:23, 113:21, 100:23, 113:21, 100:23, 113:21, 100:23, 113:21, 100:23, 113:21, 100:23, 113:21, 100:23, 113:21, 100:23, 113:21, 100:23, 113:22, 129:7, 146:10,					
127:19	127:19					
shipped [3] - 39:25, shortly [1] - 32:7 Similarly [2] - 108:11, 109:13, soft [1] - 129:12 218:1, 238:10 should(226:12, 228:2 109:23, 113:21, soft [1] - 129:12 Shipping [3] - INTERJECTION) [1] - similarly [1] - 154:8 113:22, 129:7, 146:10, 146:16, 20:12, 129:12 sold [5] - 6:5, 22:20, shipping [26] - show [8] - 21:4, 29:8, simple [7] - 32:12, 146:18, 147:13, 155:4, 162:21, 214:1 solely [1] - 7:26 SOLICITOR [1] - solely [1] - 7:26 SOLICITOR [1] - 2:11 solely [1] - 47:27 siting [4] - 109:24, 112:9, 201:5 solution [1] - 66:10 solution [1] - 66:10 solved [2] - 75:28, 2:11 solution [1] - 66:10 solved [2] - 75:28, 240:27 solved [2] - 75:28, 240:27 25:14, 132:2 situated [1] - 16:7 solving [1] - 242:27 solving [1] - 242:27 solving [1] - 242:27 solving [1] - 242:27 someone [2] - 87:12, 33:12 33:12 33:12 33:12 33:12 33:12 33:12 33:12 33:12 33:12 33:12 33:12 33:12 33:12 33:12 33:12 33:12 33:	shipped [3] - 39:25, shortly [1] - 32:7 Similarly [2] - 108:11, 109:13, 109:23, 113:21, 109:23, 113:21, 109:23, 113:21, 113:22, 129:7, 124:21, 125:2, 125:10 should(226:12, 228:2 109:23, 113:21, 13:22, 129:7, 146:10, 146:16, 146:1	107.10				• • • • • • • • • • • • • • • • • • • •
218:1, 238:10	218:1, 238:10					·
Shipping [3] - 124:21, 125:2, 125:10 INTERJECTION) [1] - 227:1 similarly [1] - 154:8 113:22, 129:7, 146:10, 146:16, 146:16, 146:10, 146:16, 146:10, 146:16, 146:18, 147:13, 146:18, 147:18, 146:18, 147:18, 146:18, 147:18, 146:18, 147:18, 146:18, 147:18, 146:18, 147:18, 146:18, 147:18, 146:18, 147:18, 146:18,	Shipping [3] - INTERJECTION) [1] - similarly [1] - 154:8 113:22, 129:7, sold [5] - 6:5, 22:20, 124:21, 125:2, 125:10 227:1 Simon [1] - 163:17 146:10, 146:16, 70:18, 75:14, 81:7 shipping [26] - show [8] - 21:4, 29:8, simple [7] - 32:12, 146:18, 147:13, sold [5] - 6:5, 22:20, 10:12, 30:27, 33:28, 132:4, 132:6, 142:25, 95:6, 122:27, 174:8, 155:4, 162:21, 214:1 SolLCITOR [1] - 34:9, 44:20, 45:8, 163:8, 167:24, 183:21 190:15, 221:7, 244:9 siting [4] - 109:24, solUcITOR [1] - 75:28, 100:24, 59:13 simply [7] - 36:23, sitting [2] - 59:22, solved [2] - 75:28, 102:26, 102:29, shown [5] - 101:13, 38:22, 83:3, 97:3, sitting [2] - 59:22, solved [2] - 75:28, 103:11, 124:23, 101:14, 106:3, 106:5, 173:3, 219:29, 241:24 83:20 situ [2] - 77:11, someone [2] - 87:12, 155:18, 160:21, 190:4, 200:9, 237:20, 15:16, 169:16 single [3] - 60:23, situated [1] - 16:7 situated [1] - 16:7 190:4, 200:9, 237:20, 130:25, 130:27, 130:25, 130:27, 130:25, 130:27, 132:1, 134:25 situation [8]	• • • • • • • • • • • • • • • • • • • •	•	• • •	109:23, 113:21,	
124:21, 125:20 227:1 227:1 Simon [1] - 163:17 146:10, 146:16, 146:18, 147:13, 155:4, 162:21, 214:1 Siting [1] - 7:26 SOLICITOR [1] - 7:26 Soliting [1] - 7:26 SOLICITOR [1] - 7:26 SOL	124:21, 125:21, 125:10 shipping [26] - 10:12, 30:27, 33:28, 34:9, 44:20, 45:8, 47:4, 53:18, 59:16, 75:28, 100:24, 102:26, 102:29, 103:11, 124:23, 103:11, 124:23, 103:11, 124:23, 103:11, 124:23, 103:11, 124:23, 103:11, 124:23, 103:11, 124:23, 103:11, 124:23, 103:11, 124:23, 103:11, 124:23, 103:11, 124:23, 103:11, 124:23, 105:16, 169:16 105:16, 169:16 105:16, 169:16 105:16, 169:16 105:17 106:17 107:18, 75:14, 81:7 106:11, 129:18 105:44, 132:10, 129:18 105:44, 132:6, 142:25, 105:4, 162:21, 214:1 105:44:9 105:44:10 105		•		113:22, 129:7,	
shipping [26] - show [8] - 21:4, 29:8, simple [7] - 32:12, 146:18, 147:13, 50ely [1] - 7:26 10:12, 30:27, 33:28, 132:4, 132:6, 142:25, 95:6, 122:27, 174:8, 155:4, 162:21, 214:1 50ely [1] - 7:26 34:9, 44:20, 45:8, 163:8, 167:24, 183:21 190:15, 221:7, 244:9 5iting [1] - 129:18 50LICITOR [1] - 2:11 47:4, 53:18, 59:16, showing [2] - 29:24, simplistic [1] - 47:27 siting [4] - 109:24, 112:9, 201:5 75:28, 100:24, 59:13 simply [7] - 36:23, sitting [2] - 59:22, solved [2] - 75:28, 103:11, 124:23, 101:14, 106:3, 106:5, 173:3, 219:29, 241:24 83:20 83:20 124:27, 126:15, 134:22 simulations [1] - 104:21 situ [2] - 77:11, 50lving [1] - 242:27 155:18, 160:21, shows [3] - 15:12, 126:5 situated [1] - 16:7 50lving [1] - 242:27 237:21 shut [5] - 126:29, 132:1, 134:25 situation [8] - 34:15, 46:19, 71:8, 76:2, 93:12 43:28, 44:5, 66:7, 233:6, 223:7 119:19, 119:21 94:10, 127:14, 204:7, 30:23 103:23 30:23; 119:19, 119:21 97:25	shipping [26] - show [8] - 21:4, 29:8, simple [7] - 32:12, 146:18, 147:13, 155:4, 162:21, 214:1 solely [1] - 7:26 34:9, 44:20, 45:8, 132:4, 132:6, 142:25, 95:6, 122:27, 174:8, 155:4, 162:21, 214:1 50LICITOR [1] - 2:11 47:4, 53:18, 59:16, showing [2] - 29:24, simplistic [1] - 47:27 siting [4] - 109:24, 112:9, 201:5 75:28, 100:24, 59:13 simply [7] - 36:23, sitting [2] - 59:22, solved [2] - 75:28, 102:26, 102:29, shown [5] - 101:13, 38:22, 83:3, 97:3, sitting [2] - 59:22, 83:20 124:27, 126:15, 134:22 simulations [1] - situ [2] - 77:11, someone [2] - 87:12, 190:4, 200:9, 237:20, 15:16, 169:16 single [3] - 60:23, situated [1] - 16:7 someone [2] - 87:12, 237:21 shut [5] - 126:29, 132:1, 134:25 situation [8] - 34:15, 46:19, 71:8, 76:2, 93:12 43:28, 44:5, 66:7, 223:6, 223:7 19:19, 119:21 94:10, 127:14, 204:7, 207:25 81:27, 100:2, 103:7, 23:6, 223:7 19:19, 119:21 207:25 94:10, 127:14, 204:7, 207:25		· ·			
10:12, 30:27, 33:28, 132:4, 132:6, 142:25, 95:6, 122:27, 174:8, 44:20, 45:8, 46:20, 45:8, 163:8, 167:24, 183:21 190:15, 221:7, 244:9 siting [1] - 129:18 siting [1] - 129:12 siting [1] - 129:12 siting [1] - 129:12 siting [1] - 129:12 siting [1] -	10:12, 30:27, 33:28, 132:4, 132:6, 142:25, 95:6, 122:27, 174:8, 47:4, 53:18, 59:16, 59:13					
34:9, 44:20, 45:8, 163:8, 167:24, 183:21 siting [1] - 129:18 siting [4] - 109:24, 12:9, 201:5 sitting [2] - 59:22, 12:7, 126:15, 134:22 simulations [1] - 12:11 solution [1] - 66:10 solved [2] - 75:28, 100:24, 12:27, 126:15, 134:22 simulations [1] - 12:11 solution [1] - 66:10 solved [2] - 75:28, 201:5 sitting [2] - 59:22, 241:24 simulations [1] - 12:11 solution [1] - 66:10 solved [2] - 75:28, 201:5 sitting [2] - 59:22, 241:24 simulations [1] - 12:11 solution [1] - 66:10 solved [2] - 75:28, 240:27 solving [1] - 242:27 solving [1] - 16:7 single [3] - 60:23, 13:11, 134:25 situated [1] - 16:7 situation [8] - 34:15, 43:28, 44:5, 66:7, 23:6, 223:7 19:19, 119:21 94:10, 127:14, 204:7, 207:28 somewhat [3] - 27:28	34:9, 44:20, 45:8, 163:8, 167:24, 183:21 190:15, 221:7, 244:9			• • • • • • • • • • • • • • • • • • • •		• • •
47:4, 53:18, 59:16, showing [2] - 29:24, simplistic [1] - 47:27 siting [4] - 109:24, solution [1] - 66:10 75:28, 100:24, 59:13 simply [7] - 36:23, sitting [2] - 59:22, solved [2] - 75:28, 102:26, 102:29, shown [5] - 101:13, 38:22, 83:3, 97:3, sitting [2] - 59:22, 240:27 103:11, 124:23, 101:14, 106:3, 106:5, 173:3, 219:29, 241:24 83:20 solving [1] - 242:27 124:27, 126:15, 134:22 simulations [1] - 104:21 solving [1] - 242:27 155:18, 160:21, shows [3] - 15:12, 126:5 situated [1] - 16:7 someone [2] - 87:12, 237:21 shut [5] - 126:29, 132:1, 134:25 situation [8] - 34:15, 46:19, 71:8, 76:2, 93:12 43:28, 44:5, 66:7, 233:6, 223:7 19:19, 119:21 94:10, 127:14, 204:7, 103:23 83:20 94:10, 127:14, 204:7, 30:12 somewhat [3] -	47:4, 53:18, 59:16, 75:28, 100:24, 59:13 showing [2] - 29:24, 102:26, 102:29, 103:11, 124:23, 101:14, 106:3, 106:5, 124:27, 126:15, 134:22 shows [3] - 15:12, 15:18, 160:21, 190:4, 200:9, 237:20, 237:21 ships [31] - 18:15, 43:28, 44:5, 66:7, 81:27, 100:2, 103:7,					
75:28, 100:24, 59:13 simply [7] - 36:23, 112:9, 201:5 solution [1] - 66:10 solved [2] - 75:28, 102:26, 102:29, shown [5] - 101:13, 38:22, 83:3, 97:3, 13:11, 124:23, 101:14, 106:3, 106:5, 173:3, 219:29, 241:24 simulations [1] - 16:7 simulations [1] - 16:5 simulations [1] - 16:7 simulation [1] - 16:7 simulations [75:28, 100:24, 59:13 simply [7] - 36:23, 112:9, 201:5 sitting [2] - 59:22, 103:11, 124:23, 101:14, 106:3, 106:5, 173:3, 219:29, 241:24 simulations [1] - 155:18, 160:21, 190:4, 200:9, 237:20, 237:21 ships [31] - 18:15, 130:25, 130:27, 23:28, 44:5, 66:7, 223:6, 223:7 sinply [7] - 36:23, 112:9, 201:5 sitting [2] - 59:22, 83:20 sitting [2] - 77:11, 104:21 situated [1] - 16:7 situated [1] - 16:7 situation [8] - 34:15, 46:19, 71:8, 76:2, 93:12 sometimes [4] - 43:5, 57:14, 63:20, 103:23 somewhat [3] - 81:27, 100:2, 103:7, 21:39, 49:10, 127:14, 204:7, 207:25			· · ·	siting [4] - 109:24,	
102:26, 102:29, shown [5] - 101:13, 38:22, 83:3, 97:3, 103:11, 124:23, 101:14, 106:3, 106:5, 173:3, 219:29, 241:24 situ [2] - 75:11, 104:21 situ [2] - 77:11, 104:21 someone [2] - 87:12, 104:21 situ [2] - 75:28, 240:27 solving [1] - 242:27 solving [1] - 242:27 solving [1] - 242:27 solving [1] - 16:7 situ [2] - 75:28, 240:27 solving [1] - 242:27 solving [1] - 16:7 solving [1] - 16:7 situ [2] - 75:28, 240:27 solving [1] - 242:27 solvi	102:26, 102:29, shown [5] - 101:13, 38:22, 83:3, 97:3, 103:11, 124:23, 101:14, 106:3, 106:5, 173:3, 219:29, 241:24 situ [2] - 77:11, 155:18, 160:21, 190:4, 200:9, 237:20, 237:21 shups [5] - 126:29, 132:1, 134:25 situ ation [8] - 34:15, 130:25, 130:27, 19:19, 119:21 shups [6] - 101:14, 204:7, 19:19, 119:21 shups [6] - 101:13, 38:22, 83:3, 97:3, 83:20 solved [2] - 75:28, 240:27 solving [1] - 242:27 solving [1] - 16:7 situated [1] - 16:7 situation [8] - 34:15, 46:19, 71:8, 76:2, 93:12 sometimes [4] - 43:5, 57:14, 63:20, 103:23 somewhat [3] - 81:27, 100:2, 103:7, 23:6, 223:7 119:19, 119:21 207:25		• • • •		<u> </u>	
103:11, 124:23, 101:14, 106:3, 106:5, 173:3, 219:29, 241:24 124:27, 126:15, 134:22 134:21, 126:5 18, 160:21, 190:4, 200:9, 237:20, 237:21	103:11, 124:23, 101:14, 106:3, 106:5, 173:3, 219:29, 241:24 situ [2] - 77:11, 104:21 someone [2] - 87:12, 109:4, 200:9, 237:20, 237:21 ships [31] - 18:15, 130:25, 130:27, 23:28, 44:5, 66:7, 223:6, 223:7 19:19, 119:21 109:29, 241:24 situ [2] - 77:11, 104:21 someone [2] - 87:12, 93:12 someone [2] - 87:12, 93:12 sometimes [4] - 43:5, 57:14, 63:20, 103:23 somewhat [3] - 81:27, 100:2, 103:7, 21:29, 241:24 situ [2] - 77:11, 104:21 someone [2] - 87:12, 93:12 sometimes [4] - 43:5, 57:14, 63:20, 103:23 somewhat [3] - 81:27, 100:2, 103:7, 21:29, 241:24 situ [2] - 77:11, 104:21 situ [2] - 77:11, 104:21 someone [2] - 87:12, 93:12 sometimes [4] - 43:5, 57:14, 63:20, 103:23 somewhat [3] - 81:27, 100:2, 103:7, 21:29, 241:24 situ [2] - 77:11, 104:21 someone [2] - 87:12, 93:12 sometimes [4] - 43:5, 57:14, 63:20, 103:23 somewhat [3] - 81:27, 100:2, 103:7, 21:29, 241:24 situ [2] - 77:11, 104:21 someone [2] - 87:12, 93:12 someone [2] - 87:12, 93			• • •		
124:27, 126:15, 134:22 simulations [1] - 10:14, 106.3, 106.5, 106	124:27, 126:15, 134:22 simulations [1] - 101:14, 106.3, 108.3, 108.5, 173.3, 219.29, 241.24 situ [2] - 77:11, 104:21 someone [2] - 87:12, 104:21 situated [1] - 16:7 situation [8] - 34:15, 130:25, 130:27, 19:19, 119:21 situation [8] - 34:15, 46:19, 71:8, 76:2, 103:23 somewhat [3] - 109:9, 19:19, 119:21 somewhat [3] - 109:9, 19:19, 119:21 somewhat [3] - 109:9, 103:23 somewhat [3] - 109:9, 103:23 somewhat [3] - 109:9, 103:24 somewhat [3] - 109:9, 103:25 somewhat [3] - 109:9, 103	, ,			• • • • • • • • • • • • • • • • • • • •	
155:18, 160:21, shows [3] - 15:12, 126:5 104:21 93:12 someone [2] - 87:12, 190:4, 200:9, 237:20, 237:21 shut [5] - 126:29, ships [31] - 18:15, 130:25, 130:27, 237:21 Signott [3] - 109:9, 42:8, 44:5, 66:7, 223:6, 223:7 119:19, 119:21 104:21 someone [2] - 87:12, 93:12 someone [2] - 87:12, 93:	155:18, 160:21,			·	situ [2] - 77:11,	
190:4, 200:9, 237:20, 15:16, 169:16 single [3] - 60:23, situated [1] - 16:7 sometimes [4] - 37:21 ships [31] - 18:15, 130:25, 130:27, Sinnott [3] - 109:9, 43:28, 44:5, 66:7, 223:6, 223:7 119:19, 119:21 sometimes [4] - 43:5, 57:14, 63:20, 103:23 somewhat [3] - 100:2, 403:7, 403:7, 4	190:4, 200:9, 237:20, 15:16, 169:16 single [3] - 60:23, situated [1] - 16:7 situation [8] - 34:15, ships [31] - 18:15, 130:25, 130:27, Sinnott [3] - 109:9, 43:28, 44:5, 66:7, 223:6, 223:7 19:19, 119:21 207:25 sometimes [4] - 43:5, 57:14, 63:20, 103:23 somewhat [3] - 81:27, 100:2, 103:7, sizuation [8] - 34:15, 46:19, 71:8, 76:2, 94:10, 127:14, 204:7, 207:25 somewhat [3] - 81:27, 100:2, 103:7, sizuation [8] - 34:15, 46:19, 71:8, 76:2, 94:10, 127:14, 204:7, 207:25					
237:21 shut [5] - 126:29, 132:1, 134:25 situation [8] - 34:15, 43:5, 57:14, 63:20, 43:28, 44:5, 66:7, 223:6, 223:7 119:19, 119:21 sometimes [4] - 43:5, 57:14, 63:20, 103:23 somewhat [3] -	237:21					
ships [31] - 18:15, 130:25, 130:27, Sinnott [3] - 109:9, 46:19, 71:8, 76:2, 43:5, 57:14, 63:20, 43:28, 44:5, 66:7, 223:6, 223:7 119:19, 119:21 94:10, 127:14, 204:7, 103:23 84:27, 100:2, 403:7 207:35 somewhat [3] -	ships [3] - 18:15, 130:25, 130:27, Sinnott [3] - 109:9, 46:19, 71:8, 76:2, 43:5, 57:14, 63:20, 43:28, 44:5, 66:7, 223:6, 223:7 119:19, 119:21 94:10, 127:14, 204:7, 103:23 81:27, 100:2, 103:7. size [3] - 109:9, 109:9, 119:21 207:25 207:25			• • • • • • • • • • • • • • • • • • • •		
43:28, 44:5, 66:7, 223:6, 223:7 119:19, 119:21 94:10, 127:14, 204:7, somewhat [3] -	43:28, 44:5, 66:7, 223:6, 223:7 119:11 94:10, 127:14, 204:7, 81:27, 100:2, 103:7 somewhat [3] -					
94.97 400.9 409.7 somewhat [3] -	81:27, 100:2, 103:7. cis pt. 494:05 Singly there (t) 207:25 somewhat [3] -	• • •				
01.27, 100.2, 100.7, cic o 121.26 Sinhiiharm M = 207.20	310 [2] - 101.20, 311 priditoriii [1] - 10:10, 26:4, 184:3			· ·		
316 [2] - 101.20, Simplianoliii [1] - 10:10, 26:4, 184:3			310 [2] - 101.20,	Jinphunoini [ii] -		10:10, 26:4, 184:3

