

PCA Case No. 2013-22

IN THE MATTER OF AN ARBITRATION UNDER CHAPTER
ELEVEN OF THE NORTH AMERICAN FREE TRADE AGREEMENT
AND THE 2010 UNCITRAL ARBITRATION RULES
BETWEEN:

WINDSTREAM ENERGY LLC

Claimant

- and -

GOVERNMENT OF CANADA

Respondent

TRANSCRIPT OF PROCEEDINGS
held at the offices of Arbitration Place,
333 Bay Street, Suite 900, Toronto, Ontario,
on Sunday, February 21, 2016 at 8:59 a.m.

FULL TRANSCRIPT
(including confidential information)

VOLUME 6 - REVISED MAY 12, 2016

CONDENSED TRANSCRIPT WITH INDEX

BEFORE:

Dr. Veijo Heiskanen (President)

Mr. R. Doak Bishop

Dr. Bernardo Cremades

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APPEARANCES:

John Terry for the Claimant
Myriam Seers
Nick Kennedy
Emily Sherkey

Also present:

Various parties Deloitte
Client representative, David Mars

Sylvie Tabet for the Respondent
Shane Spelliscy
Rodney Neufeld
Heather Squires
Susanna Kam
Jenna Wates
Valantina Amalraj
Melissa Perrault
Darian Parsons

Also present:

Various parties, Berkeley Research
Group, URS, Ministry of Citizenship, Immigration and
International Trade/Ministry of Economic
Development, Employment and Infrastructure, Ministry
of the Attorney General, Crown Law Office - Civil,
Ministry of Energy, Ministry of Natural Resources
and Forestry, Ministry of the Environment and
Climate Change, Independent Electricity System
Operator (Formerly the Ontario Power Authority)

Lisa Barrett Court Reporter

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1 Toronto, Ontario
2 --- Upon resuming on Sunday, February 21, 2016
3 at 8:59 a m.
4 PRESIDENT: Good morning, ladies and 08:59:49
5 gentlemen. We are at Day 6 of the hearing. 08:59:49
6 Any housekeeping issues to be raised? 08:59:52
7 Mr. Terry. 08:59:55
8 PROCEDURAL MATTERS: 08:59:56
9 MR. TERRY: Yes, just a scheduling and 08:59:57
10 witness matter. As we informed our friends, we will 08:59:59
11 no longer be calling for cross-examination, Sue Lo, 09:00:02
12 Susan Lo. She is set to be up on Tuesday, so she 09:00:08
13 can be taken off the list. 09:00:14
14 PRESIDENT: Any comment from the 09:00:15
15 Respondent? 09:00:16
16 MR. NEUFELD: First of all to thank 09:00:20
17 Mr. Terry for letting us know. 09:00:20
18 The other thing I'd like to say is 09:00:22
19 that we do note in the letter to the Tribunal that 09:00:25
20 we specifically reserve right, when a witness isn't 09:00:29
21 called, to consider whether we should and we're 09:00:32
22 still considering. We haven't made a decision one 09:00:34
23 way or another. But we'll have it put our heads 09:00:36
24 together and come to a decision shortly and we'll 09:00:38
25 advise the Tribunal as soon as we know whether we'd 09:00:40

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1 like to call her. 09:00:43
2 PRESIDENT: Okay. Thank you very 09:00:44
3 much. 09:00:44
4 That means on Tuesday we'll start with 09:00:49
5 Deloitte, Low, first thing in the morning. 09:00:53
6 MR. TERRY: Yes. 09:00:55
7 PRESIDENT: Very good. So, if there 09:00:55
8 are no other issues we'll start with OCC/COWI, and 09:00:57
9 I understand it will be Mr. Cooper. 09:01:03
10 Good morning, Mr. Cooper. 09:01:35
11 THE WITNESS: Good morning. 09:01:38
12 PRESIDENT: I appreciate you being 09:01:39
13 available on a Sunday morning. 09:01:41
14 THE WITNESS: I'm happy to help. 09:01:43
15 PRESIDENT: Thank you. To begin with, 09:01:44
16 can you state your full name for the record and then 09:01:45
17 read the expert declaration that you have in front 09:01:48
18 of you? 09:01:50
19 THE WITNESS: My name is Brent David 09:01:51
20 Cooper, and I solemnly declare upon my honour and 09:01:52
21 conscience that my evidence and my opinions will be 09:01:56
22 in accordance with my sincere belief. 09:01:59
23 AFFIRMED: BRENT DAVID COOPER 09:02:01
24 PRESIDENT: Thank you very much. You 09:02:02
25 have submitted on behalf of your company, one expert 09:02:04

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1 report in this arbitration which is on record, and 09:02:10
2 this is a report dated May 2014 09:02:16
3 I understand you will make a brief 09:02:19
4 presentation up to 20 minutes on your report, as the 09:02:20
5 parties have agreed 09:02:23
6 THE WITNESS: Yes, but we have 09:02:24
7 submitted two reports 09:02:25
8 PRESIDENT: Sorry, I missed that 09:02:26
9 Yes Do you have any corrections to make, either 09:02:28
10 one 09:02:38
11 THE WITNESS: No, sir 09:02:44
12 PRESIDENT: So you will make the 09:02:45
13 presentation 09:02:45
14 Will there be any questions from 09:02:46
15 counsel on direct? 09:02:48
16 MS SEERS: Yes, we will have one 09:02:50
17 question, Mr President 09:02:51
18 PRESIDENT: Okay Thank you very 09:02:55
19 much That will come after the -- that will come 09:02:55
20 after the presentation? 09:02:59
21 MS SEERS: That's correct 09:03:01
22 PRESIDENT: Mr Cooper, please go 09:03:01
23 ahead 09:03:02
24 PRESENTATION BY BRENT DAVID COOPER, COWI, NORTH 09:03:02
25 AMERICA 09:03:02

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1 THE WITNESS: All right. Thank you. 09:03:03
2 So as I said, my name is Brent Cooper. I'm 09:03:05
3 a project engineer with COWI North American and 09:03:08
4 obviously, we all know what we're here to talk 09:03:15
5 about. 09:03:16
6 Today in my presentation, I'd like to 09:03:18
7 give a bit of both personal and corporate background 09:03:20
8 to establish who I am and who COWI is, and then 09:03:22
9 we're going to talk about the semi-floating 09:03:25
10 gravity-based foundations that COWI has proposed for 09:03:28
11 Windstream, speaking just briefly about the 09:03:31
12 different types of foundations, why the 09:03:33
13 gravity-based foundation we've proposed is 09:03:36
14 technically suitable, why it's possible to 09:03:39
15 manufacture and fabricate these foundations in 09:03:41
16 Ontario, how it's possible to install them, discuss 09:03:43
17 some considerations to the schedule with which these 09:03:46
18 foundations are built and manufactured, and then 09:03:49
19 summarize by discussing how all of these different 09:03:51
20 considerations are an overall risk-mitigation 09:03:54
21 strategy. 09:03:59
22 So I am a project engineer with COWI 09:04:00
23 North America. I have seven years experience 09:04:02
24 working with offshore wind structures, overall nine 09:04:06
25 years experience with coastal waterfront and 09:04:10