168:21 somewhere [3] -Spain [3] - 11:27, spillage [1] - 46:3 start-up [2] - 10:14, 19:26, 73:24, 81:16 52:10, 75:25 spilled [3] - 224:22, 139:24 status [2] - 43:14, **Sorry** [22] - 48:17, Spanish [2] - 75:29, 224:23, 224:25 started [3] - 49:25, 43:17 50:8, 85:26, 85:28, 202:9, 204:6 spin [1] - 172:22 statute [1] - 50:22 statutory [2] -87:14, 87:20, 90:18, spatial [6] - 151:6, spirit [1] - 237:29 Starting [1] - 167:16 90:29, 95:27, 115:9, 151:14, 151:16, spoil [1] - 91:21 starting [4] - 107:22, 159:26, 232:25 116:16, 116:25, 152:22, 152:24, 157:3 193:25, 246:6, 246:19 steadily [1] - 14:27 spoken [2] - 180:3, 167:9, 168:17, Steam [1] - 124:16 Spatial [10] - 96:5, 244:29 State [3] - 63:7, 171:13, 175:23, 143:1, 151:3, 151:4, 108:1, 214:23 Stenography [4] sponsor [1] - 8:29 177:17, 181:16, 151:6, 151:25, 152:8, sponsored [2] state [10] - 24:2, 2:29, 2:30, 3:30, 3:32 186:9, 197:26, 153:6, 153:28, 165:7 24:4, 24:5, 24:19, steps [1] - 235:20 85:22, 86:1 227:27, 245:20 speakers [2] -49:5, 55:24, 97:26, sterilisation [1] sponsors [1] - 17:1 sorry [12] - 41:24, 165:19, 166:12 154:12, 160:2, 161:24 114:18 spot [1] - 99:4 78:9, 84:24, 123:24, speaking [4] - 59:25, Statement (6) - 6:25. sterilised [2] spread [1] - 223:18 146:23, 203:10, 61:17, 85:16, 242:16 105:3, 106:19, 115:20. 115:24 **spur** [5] - 92:27, 203:11, 208:1, special [5] - 132:26, 113:10, 142:15, 160:1 stick [1] - 71:29 92:28, 93:2, 94:6, 212:13, 237:6, 134:26, 138:13, statement [26] still [18] - 41:21, 240:10, 241:23 148:3, 166:5 18:3, 97:24, 98:7, 75:4, 119:28, 129:16, spurious [1] - 87:11 sort [3] - 83:4, 95:12, Special [2] - 108:12, 102:14, 106:26, 136:15, 172:7, 179:8, spurs [2] - 95:23 198:16 113:10, 113:11, 180:10, 181:5, 183:1, squanders [1] sorts [5] - 58:14, specialised [1] -114:21, 117:28, 185:16, 185:23, 198:11 73:20, 73:21, 73:25, 120:26, 122:16, 155:26 189:2, 189:11, Square [1] - 120:20 173:24 135:20, 138:9, 143:9, specially [1] - 134:2 squared [1] - 223:20 189:24, 190:8, 191:4, sound [2] - 27:15, 147:21, 160:1, 160:7, Specials [1] - 146:17 223:28 St [1] - 9:11 37:26 species [1] - 162:21 161:19, 166:19, stimulus [3] - 154:2, stability [1] - 17:26 source [34] - 24:15, 167:17, 186:10, specific [23] - 7:14, 154:5, 226:9 Stack [1] - 121:6 230:1, 244:19, 245:16 26:10, 28:19, 53:11, 16:24, 20:26, 26:6, Stiofán [1] - 163:17 staff [2] - 42:27, 53:28, 64:18, 85:18, Statements [1] -31:1, 45:21, 50:15, stipulate [1] - 22:19 42:29 95:5, 129:27, 135:3, 142:7 50:16, 54:5, 64:16, stir [2] - 51:15, 55:3 stage [25] - 49:27, 138:15, 153:7, statements [6] -78:18, 90:10, 90:12, stirring [2] - 55:13, 51:1. 52:21. 75:4. 158:10, 159:4, 25:11, 139:4, 172:2, 123:5, 130:25, 144:6, 55:15 92:11, 96:14, 105:1, 163:29, 186:27, 148:23, 160:7, 172:29, 239:11, stock [2] - 8:17, 115:3, 127:17, 154:9, 190:3, 190:29, 191:5, 243:23 162:25, 163:13, 64:29 173:1, 178:27, 179:9, 191:6, 191:10, 180:23, 221:17, States [22] - 5:8. Stock [1] - 8:18 187:11, 191:7, 191:21, 209:29, 245:22 9:19, 29:28, 30:3, stocks [1] - 20:11 191:10, 192:6, 192:7, 210:5, 210:7, 217:26, specifically [11] -34:6, 36:7, 37:15, stone [2] - 175:7, 203:25, 205:12, 217:27, 217:28, 17:8, 49:12, 52:7, 45:4, 47:23, 51:20, 205:29, 214:18, 175:8 218:11, 219:2, 51:23. 52:8. 52:9. 89:13, 125:24, stools [1] - 97:9 226:14, 228:3, 245:28 238:13, 241:11 63:6, 63:8, 69:7, 70:3, 131:14, 172:18, stop [2] - 70:11, stages [1] - 216:1 sourced [3] - 218:5, 79:14, 194:7, 215:5, 214:25, 222:9, 212:9 staggeringly [2] -219:12, 220:15 244:27, 245:5 239:6, 240:15 68:1, 193:2 stopping [1] - 219:12 sources [11] - 11:8, states [19] - 9:24, specification [2] stops [1] - 149:7 stalled [1] - 43:22 15:5, 53:25, 53:29, 16:24, 20:10, 28:25, 125:21, 133:28 stance [1] - 203:26 Storage [3] - 128:20, 54:9, 54:25, 82:16, 29:29, 35:20, 144:22, **specified** [1] - 54:27 194:28, 195:2 standard [5] - 67:19, 82:20, 136:11, 145:21, 148:15, specify [1] - 229:18 storage [70] - 18:17, 132:26, 220:24, 145:26, 186:29 speculate [1] - 58:24 148:20, 151:25, 220:26, 221:7 18:21, 19:1, 20:4, South [8] - 11:24, 152:8, 157:28, 158:9, speculation [1] standards [17] -20:6, 20:8, 20:12, 135:12, 135:15, 158:18, 162:2, 72:11 25:8, 25:17, 25:19, 31:21, 31:22, 31:25, 151:29, 153:16, 170:19, 209:6, 233:25 speculative [3] -59:1, 59:5, 59:7, 59:8, 25:24, 40:15, 54:8, 153:18, 165:4, 170:14 States' [1] - 174:8 58:13, 111:1, 130:3 55:5, 75:3, 75:17, 59:29, 60:11, 60:14, south [2] - 151:24, station [14] - 70:29, **speedy** [2] - 64:2, 75:21, 81:25, 110:1, 60:25, 113:2, 157:20, 79:16, 93:3, 93:6, 155:10 121:28, 123:8, 220:23, 220:29, **SOUTHERN** [1] - 1:6 93:7, 94:29, 119:17, spend [1] - 120:17 221:11, 222:4 126:24, 127:3, Southwest [5] -121:3, 121:7, 121:14, spending [1] - 158:4 standby [1] - 132:7 128:11, 128:17, 143:2, 225:4, 225:12, 130:25, 130:26, 239:8 spent [3] - 79:11, 128:25, 130:7, 133:8, **stands** [5] - 41:2, 225:28, 231:12 Station [1] - 103:3 79:13, 124:28 133:25, 134:29, 208:13, 231:2, southwest [2] stations [1] - 9:19 **spill** [7] - 170:17, 135:25, 138:10, 231:21, 232:22 154:1. 165:10 Statistics [3] -170:20, 170:22, 138:18, 139:26, start [5] - 10:14, space [1] - 101:22 167:24, 168:7, 169:25 222:25, 222:28, 141:5, 175:22, 139:24, 193:15, spaced [1] - 71:12 statistics [1] -223:1, 223:8 175:26, 176:7, 176:9, 242:29, 246:23