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1 offshore structures, and I have a professional 09:04:13
2 engineer licence in the state of South Carolina. 09:04:16
3 Overall, a little bit of corporate 09:04:21
4 background on COWI. We are a large consulting 09:04:23
5 company, worldwide, headquartered in Copenhagen, 09:04:27
6 Denmark. We have approximately 6,200 employees and 09:04:31
7 we consult primarily in economics, and environmental 09:04:35
8 science. We are working in over 24 countries with 09:04:39
9 anywhere in the order of 13,000 projects ongoing at 09:04:42
10 any one time. 09:04:45
11 We have considerable experience in the 09:04:47
12 offshore Windstream industry. COWI was the actually 09:04:50
13 the designer of the very first offshore wind farm in 09:04:55
14 Vindeby, Denmark in 1991. 09:04:56
15 Since then, or I guess actually more 09:04:58
16 appropriately, as of the time that Windstream would 09:05:00
17 have been moving to construction, in approximately 09:05:03
18 2011, COWI held a 14 percent market share of all 09:05:07
19 commissioned wind farms operating offshore. 09:05:10
20 Some of our highlight projects, we -- 09:05:13
21 Thornton Bank, a large gravity-based foundation, six 09:05:16
22 turbines, 5-megawatt turbine. The Wikinger, 09:05:21
23 project, offshore Germany, ongoing now, 70 jackets, 09:05:25
24 5-megawatt turbines. The Merkur project, also 09:05:28
25 offshore Germany, this is a next generation, 09:05:32

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1 I should also say that we function in providing 09:06:51
2 infrastructure studies such as the ports available 09:06:54
3 to support the building of these projects. 09:06:57
4 All said, COWI's contributed to more 09:07:00
5 than 400 on and offshore wind projects in more than 09:07:06
6 50 countries. 09:07:10
7 So what did we do with Windstream? 09:07:11
8 We're a part of Windstream's integrated project 09:07:13
9 design and installation team. 09:07:16
10 Windstream, as the developer, brought 09:07:18
11 on SgurrEnergy. Both us and Weeks Marine were 09:07:20
12 brought on to help design the foundations and 09:07:25
13 offshore works construction installation plan for 09:07:27
14 Windstream. Specifically, COWI's scope was the 09:07:30
15 holistic foundation system design of the 09:07:34
16 gravity-based foundations, so it's not only that -- 09:07:36
17 the technical design of the foundation, but also the 09:07:38
18 fabrication facility, layout and design that would 09:07:40
19 be used to build the foundations, the manner in 09:07:43
20 which these large foundations are launched into the 09:07:47
21 water and how they're transported to site. And then 09:07:49
22 we also contribute to the schedule and how these -- 09:07:51
23 how and when these would be built. 09:07:55
24 So if we step back a little bit to 09:08:04
25 understand offshore wind foundations, when you 09:08:06

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1 extra-large monopile design, 80 turbines using the 09:05:35
2 new Siemens 6-megawatt turbine. We are the lead 09:05:41
3 foundation design engineer for the London Array. 09:05:44
4 There's 175 Siemens 3.6-megawatt turbines, and we've 09:05:47
5 also worked on the Nysted and Rodsand 2, 09:05:51
6 gravity-based foundations, which are another good 09:05:54
7 analogy for the Windstream project. 09:05:57
8 In addition to offshore wind 09:05:59
9 experience in Europe, we have considerable 09:06:01
10 experience with most of the offshore wind projects 09:06:03
11 proceeding in North America, including the lead 09:06:06
12 designer for LEEDco Phase I, in Lake Erie. 09:06:09
13 We're also the foundation design 09:06:13
14 energy for Trillium project in Lake Ontario. We're 09:06:15
15 an overall project manager and lead designer for all 09:06:18
16 aspects of Santee Cooper's offshore wind 09:06:22
17 demonstration project in South Carolina. We were 09:06:25
18 engineer for Winergy's Met Mass, Offshore New Jersey 09:06:27
19 before they were acquired by Deepwater Wind. 09:06:30
20 We also worked on the New York power 09:06:33
21 authority solicitation for offshore wind in Lake 09:06:37
22 Erie. And I don't need to read through the rest of 09:06:40
23 these, but these are another scattering of actual 09:06:42
24 projects moving towards development, technology 09:06:45
25 development projects, industry research. And 09:06:49

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1 choose an offshore wind foundation, there's a huge 09:08:09
2 number of considerations that go into the selection 09:08:11
3 choice. Not only the water depth and soil 09:08:15
4 conditions, but also the turbine size, the 09:08:15
5 meteorological and oceanic environment, wind, waves, 09:08:15
6 current, ice, all of these things feed in. But it's 09:08:19
7 not just the technical suitability of the 09:08:24
8 foundations; you also have to be able to build them. 09:08:25
9 So we considered the supply change such as the 09:08:28
10 available materials, equipment and labour that are 09:08:30
11 available to build these. 09:08:32
12 The main foundation types that we see, 09:08:33
13 monopile foundation, jacket and gravity-based. 09:08:36
14 I gave an example just a moment ago. There are some 09:08:39
15 newer innovative foundation types. These are just 09:08:42
16 scatterings, but -- and Windstream has chosen the 09:08:46
17 gravity-based foundation, which we're going to start 09:08:49
18 getting into a little bit now. 09:08:53
19 There are three different types of 09:08:54
20 gravity-based foundations. They're all based on 09:08:56
21 similar technology and similar premises. But they 09:08:59
22 are the cone type, the fully floating foundation and 09:09:03
23 the semi-floating foundation type. Most of the 09:09:06
24 European projects rely on the cone type of 09:09:09
25 foundation. They're brought out to site, sunk down 09:09:10

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1 and ballasted. They float and they're carried 09:09:14
2 either on a barge or by crane to site. The floating 09:09:16
3 foundations, as their name applies, are able to be 09:09:19
4 brought out completely floating on their own. 09:09:21
5 They're simply towed to the site and then ballasted 09:09:22
6 into place. 09:09:25
7 The semi-floating that we've proposed 09:09:26
8 for Windstream takes advantage of the best merits of 09:09:29
9 both types of foundations, the cone and the 09:09:30
10 floating, in such a way that we'll see it is 09:09:33
11 particularly suited to their installation for this 09:09:35
12 project in the Great Lakes. 09:09:37
13 So a typical installation process, is, 09:09:39
14 these foundations are fabricated on-shore, while 09:09:42
15 concurrently the seabed, or in this case, the lake 09:09:46
16 floor is prepared, and that preparation may include 09:09:49
17 excavation of some surficial sediments in the 09:09:51
18 placement of a gravel bed or gravel mat. 09:09:54
19 Once they're done, the foundations are 09:09:58
20 transported to the site, which we'll also talk about 09:10:00
21 the specific mechanism and why the semi-floating are 09:10:02
22 particularly applicable. They are lowered into 09:10:05
23 position on top of that gravel map. They're 09:10:09
24 ballasted into place, so they're initially filled 09:10:11
25 with water. And then once they're fully in place, 09:10:13

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1 oil and gas platform in water depths far exceeding 09:11:23
2 what we expect for this project. 09:11:28
3 So, we were asked to provide a 09:11:31
4 scenario in which case these foundations could be 09:11:33
5 built. We identified a number of sites on the 09:11:36
6 Ontario side of Lake Ontario, either six or seven of 09:11:39
7 them possible, that seemed to have a large amount of 09:11:42
8 land available. As our representative site, we 09:11:45
9 chose the St. Mary's cement plant because it had 09:11:49
10 some piers in place and was located immediately next 09:11:53
11 to a cement facility. So what this does is this 09:11:56
12 allows us very quick and easy access to local 09:11:59
13 materials, labour and equipment. 09:12:04
14 This is technology that's well known 09:12:06
15 in the area, all of which helps to mitigate the risk 09:12:07
16 of trying to obtain materials from far away. It 09:12:11
17 enables local control and also facilitates local 09:12:14
18 economic development. 09:12:18
19 So, as to the specific design of the 09:12:23
20 fabrication yard, we've done a number these designs. 09:12:26
21 The premise behind all of these designs is the same. 09:12:30
22 The -- let me see if the laser pointer works. 09:12:33
23 My laser pointer's not working, but in 09:12:41
24 general, the foundation fabrication begins furthest 09:12:43
25 from the water, the on-shore positions, where the 09:12:47