178:14, 182:1,	189:25, 217:19	35:29, 37:8, 109:9,	157:23	198:18, 209:8
182:11, 182:14,	Street [2] - 81:17,	161:22, 161:28,	subsequent [5] -	suitably [2] - 105:29,
188:22, 190:7, 191:1,	120:20	163:20	52:6, 88:22, 89:22,	113:4
191:8, 191:9, 191:17,	street [2] - 57:9,	SUBMISSION [10] -	129:3, 209:21	sulphur [2] - 17:15,
192:26, 193:7,	121:9	3:5, 3:8, 3:11, 3:12,	subsequently [2] -	33:18
193:23, 194:8,	strength [1] - 131:10	3:14, 38:6, 97:15,	101:19, 209:3	summarise [1] -
194:10, 194:14,	strengthen [1] -	113:14, 141:8, 165:14	subsidiary [4] - 7:18,	11:14
194:15, 194:18, 195:4, 195:15,	153:11	submission [70] -	8:4, 37:13, 93:23	summary [4] - 17:22,
215:13, 215:14,	strengthened [1] -	22:13, 24:1, 24:27,	substance [1] - 37:2	102:13, 106:17, 244:1
215:20, 243:13,	151:19	25:28, 26:1, 29:22, 31:28, 33:3, 35:3,	substantial [3] - 42:29, 128:11, 197:10	summer [8] - 4:29, 26:18, 26:19, 74:28,
244:21, 245:11,	strengthening [2] - 152:28, 157:10	35:20, 36:28, 37:2,	subtle [2] - 85:23,	
245:21, 245:23	strengths [1] - 152:2	37:21, 37:22, 40:26,	86:2	175:28, 185:24, 193:3, 193:24
store [6] - 175:26,	stretch [1] - 74:23	61:4, 63:29, 82:6,	succeed [2] - 18:1,	summertime [4] -
175:28, 184:28,	stretches [1] - 32:17	85:19, 87:26, 90:6,	231:1	74:5, 74:9, 193:6,
189:20, 191:3, 191:6	strict [1] - 180:29	90:11, 92:1, 107:10,	succeeded [1] -	193:10
stored [5] - 174:20,	strictly [1] - 131:25	109:12, 109:29,	236:5	Superintendent [1] -
175:10, 175:11,	strikes [1] - 135:27	110:1, 110:16,	succeeds [1] -	125:25
192:29, 215:15	strong [2] - 126:26,	110:17, 110:18,	140:20	superintendent [1] -
storing [2] - 174:7,	145:27	112:11, 112:12,	successful [5] - 9:1,	125:27
179:19	stronger [1] - 74:3	112:29, 113:2,	21:7, 21:26, 24:19,	superior [1] - 110:21
storm [2] - 111:22,	strongly [2] - 104:13,	116:24, 117:19,	137:18	Superior [1] - 220:25
136:25	154:15	124:7, 135:7, 135:22,	successfully [1] -	supervise [1] -
storms [1] - 111:14	structural [2] -	137:29, 138:25,	158:1	142:17
straight [4] - 93:11,	156:23, 216:5	139:6, 139:15,	suck [1] - 188:15	supervised [2] -
207:7, 220:17, 239:8	Structural [1] - 142:3	139:29, 140:8,	suffer [1] - 158:6	97:22, 142:6
straightforward [1] -	structure [7] - 51:19,	143:16, 161:23,	suffers [1] - 224:22	supplied [7] - 2:29,
21:25	110:2, 128:26,	161:29, 162:15,	sufficient [13] -	3:31, 26:21, 32:10,
strategic [36] - 6:21,	128:28, 135:26,	162:25, 163:11,	12:22, 13:14, 100:14,	67:3, 67:4, 179:6
20:7, 20:10, 25:19,	136:4, 151:20	163:22, 164:12,	101:21, 101:22,	supplier [4] - 20:13,
25:24, 57:20, 66:14,	Structures [1] -	164:24, 181:20,	103:6, 104:7, 108:15,	54:6, 67:16, 73:5
107:29, 108:3, 144:4,	128:19	184:4, 197:10,	133:2, 183:11,	suppliers [14] -
144:7, 144:27,	structures [2] -	201:29, 202:1, 202:4,	201:12, 201:18,	18:26, 20:23, 21:2,
148:22, 148:24,	130:23, 151:18	202:14, 205:28, 206:3, 208:27,	219:26	22:3, 28:9, 29:3, 29:4,
152:17, 154:7,	struggles [1] - 27:26	228:23, 231:18,	sufficiently [1] - 43:1	29:13, 29:20, 36:5,
157:22, 159:20,	stuck [2] - 46:17,	234:24, 235:11	suggest [11] - 18:18,	67:27, 68:2, 70:23,
159:22, 160:19,	46:24	submissions [19] -	25:15, 56:21, 59:20,	159:6
160:24, 161:1, 163:3, 164:4, 164:18, 174:9,	studied [1] - 101:12	7:14, 20:16, 25:14,	96:14, 96:15, 173:2,	supplies [26] - 11:21,
185:13, 185:18,	studies [4] - 11:12,	74:13, 92:7, 96:23,	178:20, 207:12,	11:29, 14:9, 14:17,
186:16, 190:28,	21:4, 101:13, 126:2	96:25, 109:6, 110:19,	211:29, 212:16	15:10, 16:16, 16:19,
191:7, 191:9, 191:24,	Study [1] - 112:2	110:24, 112:2, 120:9,	suggested [3] -	16:27, 18:1, 18:5,
194:17, 226:11, 228:1	study [11] - 25:17,	135:6, 141:17,	26:24, 29:22, 211:27	19:17, 21:26, 21:28,
Strategic [11] -	25:26, 26:23, 51:18,	161:21, 161:23,	suggesting [3] -	22:10, 22:11, 26:1, 29:2, 29:5, 39:23,
143:3, 159:14,	85:22, 86:1, 110:7,	198:23, 202:2, 232:26	60:21, 123:11, 123:25	54:2, 54:4, 67:1,
159:24, 232:4, 232:8,	110:20, 137:6,	submit [1] - 45:20	suggestion [4] - 32:21, 110:29, 203:16	67:14, 69:9, 111:19,
232:12, 232:14,	137:21, 242:21	submittal [8] - 32:22,	suggests [2] - 24:17,	132:11
233:7, 233:11,	subaqua [1] - 174:16	33:1, 33:20, 37:23,	135:23	Supplies [1] - 16:22
233:16, 234:15	subject [9] - 31:18,	56:16, 64:15, 64:17,	suitability [2] -	supply [126] - 8:11,
strategy [7] - 25:16,	35:14, 48:21, 65:19,	89:22	101:8, 104:22	13:13, 13:14, 13:24,
144:13, 149:18,	68:25, 70:9, 70:19, 109:3, 221:25	submittals [1] - 7:7	suitable [22] - 100:6,	13:28, 14:1, 14:20,
151:8, 154:24,	subjected [1] -	submitted [12] -	100:9, 104:17,	14:28, 15:5, 15:20,
155:20, 157:3	134:18	33:6, 45:18, 89:29,	104:29, 107:7,	17:4, 17:23, 17:26,
Strategy [12] - 5:19,	submarine [1] -	102:15, 139:2, 140:9,	107:16, 107:18,	19:9, 19:19, 20:19,
96:5, 143:1, 151:3,	133:21	140:14, 184:6,	109:17, 113:5,	20:24, 20:28, 21:3,
151:4, 151:6, 151:10,	submerged [7] -	184:18, 205:20,	132:29, 141:5, 144:5,	21:4, 21:12, 21:22,
151:25, 152:8, 153:6,	133:7, 133:15, 134:1,	213:8, 213:18	145:3, 147:10,	21:27, 24:14, 25:20,
153:28, 165:7	134:3, 134:6, 134:9,	submitters [1] -	148:12, 148:16,	26:10, 26:24, 27:1,
straying [1] - 203:1	192:12	34:28	148:23, 174:17,	27:5, 27:29, 28:6,
stream [3] - 34:14,	Submission [6] -	subprogramme [1] -	177:26, 197:2,	28:9, 28:11, 28:12,

28:23, 28:24, 29:6, 29:7, 32:17, 33:21, 35:5, 36:19, 37:6, 39:13, 39:27, 39:28, 40:3. 40:4. 53:28. 55:11, 56:27, 57:5, 57:13, 64:22, 66:7, 66:14, 66:15, 66:20, 66:26, 68:3, 68:15, 68:22, 71:22, 72:29, 73:3, 73:4, 73:13, 73:16, 73:18, 74:2, 74:6, 77:3, 91:11, 92:6, 92:9, 92:16, 93:14, 94:2, 94:3, 94:6, 98:5, 98:26, 108:7, 123:7, 129:28, 130:19, 130:29, 134:7, 135:3, 135:25, 138:15, 139:24, 145:23, 152:20, 153:1, 153:8, 153:9, 153:14, 154:5, 157:17, 157:18, 158:1, 158:2, 158:5, 158:9, 159:6, 159:7, 163:24, 165:12, 174:9, 185:13, 185:18, 185:20, 185:27, 186:1, 186:5, 186:17, 189:24, 189:26, 189:28, 191:17, 208:29, 226:9, 243:24, 244:22, 245:12 **Supply** [1] - 17:2 supplying [4] -82:27, 96:7, 129:21, 193:8 support [15] - 18:5, 25:13, 34:20, 87:9, 100:22, 104:21, 132:6, 160:4, 164:3, 164:17, 178:6, 197:13, 219:26, 244:15, 245:2 supported [6] -25:25, 126:2, 154:6, 154:15, 190:8, 226:10 supporting [1] -237:3 supports [3] - 165:1, 244:16, 245:4 suppose [4] -104:24, 114:17, 116:27, 186:3 supposed [3] -120:8, 187:23, 233:26 supposedly [2] -222:16, 236:24