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1 they're filled with sand. And once they become 09:10:16
2 stable in their installed position, the cable and 09:10:20
3 turbine are installed beyond that. 09:10:22
4 So now we get into why the 09:10:24
5 semi-floating gravity-based foundation is 09:10:26
6 particularly suitable for Windstream. Considering 09:10:28
7 the conditions that were reported to us, in the 09:10:30
8 meteorological and oceanic reports and some of the 09:10:33
9 geophysical work that was done at the time that we 09:10:36
10 were engaged, there is minimal sea floor preparation 09:10:38
11 required with shallow surficial sediments and 09:10:43
12 shallow bedrock making this particularly suitable. 09:10:46
13 The large mass of the concrete foundations as 09:10:49
14 compared to steel foundations are particularly able 09:10:51
15 to resist the ice loads found in Lake Ontario, with 09:10:54
16 little adaptation necessary to the base design. 09:10:58
17 This foundation is readily adaptable 09:11:00
18 to changes in water depth by varying different 09:11:03
19 elements of the design. And it is a proven 09:11:05
20 technology, not only in offshore wind as we've seen 09:11:08
21 in Europe, but this is a float in place and floating 09:11:10
22 large concrete case on technology. It is a 09:11:13
23 technology that we've seen in Canada in the 09:11:17
24 Confederation Federation bridge Caissons. We've 09:11:18
25 also seen it in oil and gas, such as the Hybernia 09:11:22

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1 jetty here is the widest. The foundations are built 09:12:50
2 from the bottom up and as construction proceeds, 09:12:52
3 they're slowly skidded along these rails. In this 09:12:54
4 case, they're concrete rails with a plastic surface 09:12:57
5 to reduce the friction. But they proceed along 09:13:00
6 these rails in progressive stages of development 09:13:02
7 such that as the foundations are completed, they're 09:13:05
8 at the most offshore position, ready to be lowered 09:13:07
9 into the water by the elevator platform. This 09:13:11
10 particular scenario we're seeing is based on having 09:13:13
11 25 foundations in concurrent fabrication and 09:13:16
12 staging. 09:13:19
13 We're showing an acre -- we're showing 09:13:19
14 an area contained within the yellow boundary of 09:13:22
15 approximately 26. The actual fabrications that are 09:13:25
16 being used in this particular circumstance is 15 09:13:31
17 hectares. 09:13:33
18 This is a readily scalable design. To 09:13:35
19 increase production, it's easy to add either 09:13:38
20 additional positions along the line or add 09:13:41
21 additional fabrication lines. And if we go back one 09:13:44
22 slide, we can see that beyond this yellow area there 09:13:46
23 appears to be a lot of additional area to the 09:13:49
24 outside of that yellow highlight, if we need to 09:13:51
25 expand the site. 09:13:54

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1 Specifically with regard to the 09:14:01
2 elevator system, there are a number of mechanisms to 09:14:02
3 place these foundation into the water. We have 09:14:04
4 proposed an elevator system for Windstream. This is 09:14:07
5 a technology that's been around for about 70 years. 09:14:09
6 There are approximately 240 to 250 installations 09:14:13
7 throughout the world, and some have been able to 09:14:17
8 achieve as many as 500 launchings per year using the 09:14:21
9 system. 09:14:27
10 We have proposed approximately 18 09:14:29
11 months for the elevator system, including 16 months 09:14:33
12 of -- for procurement and approximately two months 09:14:35
13 of installation. This is based on both this 09:14:40
14 project, as well as our previous experience with 09:14:44
15 Weeks Marine. 09:14:47
16 You know, it's been suggested that six 09:14:48
17 months for installation is more appropriate, but we 09:14:50
18 think that based on the site already being prepared, 09:14:52
19 the piers, in place, that two months is more than 09:14:55
20 ample time to install the wenchers and elevator 09:15:00
21 platform. 09:15:03
22 So here we see a view of the 09:15:06
23 semi-floating GBF in its transport position. Once 09:15:08
24 the GBFs are placed into the water, these barges are 09:15:14
25 placed around the buoyancy chambers. Wenchers or 09:15:18

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1 contractor, if they were doing this again and no 09:16:39
2 changes to the technology, they would estimate 120 09:16:41
3 days per turbine foundation would be a reasonable 09:16:43
4 estimate. 09:16:46
5 We've proposed 120 days per 09:16:48
6 foundation, as the schedule for Windstream. 09:16:51
7 However, we think that's a conservative estimate 09:16:55
8 because we simply -- we have a learning curve with 09:16:58
9 building 130 turbines. We expect, if nothing else, 09:17:01
10 experience with the fabrication, that alone would 09:17:04
11 bring down the construction time. 09:17:07
12 We also have not fully quantified the 09:17:08
13 additional benefits of using the manufacturing 09:17:10
14 assembly line, some additional slip forming which 09:17:12
15 was not used in, the skidding system to facilitate 09:17:17
16 moving the foundations around the site. Our 09:17:22
17 schedule estimate is based on the 25-metre 09:17:24
18 foundation, which is the images that we've seen 09:17:27
19 earlier today. 09:17:30
20 Based on the five to, I believe, 09:17:31
21 42 metres proposed, 32 metres proposed for 09:17:34
22 Windstream, this is one of the larger foundations. 09:17:39
23 So a lot of the foundations are smaller, should be 09:17:43
24 able to be constructed more readily. 09:17:46
25 The other thing that we'd like to 09:17:48

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1 hydraulic jacks proceed down to connection points 09:15:22
2 and the foundation's pulled up tight to the bottom 09:15:26
3 of these barges, up into its fully floating 09:15:29
4 position. 09:15:33
5 At this point, these barges are then 09:15:33
6 towed out to the site using two tugboats, one in the 09:15:34
7 lead, one in back to take the strain and keep 09:15:38
8 control of the foundation wall towing. And the 09:15:42
9 benefit of this system is that we don't require 09:15:45
10 a lot of the more complicated expensive vessels that 09:15:47
11 are being used in Europe. This is a more benign 09:15:51
12 environment. The wave conditions are lower, so 09:15:54
13 we're able to use barges that are fabricated here in 09:15:56
14 Ontario to facilitate this and both reduces the 09:15:59
15 schedule and cost risks associated with other types 09:16:04
16 of installation. 09:16:07
17 So as far as the schedule goes, COWI 09:16:08
18 was the lead design engineer on the project. We 09:16:14
19 worked very collaboratively with the contractor, who 09:16:19
20 was Per Aarsleff on that project. 09:16:22
21 Those six foundations, they were a 09:16:25
22 technology demonstration project, more than they 09:16:26
23 were concerned about costs, but those foundations 09:16:30
24 were built on average in 135 days. Both from our 09:16:32
25 experience as well as interviews with the 09:16:37

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1 point out is using this fabrication scheme, the 09:17:49
2 foundation's been moved along these rails as 09:17:52
3 progressive stages of our construction are ready. 09:17:55
4 Along with the foundations moving, the 09:17:58
5 construction crews and equipment are also mobile. 09:18:00
6 So are you're able to stay with the foundation and 09:18:02
7 give it the attention that it needs. You also have 09:18:06
8 the resources in place, already to provide the 09:18:08
9 different types of fabrication, whether it be tying 09:18:11
10 rebar, placing formwork, pouring concrete. These 09:18:13
11 are known in place by the contractor along that 09:18:18
12 line. And so that just helps ensure that the 09:18:20
13 concrete foundations are produced as they should be. 09:18:25
14 So, in summary, all of this 09:18:29
15 foundation, the entire foundation system design is 09:18:31
16 designed to mitigate risk. We've established the 09:18:33
17 fabrication areas, as well as our indicative area. 09:18:37
18 There are a number of areas readily available in 09:18:40
19 Ontario. 09:18:43
20 The materials and labour, concrete 09:18:43
21 foundation technology is very common. You are able 09:18:45
22 to build these foundations all year round. We 09:18:49
23 believe we have a realistic, if not conservative 09:18:52
24 fabrication schedule, and we're using local tugs and 09:18:55
25 barges, reducing our offshore equipment risk. 09:19:00