supposing [1] -239:7 surely [1] - 178:9 Surely [2] - 47:21, 227:24 surface [2] - 128:29, 155:18 surge [1] - 12:18 surprised [1] - 173:6 surprisingly [1] -80:29 surveys [1] - 172:14 survive [1] - 58:7 suspect [1] - 104:24 suspended [1] -134:11 suspension [1] -73:27 Sustainability [1] -238:24 sustainability [1] -157:6 sustainable [12] -95:2, 143:8, 143:26, 144:14, 145:8, 153:9, 153:22, 156:15, 158:2, 158:19, 159:8, 164:20 Sustainable [1] -25:6 sustained [1] - 74:24 swell [3] - 102:3, 102:29, 103:19 Swilly [1] - 102:7 system [14] - 22:29, 57:8, 57:9, 86:25, 87:1, 87:18, 100:24, 130:12, 133:15,

Т

134:3, 134:16, 181:9,

systems [4] - 100:24,

207:19, 220:18

126:29, 132:23,

137:12

 table [4] - 83:20,
 121:3, 121:7, 121

 85:1, 237:23, 238:25
 121:11, 121:13,

 Taisce [1] - 78:24
 121:25, 121:27,

 Taisce's [1] - 82:6
 121:29, 142:29,

 tall [1] - 128:25
 149:10, 149:12,

 tank [15] - 18:21,
 149:18, 149:24,

 88:10, 88:13, 88:25,
 150:5, 165:2, 167

 89:18, 89:27, 89:29,
 167:28, 168:14,

 185:19, 223:14,
 168:25, 169:17,

 223:15, 223:23,
 170:4, 185:19, 19

 240:28, 241:3, 241:6
 209:8, 212:12

 tanker [11] - 6:8,
 209:8, 212:12

 target [1] - 46:23

23:22, 23:24, 30:12, 111:12, 138:3, 181:22, 183:13 Tanker [2] - 100:29, 125:12 tankers [11] - 9:18, 16:10, 16:11, 19:4, 31:26, 45:9, 45:12, 75:18, 80:11, 111:5 Tankers [1] - 125:2 tanks [52] - 19:1, 19:3, 19:6, 19:11, 25:22, 40:15, 40:21, 40:24, 52:15, 52:19, 52:20, 52:22, 54:8, 54:14, 54:15, 54:29, 55:5, 55:15, 75:3, 75:12, 75:17, 75:21, 81:25, 88:6, 88:15, 88:21, 88:24, 88:27, 89:1, 89:6, 89:9, 89:14, 111:15, 121:28, 126:25, 127:3, 128:25, 133:9, 139:26, 191:11, 215:13, 215:14, 215:15, 215:20, 215:28, 216:2, 216:3, 216:5, 216:10, 220:17, 223:15 Tanks [1] - 58:29 tap [1] - 93:14 tapped [3] - 14:23, 92:29, 136:12 tar [1] - 13:9 Tarbert [58] - 58:27, 59:4, 87:24, 87:28, 93:3, 93:5, 95:1, 104:11, 106:11, 106:22, 107:1, 108:10, 117:18, 117:25, 118:5, 119:1, 119:5, 119:8, 119:12, 119:17, 119:21, 120:2, 120:16, 120:17, 120:18, 121:3, 121:7, 121:8, 121:11, 121:13, 121:14, 121:19, 121:25, 121:27, 121:29, 142:29, 149:10, 149:12, 149:18, 149:24, 150:5, 165:2, 167:27, 167:28, 168:14, 168:25, 169:17, 169:23, 170:1, 170:2, 170:4, 185:19, 197:2, 209:8, 212:12

targets [4] - 51:16, 158:20, 242:19, 242:24 tariff [1] - 80:28 task [1] - 201:28 tax [2] - 7:21, 7:22 taxpayers' [1] -157:13 team [5] - 10:22, 43:5, 43:8, 160:25, 195:13 tech [1] - 239:25 Technical [2] -125:9. 138:9 technical [20] - 5:20, 6:22, 51:14, 51:18, 55:18, 83:10, 84:13, 89:11, 89:14, 111:2, 128:7, 130:5, 131:4, 134:28, 136:5, 136:15, 138:14, 140:21, 183:21, 244:1 technically [4] -50:26, 187:26, 188:2, 192:28 technique [1] - 77:9 technologies [3] -34:5, 178:5, 216:9 Technology [4] -124:18, 124:21, 125:3, 137:11 technology [19] -94:11, 133:7, 138:7, 141:5, 156:27, 184:29, 185:3, 185:6, 185:9, 192:1, 192:12, 192:21, 192:22, 216:18, 230:4, 239:7, 240:17, 241:19, 243:3 Teesside [3] - 64:27, 65:26, 220:15 television [1] -121:17 temperature [1] -194:5 temporary [2] -26:18, 73:26 ten [12] - 19:3, 40:16, 52:15, 52:24, 87:26, 88:3, 125:10, 139:20, 185:19, 185:27, 186:19, 223:8 tend [7] - 12:20, 71:12, 71:18, 74:25, 84:12, 88:25, 221:18 tends [1] - 194:2 tens [1] - 175:11

tenth [1] - 48:12

term [25] - 15:29,

17:24, 18:1, 19:18,

36:12, 54:2, 56:22, 59:17, 70:21, 72:2, 76:21, 108:24, 129:28, 135:3, 138:15, 144:9, 148:26, 157:6, 157:19, 189:26, 189:29 Terminal [3] - 58:29, 100:29, 125:12 terminal [151] - 6:7, 7:20, 8:1, 8:5, 10:8, 18:14, 18:18, 19:22, 19:29, 21:27, 21:29, 22:9. 23:23. 23:25. 24:2, 24:5, 24:6, 25:4, 28:15, 28:18, 28:20, 30:3, 30:16, 32:8, 32:14, 32:21, 36:1, 38:4, 42:16, 42:17, 42:23, 43:8, 43:26, 50:9, 50:15, 50:18, 50:19, 53:21, 55:23, 57:13, 57:18, 57:19, 57:26, 58:4, 58:8, 58:11, 58:15, 58:20, 59:3, 59:11, 61:17, 64:28, 65:28, 65:29, 66:4, 66:6, 66:20, 69:27, 75:27, 75:28, 75:29, 76:1, 80:28, 81:9, 81:10, 81:22, 92:6, 92:17, 94:17, 98:22, 99:8, 99:15, 103:14, 104:18, 105:8, 107:19, 107:27, 108:17, 109:3, 109:20, 109:24, 110:26, 111:18, 111:28, 111:29, 112:3, 112:5, 112:17, 118:1, 118:4, 119:5, 119:15, 125:6, 126:24, 127:20, 127:20, 127:23, 127:27, 128:10, 128:15, 128:23, 129:18, 130:2, 130:6, 130:12, 130:17, 130:21, 130:28, 131:2, 131:3, 131:9, 132:13, 134:6, 135:1, 135:12, 136:2, 138:12, 139:11, 140:1, 140:10, 142:25, 143:12, 143:19, 145:3, 147:4, 147:6, 148:1, 148:7, 149:2, 149:3, 150:23, 150:25, 154:17,