1 So thank you for giving me this 09:19:03
2 opportunity to present this information. 09:19:04
3 PRESIDENT: Thank you very much, 09:19:07
4 Mr. Cooper. Ms. Seers. 09:19:07
5 EXAMINATION IN-CHIEF BY MS. SEERS: 09:19:14
6 Q. Good morning, Mr. Cooper. 09:19:17
7 A. Good morning. 09:19:19
8 Q. In response to concerns expressed 09:19:19
9 by the Government of Canada in their opening 09:19:21
10 statement about the question answered by experts 09:19:22
11 retained by Windstream, would you please confirm 09:19:26
12 whether, absent the moratorium, in your opinion, it 09:19:29
13 is more likely than not that the foundations would 09:19:32
14 have been built and installed within the timelines 09:19:34
15 set out in your reports on the project schedule? 09:19:37
16 A. We see no fatal flaws given this 09:19:40
17 proven technology. We believe it's more likely than 09:19:43
18 not that Windstream could have achieved these. 09:19:45
19 MS. SEERS: Thank you very much? 09:19:50
20 PRESIDENT: Thank you, Ms. Seers. 09:19:50
21 Cross-examination, Ms. Squires? 09:19:52
22 CROSS-EXAMINATION BY MS. SQUIRES: 09:19:54
23 Q. Good morning, Mr. Cooper. As you 09:20:47
24 know, my name is Heather Squires and I'm counsel for 09:20:47
25 the Government of Canada in these proceedings. 09:20:50

1 Tab 2. So when I refer to your first page of your 09:21:48
2 first report as page 51, we can all know why it's at 09:21:50
3 51 for the first page. 09:21:55
4 A. Very good. Thank you. 09:21:57
5 Q. All right. Now, I want to start 09:21:58
6 by looking at your second report at Tab 2 in your 09:22:00
7 binder. As I mentioned, that's labeled page 51. 09:22:05
8 And I want to look at the background section. 09:22:09
9 You note there that you were retained 09:22:12
10 by Windstream, via SgurrEnergy to provide consulting 09:22:14
11 services for the design and fabrication of GBFs for 09:22:18
12 the Wolfe Island Shoals wind farm? 09:22:22
13 Do you see that? 09:22:25
14 A. Yes, I do. 09:22:25
15 Q. And you were not retained until 09:22:26
16 2014; correct? 09:22:28
17 A. That's correct. 09:22:30
18 Q. So, in fact, you were retained by 09:22:30
19 SgurrEnergy to provide a report for the purposes of 09:22:31
20 this arbitration, but not to actually work on 09:22:34
21 project, correct? 09:22:37
22 A. That's correct. 09:22:38
23 Q. Now, the purpose of your report 09:22:43
24 was to discuss the selection of the appropriate 09:22:44
25 foundations for the project as well as the 09:22:46

1 I'm going to ask you a few questions 09:20:53
2 this morning about the two reports that you filed in 09:20:54
3 the arbitration, so I can better understand the 09:20:56
4 conclusions that you've made. If you don't 09:20:58
5 understand the questions that I've asked, let me 09:21:00
6 know, I'll rephrase it or try and ask it again so 09:21:01
7 that you do understand. And in that regard, if the 09:21:04
8 question is a "yes" or "no" question, if you could 09:21:07
9 start with that first and provide whatever context 09:21:10
10 you'd like to provide, go ahead, but if you could 09:21:13
11 give a "yes" or "no" just so the record's clear. 09:21:15
12 That would be great. 09:21:15
13 In front of you you've been given 09:21:17
14 quite a large binder. There are numerous tabs in 09:21:18
15 there. Throughout the course of my question, I'll 09:21:21
16 be referring you to specific tab numbers there as we 09:21:22
17 go, so when I say Tab 1, or 3, that's what I'm 09:21:25
18 referring to is the binder there in front of you. 09:21:29
19 I should also note for the benefit of 09:21:31
20 everybody, because your second report was embedded 09:21:33
21 into the SgurrEnergy report, we've actually exerted 09:21:37
22 it into your binder to make it easier for everybody 09:21:37
23 to look at so you don't have to be flipping through 09:21:37
24 both reports at the one time. So your first report 09:21:37
25 is found at Tab 1 and your second report is found at 09:21:45