19:19, 21:26, 24:15,

140:18 156:17, 158:29, 4:18, 39:1, 114:6, 19:2, 40:15, 101:18, 131:28, 131:29, 159:4, 160:18, 117:21, 124:9, timing [4] - 7:13, 103:26, 146:11, 174:9 132:8, 132:15, 133:1, 141:5, 178:3, 179:1, 161:14, 164:26, 141:22, 165:27, 18:10, 18:24, 19:15 Totale [1] - 42:20 165:1, 184:16, 166:14, 246:27 totally [3] - 132:4, 179:7 Timor [1] - 15:1 theme [2] - 155:7, 186:28, 191:11, Tipperary [4] - 76:20, 173:14, 206:14 transfers [1] - 132:20 191:20, 199:6, 204:9, 155:8 Transforming [1] -152:7, 152:13, 154:26 touch [1] - 182:6 217:19, 217:21, themselves [3] titled [1] - 16:21 touching [1] - 203:16 156:12 218:10, 218:16, 57:28, 183:6, 213:12 translate [2] - 37:5, TO [1] - 246:27 tough [1] - 31:20 219:17 THEN [1] - 246:27 to...(tourist [1] - 91:18 131:13 **TERMINAL** [1] - 1:6 theoretically [1] -INTERJECTION [1] translated [1] - 79:1 touted [2] - 66:10, terminaling [1] -27.6 transmission [8] -Therefore [5] -99:22, 100:14, Tobago [2] - 6:10, towards [4] - 34:22, terminals [58] - 5:12, 127:17. 158:6. 100:17, 104:3, 104:4, 95:22, 115:17, 212:23 81:18 9:17, 16:28, 17:4, 177:13, 202:18, Today [4] - 12:2, Towards [1] - 5:19 104:5, 154:10, 226:15 17:27, 19:23, 19:25, transmitted [1] -207:12 21:6, 29:14, 126:18 towed [1] - 128:26 19:28, 19:29, 22:27, therefore [12] -103:20 today [21] - 5:24, 7:4, town [8] - 93:8, 23:3, 27:4, 29:27, 34:14, 44:13, 51:21, transport [9] - 27:9, 12:20, 15:16, 35:18, 149:28, 149:29, 30:22, 42:23, 43:3, 69:7, 71:6, 131:9, 27:10, 27:12, 36:19, 39:22, 42:17, 58:22, 151:18, 151:20, 50:11, 50:16, 50:20, 132:28, 148:7, 105:20, 152:4, 67:29, 94:12, 98:18, 167:28, 222:16 50:26, 60:7, 60:9, 166:26, 200:10, 101:28, 103:8, 152:18, 155:17, Town [2] - 231:16, 60:19, 65:17, 69:14, 235:10, 239:21 128:10, 131:2, 231:19 155:18 69:18, 69:25, 71:20, thereof [1] - 93:23 171:11, 171:19, town's [1] - 149:19 Transport [2] -75:26, 81:2, 110:27, thermal [2] - 36:16, 159:29, 160:10 175:21, 176:26, townland [1] -112:9, 127:13, 242:28 Transport's [1] -180:23, 182:18 168:22 127:14, 128:6, thinking [5] - 56:22, today's [3] - 13:11, 159:22 TOWNLANDS [1] -128:16, 129:10, 57:11, 66:12, 69:17, transportation [5] -37:27, 39:9 1:7 129:24, 131:6, 133:3, 219:3 together [5] - 43:8, 8:22, 16:9, 27:20, towns [3] - 106:28, 133:6, 135:8, 135:9, 34:3, 237:18 third [14] - 20:7, 43:9, 82:21, 91:6, 107:3, 157:4 135:16, 139:8, 22:3, 26:11, 36:13, transporting [3] -107:22 track [4] - 128:12, 139:26, 140:6, 53:22, 57:29, 58:12, 22:25, 22:26, 27:13 Tokyo [1] - 98:17 132:18, 152:3, 183:22 166:24, 166:29, 65:16, 65:23, 66:5, tolerate [1] - 131:11 transshipment [1] tracking [1] - 100:23 167:3, 167:6, 167:11, 93:25, 94:1, 240:9, 161:4 Tom [3] - 120:19, Trade [1] - 51:11 167:14, 170:14, 242:20 208:24, 211:18 travel [4] - 34:1, trade [3] - 12:10, 184:2, 201:5 Thomas [4] - 33:7, 91:25. 108:21. 237:22 tomorrow [19] -155:17, 160:13 terminated [1] -147:2, 163:6, 163:16 traverse [2] - 234:26, 35:18, 171:3, 171:4, traded [1] - 70:2 108:25 THOMAS [1] - 2:18 234:27 171:6, 199:12, trading [2] - 8:21, terms [17] - 19:17, thousand [1] - 184:9 203:28, 208:29, treat [1] - 207:9 26:19 24:20, 32:29, 43:2, three [14] - 15:8, 209:11, 214:4, treble [1] - 39:19 traditionally [1] -54:28, 69:9, 69:10, 38:13, 39:15, 93:12, 214:19, 224:11, Trenchard [1] -11:19 72:10, 72:12, 73:2. 103:24, 120:18, 224:15, 224:26, 106:11 traffic [4] - 53:4, 73:16, 73:17, 91:26, 134:5, 141:17, 229:27, 245:26, Trends [1] - 65:20 88:2, 88:19, 102:28 152:23, 169:27, 150:24, 165:19, 246:3, 246:17, tribute [1] - 174:29 Traffic [1] - 126:1 194:13, 194:16 166:12, 202:14, 246:21, 246:23 tried [3] - 79:8, training [1] - 156:27 terrestrial [1] - 209:4 211:15, 214:7 tonight [1] - 245:29 197:22, 207:6 Tralee [14] - 93:1, terrorism [1] - 46:20 throughout [4] tonne [3] - 236:14, Trinidad [4] - 6:10, 93:8, 93:14, 95:4, terrorist [2] - 46:19, 9:19, 107:25, 144:23, 236:25, 237:10 96:9, 118:6, 118:22, 14:25, 36:5, 81:18 51:16 145:24 tonnes [5] - 102:28, Troll [1] - 14:6 119:13, 119:23, terrorists [1] - 81:3 throughput [1] -103:26, 236:13, 152:2, 213:11, **trouble** [1] - 134:20 testimony [6] - 11:2, 74:10 236:24, 237:11 troubled [1] - 137:16 227:22, 228:12, 12:14, 12:15, 25:21, tidal 181 - 110:3. took [3] - 75:29, true [6] - 1:22, 52:9, 229:11 30:9. 43:16 110:9, 135:27, 136:2, 207:3. 208:9 69:25, 69:26, 120:27, TRALEE [1] - 1:17 testing [1] - 137:16 136:12, 137:1, 137:4, top [5] - 64:6, 90:5, 232:20 transactions [2] -Texas [2] - 10:2, 30:1 137:23 128:28, 213:29, trust [1] - 214:9 72:25, 72:26 text [1] - 153:26 tie [1] - 211:22 240:29 truth [2] - 31:8, 180:4 transcript [1] - 1:23 Thailand [1] - 10:1 tier [1] - 213:29 topic [1] - 38:10 try [11] - 11:14, Transcripts [2] that...(ties [1] - 214:12 topograph [1] -24:22, 26:3, 39:21, 2:28, 3:30 INTERJECTION [2] -TIM [1] - 2:18 105:15 44:28, 71:21, 71:25, transfer [16] - 95:1, 192:3, 228:14 topography [1] timeframe [1] - 99:16 98:21, 174:19, 126:23, 127:6, THE [18] - 1:6, 1:7, timely [1] - 64:1 105:14 131:11, 131:18, 235:29, 239:12 1:14, 1:17, 2:8, 4:1, timescale [1] total [7] - 15:10, trying [4] - 41:15, 131:22, 131:26,

107:26, 109:19 66:26, 123:4, 172:21 207:1, 207:18, 52:1, 52:14, 52:15, U TUESDAY [2] - 1:16, 207:28, 222:1, 222:5, unit [1] - 133:24 53:7, 54:21, 55:3, 58:11, 59:11, 60:6, 4:1 227:17, 231:28, United [21] - 5:8, **UK** [72] - 10:3, 12:4, tugs [3] - 100:23, 234:11, 234:13, 9:19, 29:28, 30:3, 61:29, 63:25, 65:29, 12:23, 13:4, 13:27, 67:9, 73:25, 74:25, 103:25, 132:7 243:18 34:6, 36:7, 37:15, 17:1, 21:7, 21:16, Under [2] - 22:16, 45:4, 47:23, 51:20, 78:26, 79:15, 80:3, turbine [4] - 110:9, 21:20, 21:21, 22:10, 93:23 80:22, 81:6, 81:15, 137:4, 137:14, 137:23 51:23, 52:8, 52:9, 22:15, 22:18, 22:24, 82:2, 82:17, 84:14, undergoing [1] -69:6, 70:3, 174:8, Turkey [1] - 12:5 22:27, 22:29, 23:3, 10:14 186:26, 194:7, 215:5, 85:28, 86:13, 87:3, turn [13] - 19:13, 23:6, 23:7, 23:10, 88:6, 88:20, 89:9, 20:15, 21:11, 21:16, Underground [1] -239:6, 240:15 23:26, 26:8, 26:11, 90:2, 90:4, 94:17, 193.23 unitised [1] - 160:13 24:22, 68:10, 72:14, 26:12, 26:16, 26:19, 95:22, 106:6, 118:10, underground [12] -Units [1] - 128:20 100:6, 128:1, 161:21, 26:20, 26:23, 26:24, 199:27, 223:28, 240:3 120:10, 121:4, 121:7, 91:24, 91:29, 92:13, University [4] - 5:5. 26:26, 27:1, 27:11, 185:3, 185:25, 192:1, 125:10, 139:24, turned [4] - 14:8, 98:11, 141:29, 239:5 27:12, 28:13, 28:23, 140:26, 167:26, 26:17, 102:22, 104:27 193:29, 194:14, Unless [3] - 115:29, 28:26, 29:7, 29:12, 167:29, 169:1, 239:9, 240:17, 241:4, Turning [1] - 80:26 208:3, 231:1 29:13, 29:15, 29:20, 177:11, 181:27, 241:6 turning [5] - 34:13, unless [3] - 24:20, 57:5, 57:8, 58:9, underlying [1] -182:28, 185:25, 100:6, 103:10, 240:4, 26:25, 232:22 58:15, 70:4, 70:14, 194:23, 201:28. Unlike [1] - 136:21 241:2 70:23, 71:8, 71:9, 211:6, 211:15, 214:1, turns [6] - 199:21, underpinned [1] unlikely [3] - 22:7, 71:11, 72:21, 74:27, 215:4, 215:6, 219:6, 200:10, 200:12, 16:1 22:21, 23:21 110:8, 124:15, 125:2, 223:9, 223:13, underpins [2] -200:16, 211:20, unload [5] - 23:22, 137:14, 137:21, 223:19, 230:7, 242:29 158:20, 164:1 214:13 23:24, 128:22, 189:3, 189:4, 190:5, **Up** [1] - 235:15 understood [1] twelve [5] - 50:10, 130:15, 140:29 190:9, 194:11, up' [1] - 93:15 50:21, 50:24, 96:13, 196:14 unloaded [3] - 53:13, 220:14, 220:29, upcoming [1] - 29:19 120:23 undertake [1] -64:28, 111:15 221:11, 221:16, updated [3] - 42:6, twice [1] - 197:11 205:22 unloading [6] -221:17, 221:18, 63:27, 63:28 two [44] - 5:12, undertaken [5] -100:10, 130:9, 221:23, 221:25 upgrade [1] - 161:6 63:17, 72:26, 126:2, 14:12, 19:1, 31:14, 132:23, 133:17, UK/Ireland [1] upgraded [1] - 108:7 40:15, 40:21, 40:24, 200:7, 230:22 134:12. 134:14 27:13 undertaking [4] upgrading [2] -46:17, 46:24, 51:22, unmatched [1] - 30:8 ultimate [4] - 4:24, 16:26, 108:9 52:14, 52:22, 54:9, 18:12, 37:26, 72:25, unprecedented [1] -5:10, 19:25, 32:5 202:17 upstream [4] - 9:3, 69:24, 86:6, 89:29, ultimately [2] -9:26, 10:6, 78:17 91:19, 91:25, 93:12, undertook [1] unpredictable [1] -45:16, 70:18 upwards [2] - 118:6, 107:3, 113:23, 24:21 136:18 unable [6] - 23:2, 128:15, 134:8, underwater [1] -169:15 unpredicted [1] -87:9, 130:28, 136:19, urban [2] - 144:24, 139:16, 139:21, 137:4 134:20 163:29, 163:29 150:21, 166:8, 170:5, 144:25 undeveloped [1] unproven [3] unacceptable [1] -170:13, 175:7, US [31] - 7:22, 7:24, 135:16 110:7, 111:16, 239:25 46:9 175:16, 195:20, 9:11, 9:20, 10:6, 11:9, unduly [1] - 22:4 unqualified [1] - 31:8 unaware [1] - 36:10 204:23, 212:19, unequivocal [1] -11:10, 13:5, 13:17, unrealistic [2] - 32:4, unbundle [2] - 57:29, 19:29, 21:20, 21:21, 214:20, 215:14, 25:12 67:14 58:11 26:20, 29:16, 30:18, 215:15. 215:20. Unfortunately [3] unreliability [1] unbundling [1] - 8:8 216:2, 216:3, 222:23, 30:21, 30:22, 31:20, 114:24, 233:2, 239:29 34:24 uncertainty [1] -223:3, 246:13 43:19, 46:22, 49:3, unfortunately [1] unrestricted [1] -Two [1] - 86:8 50:2, 51:29, 70:23, 84:27 104:20 unclear [1] - 37:11 86:14, 135:1, 138:12, tying [2] - 65:29, unfounded [1] unsafe [1] - 30:2 uncontrolled [1] -192:27, 193:20, 244:6 113:8 unsuitable 151 -240:12 type [19] - 8:28, 70:5, 193:21, 194:4 unhappiness [1] -101:20, 101:28, under [37] - 7:22. USA [5] - 12:3, 91:18, 94:10, 110:6, 232:2 102:2, 109:24, 132:4 14:29, 16:21, 20:23, 29:23, 85:20, 86:1, 129:3, 129:24, 131:7, unhappy [1] - 232:5 unsupported [1] -21:12, 46:2, 53:3, 124.19 133:12, 134:26, uniform [1] - 55:4 31:19 65:13, 67:3, 72:2, usage [4] - 94:28, 158:11, 173:10, uninterpreted [1] untested [1] - 239:25 86:8, 88:29, 103:7, 174:29, 177:26, 123:2, 178:18, 196:21 134:8 untrue [1] - 31:19 109:7, 129:25, 131:3, useful [2] - 77:2, 180:27, 195:24, Union [6] - 8:7, unusual [4] - 33:26, 131:24, 131:25, 195:27, 238:29 171:12 57:25, 62:12, 65:14, 55:17, 75:23, 118:20 133:2, 134:17, types [3] - 67:17, users [2] - 103:15, 66:26, 205:20 **up** [73] - 10:14, 139:13, 158:4, 146:13, 238:11 108:23 Union's [1] - 142:26 12:14, 13:24, 19:2, 170:26, 201:1, 201:3, typical [1] - 82:15 uses [7] - 105:22, unique [1] - 10:23 34:23, 36:15, 40:15, 202:13, 206:28,

uniquely [2] -

typically [1] - 133:13

144:9, 149:4, 150:1,

40:19, 41:1, 51:15,

175:21, 198:3, 199:17 uses' [1] - 148:26 utilising [1] - 156:5 utilities [1] - 57:27 utility [2] - 6:15, 86:3 ٧ vague [2] - 184:19, 243:22 valid [3] - 202:25, 209:24, 230:1 validity[1] - 207:13 valuable [1] - 171:18 value [6] - 15:28, 146:16, 146:22, 146:25, 147:13, 157:13 valves [4] - 222:14, 223:3, 223:4, 223:5 vaporisation [1] -19:12 variability [2] -18:16, 19:9 Variation [1] -147:15 variation [19] -147:17, 147:20, 148:10, 148:12, 148:19, 148:29, 161:24, 194:6, 196:24, 201:21, 206:13, 207:3, 207:10, 207:13, 208:3, 208:4, 211:3, 230:23, 234:5 varied [1] - 74:1 varies [1] - 53:25 variety [1] - 11:7 various [14] - 7:7, 11:11, 77:8, 97:7, 102:3, 103:28, 110:11, 137:25, 181:9. 201:17. 206:28, 207:29, 208:2, 236:4 vary [1] - 73:20 vast [5] - 14:22, 33:28, 239:22, 241:12, 241:15 Venezuela [1] -14:29

venture [4] - 5:28,

Venture [1] - 124:22

verifying [1] - 137:19

versa [2] - 21:22,

versed [1] - 178:25

5:29, 7:23, 9:14

vessel [3] - 100:23, 103:3, 130:8 Vessels [1] - 133:13 vessels [9] - 103:22, 103:23, 125:4, 132:6, 132:7, 132:8, 134:15, 140:29, 174:12 vested [1] - 242:22 vetting [2] - 125:7, Via [1] - 196:8 via [2] - 23:18, 190:9 viability [5] - 125:18, 129:27, 135:2, 136:5, 138:15 viable [3] - 22:6, 137:19, 192:22 vibes [1] - 121:16 vibration [1] - 53:5 Vice [2] - 101:3, 125:11 vice [3] - 6:12, 21:22, vicinity [2] - 182:16, 182:17 video [2] - 20:1, 184:8 videos [1] - 184:2 view [21] - 32:4, 56:28, 58:23, 60:4, 82:18, 82:19, 89:9, 93:5, 95:6, 95:18, 97:5, 112:27, 115:20, 140:24, 161:18, 187:24, 210:28, 213:18, 218:22, 221:9, 229:2 viewed [2] - 24:13, viewing [2] - 56:8, 57:12 viewpoint [3] -104:29, 127:23, 211:22 views [4] - 11:14, 78:3, 78:13, 162:20 village [6] - 108:10, 119:9, 121:12, 150:22, 151:20 villages [2] - 119:11, 120:15 violate [1] - 22:20 violation [2] - 66:27, 67:17 violent [1] - 174:13 Virgin [1] - 9:11 virtually [1] - 50:25

vision [1] - 143:11

147:1, 162:27, 163:7,

visual [6] - 53:4,

163:13. 230:19 volatile [1] - 235:25 voltage [2] - 104:3, 104:9 Volume [6] - 99:9, 105:2, 106:12, 109:22, 113:8, 126:11 volume [16] - 101:10, 126:14, 127:4, 128:9, 143:14, 144:21, 148:6, 149:7, 149:11, 151:5, 153:17, 156:19, 158:24, 159:25, 193:22 volumes [5] -100:15, 104:8, 175:29, 193:8, 238:8 voluntary [2] - 83:1, 118:13 voyages [2] - 30:10, 98:13 vu [1] - 224:2

W

wait [3] - 41:8, 214:3, 214:19 waiting [1] - 208:10 Wales [1] - 219:17 wall [2] - 90:4, 118:18 Wall [1] - 81:17 wants [1] - 85:8 warm [2] - 74:23, 82:2 warming [2] - 17:9, 33:5 warned [1] - 26:28 warning [1] - 29:18 WAS [3] - 39:1, 115:6, 246:27 Washington [4] -86:15, 86:16, 86:29, 87:16 waste [1] - 34:13 Water [1] - 108:6 water [49] - 99:4, 99:25, 99:26, 101:21, 102:2, 102:11, 102:28, 104:19, 105:14, 105:16, 106:26, 107:8, 107:12, 107:16, 108:5, 108:20, 109:18, 127:21, 128:29, 129:10, 130:11, 140:25, 145:4, 147:8, 148:17, 162:13, 164:28,

170:17, 192:14, 192:15, 192:19, 192:23, 197:2, 198:19, 199:2, 209:8, 209:13, 209:23, 209:27, 222:17, 222:18, 222:22, 222:25, 222:28, 223:1, 230:18, 241:5 Waterford [2] -101:24, 109:25 waters [8] - 103:2, 103:28, 127:1, 129:15, 130:18, 131:26, 132:1, 139:3 Waterway [1] -135:14 wave [9] - 103:18, 110:3, 130:15, 130:16, 135:26, 136:2, 136:12, 137:14, 137:15 Wave [1] - 136:18 wavelength [1] -95:25 ways [3] - 48:29, 69:25, 216:7 weather [17] - 4:27, 73:24, 74:22, 74:23, 74:24, 102:3, 103:24, 111:20, 131:8, 132:8, 132:13, 132:29, 136:23, 141:2, 174:13, 186:4, 193:26 Weaver's [4] - 30:18, 37:13, 44:16, 46:7 web [3] - 80:14, 84:21, 87:19 website [12] - 35:9, 35:11, 41:12, 41:16, 41:22, 41:23, 41:27, 41:28, 42:5, 42:7, 42:9. 160:23 WEDNESDAY [1] -246:27 Wednesday [1] -202:20 week [3] - 41:22, 118:9, 202:21 weekly [1] - 71:1 weeks [2] - 202:4, 207:3 weight [1] - 136:26 welcome [4] - 94:22, 97:10, 120:3, 121:20 welcomed [1] -161:14

weld [1] - 93:16

WERE [1] - 166:14

west [16] - 21:17,

102:5, 103:29, 106:6, 106:29, 108:19, 148:2, 149:27, 149:29, 151:12, 151:24, 152:6, 152:28, 238:7 West [17] - 10:2, 13:18, 34:11, 151:29, 152:13, 153:11, 153:16, 153:18, 154:22, 154:23, 155:22, 156:2, 162:1, 162:17, 163:10, 165:4, 165:5 western [2] - 9:11, 242:19 Whereas [1] - 69:20 which...(INTERJECTION) [1] -239:15 White [8] - 25:5, 56:17, 158:26, 163:28, 164:1, 164:7, 189:27, 244:15 whole [10] - 14:11, 16:24, 32:23, 39:28, 64:24, 94:23, 153:9, 172:16, 231:24 wholly [2] - 7:17, 37:13 whosoever [2] -197:20, 220:6 wide 151 - 13:19. 100:4, 103:8, 142:8, 237:23 widely [2] - 54:23, 71:12 widest [1] - 16:10 wild [1] - 70:20 wildlife [1] - 149:21 willing [7] - 21:3, 22:8, 51:18, 67:27, 83:29, 122:17, 239:14 willingness [1] -59:13 wind [18] - 34:22, 34:24, 36:14, 110:3, 110:10, 129:17, 135:27, 136:2, 136:18, 137:24, 240:2, 240:3, 240:26, 241:1, 241:5, 242:20, 242:24, 242:25 winding [1] - 10:4 windmills [9] -239:29, 240:1, 240:2, 240:4, 240:26, 241:1, 241:8, 243:1 winter [9] - 26:25,

74:8, 74:29, 132:10,

175:29, 193:4, 193:8, 193:28, 194:2 wintertime [1] - 74:4 wire [1] - 91:28 wish [5] - 38:24, 59:10, 76:6, 114:17, 114:21 wished [2] - 234:16, 234:17 wishes [3] - 114:15, 117:18, 136:7 withdraw [1] - 194:1 withdrawing [1] -193:15 withdrawn [1] -121:2 withstand [2] -136:19, 136:24 WITNESS [1] - 3:3 witness [9] - 113:25, 135:20, 138:9, 139:4, 211:26, 227:5, 227:12, 246:13 witnessed [1] - 11:4 WITNESSES [2] -3:15, 166:14 witnesses [3] -10:21, 201:17, 246:14 won [1] - 81:12 wonder [1] - 90:5 wonderful [2] - 4:27, 95:3 wondering [7] - 4:6, 50:9, 52:23, 60:13, 90:8, 96:29, 185:2 Woodside [3] -178:10. 178:26. 179:12 word [2] - 88:25, 231:15 worded [1] - 208:13 wording [6] - 198:13, 198:16, 208:15, 209:5, 229:3, 232:12 words [7] - 15:20, 24:23, 40:5, 93:25, 101:27, 103:13, 184:9 works [1] - 215:28 world [35] - 11:24, 15:12, 15:16, 15:19, 15:20, 19:23, 19:25, 30:4, 32:17, 37:27, 39:9, 39:22, 40:3, 48:26, 51:7, 51:21, 52:4, 60:20, 66:2, 68:9, 68:12, 69:14, 69:26, 69:28, 74:21, 75:24, 78:17, 128:10,

134:3, 136:1, 193:21,

236:24, 240:21,

241:23, 242:19 World [1] - 51:11 world's [8] - 14:22, 15:10, 15:13, 39:24, 39:27, 69:4, 80:10, 131:15 worldwide [8] -11:19, 17:20, 17:27, 40:7, 69:11, 125:3, 159:5, 186:29 worried [1] - 53:26 worse [1] - 118:10 worth [4] - 39:8, 39:20, 98:9, 184:8 write [1] - 67:12 writing [2] - 29:17, 202:23 written [7] - 2:30, 3:32, 73:4, 79:3, 85:19, 225:21, 226:25 www.poten.com[1] - 80:15

Υ

yard [1] - 130:26 year [20] - 9:7, 19:3, 31:3, 40:16, 41:8, 52:24, 64:26, 73:9, 87:26, 102:4, 111:19, 121:3, 139:20, 150:24, 151:8, 153:23, 156:13, 178:10, 184:14, 194:29 years [59] - 5:15, 5:27, 9:12, 11:5, 15:17, 15:19, 15:20, 29:10, 39:8, 39:20, 40:3, 40:4, 40:8, 49:26, 49:28, 50:6, 52:1, 52:15, 73:11, 75:26, 79:11, 79:21, 86:6, 88:3, 88:6, 88:8, 93:12, 107:9, 107:24, 118:2, 118:26, 119:10, 119:18, 120:19, 120:22, 124:27, 125:10, 134:5, 137:15, 137:17, 142:4, 150:13, 160:21, 161:8, 167:20, 168:22, 169:5, 169:6, 169:7, 169:9, 169:19, 175:12, 188:29, 199:8, 210:24, 226:29, 244:3 Yemen [2] - 15:2, 36:7

Yesterday [2] - 4:7, 219:14 yesterday [25] - 5:28, 11:1, 15:15, 18:9, 19:22, 20:1, 22:28, 39:7, 56:25, 92:22, 115:11, 116:2, 116:26, 120:9, 139:7, 166:20, 183:29, 184:15, 190:2, 190:20, 197:11, 198:29, 203:13, 206:2, 244:14 York [7] - 8:18, 9:16, 80:14, 140:11, 140:19, 184:7, 184:16 Youghal [1] - 101:25

yourself [1] - 76:12

Z

Zeebrugge [1] -135:10 zero [1] - 45:29 zone [20] - 101:7, 155:22, 155:23, 155:24, 199:5, 199:13, 200:1, 200:11, 200:12, 200:16, 208:28, 209:1, 211:28, 212:1, 212:9, 212:17, 212:23, 212:24, 214:6 Zone [1] - 230:17 zoned [10] - 107:14, 144:22, 144:25, 148:8, 164:15, 164:26, 206:12, 206:20, 211:3, 211:5 zones [10] - 114:19, 144:24, 155:21, 200:6, 212:19, 213:24, 213:26 213:28, 214:1, 222:15 zoning [22] - 105:18, 147:26, 148:4, 149:7, 198:1, 198:22, 199:14, 199:18, 205:19, 208:13, 208:15, 231:2, 231:4, 231:21, 231:22, 231:29, 232:3, 232:6,

€

232:22, 233:1, 234:6

€1.2 [1] - 157:23 **€184** [1] - 156:8 **€500** [2] - 8:2, 32:9

€53 [1] - 161:2 **€53.5** [1] - 160:20

É

Éireann [5] - 55:25, 55:27, 56:11, 157:25, 190:21