1 manufacturing of the foundations and to feed into 09:22:48
2 the overall project schedule; correct? 09:22:50
3 A. No, I'm sorry, that's incorrect. 09:22:52
4 Windstream had already made the decision to go with 09:22:54
5 the concrete gravity-based foundation. We were able 09:22:56
6 to confirm that, as a viable and likely choice, but 09:23:00
7 that decision had already been made. 09:23:05
8 Beyond that, the rest of your question 09:23:06
9 is correct. We were brought on to advise as to the 09:23:08
10 design and fabrication. 09:23:11
11 Q. Okay. So you were told, "Let's go 09:23:13
12 with gravity-based foundations," and you were then 09:23:15
13 to discuss how that would be implemented? 09:23:18
14 A. Correct. 09:23:22
15 Q. Okay. Now. Tab 2 in your first 09:23:22
16 report, you refer to it as a foundation conceptual 09:23:23
17 design. 09:23:27
18 A. That's correct. 09:23:27
19 Q. And conceptual designs like this, 09:23:28
20 they're not detailed designs, correct? They're not 09:23:31
21 appropriate for construction purposes. You would 09:23:35
22 have to do further refinements before you actually 09:23:36
23 have the exact foundation you're going to use; 09:23:39
24 correct? 09:23:41
25 A. That's correct. 09:23:42

1 Q. Now, you mentioned in your 09:23:43
2 presentation that your company was involved in the 09:23:44
3 design of the foundations for the Phase I project; 09:23:45
4 correct? 09:23:51
5 A. That's one of the projects, yeah. 09:23:51
6 We've worked on a number of gravity-based 09:23:52
7 foundations projects. 09:23:54
8 Q. Right. 09:23:56
9 A. Yes. 09:23:56
10 Q. But that is one of them. 09:23:56
11 Now, as both SgurrEnergy and URS note 09:23:58
12 in their reports, the project changed from 09:23:59
13 gravity-based foundation to another type of 09:24:01
14 foundation after Phase I; correct? 09:24:02
15 A. Yeah. Keeping that we are in 09:24:05
16 Thornton Bank yes, that did change. 09:24:06
17 Q. And that was because of 09:24:09
18 difficulties encountered with that specific project 09:24:09
19 as it pertained to the use of gravity-based 09:24:12
20 foundations; is that correct? 09:24:15
21 A. The Phase I -- I'm sorry. Yes, 09:24:16
22 they did change foundation types as to some of the 09:24:18
23 construction logistics, but we have to remember too 09:24:21
24 that the Thornton Bank Phase 1 was a technology 09:24:24
25 demonstration. They did not build that project to 09:24:27

1 time that we've gotten to construction. And they've 09:25:34
2 embedded a number of levels before you get to that 09:25:36
3 point. 09:25:39
4 Q. So even at some point if you start 09:25:39
5 down the path of gravity-based, there could be some 09:25:40
6 lag time if you do need to switch? 09:25:43
7 A. Yeah, a re-design would require 09:25:45
8 additional time. 09:25:46
9 Q. Now, in both your reports, you 09:25:48
10 recommended the use of semi-floating gravity-based 09:25:50
11 foundations. And we've talked about that a bit in 09:25:52
12 your presentation this morning, but -- and so we all 09:25:55
13 understand, and just so I'm on the same page here, 09:25:57
14 if these foundations differ than regular 09:26:00
15 gravity-based foundations in that they're floated 09:26:03
16 out to the site, they're not jacked up on a barge 09:26:05
17 and taken out to the site; correct? 09:26:08
18 A. Correct. The difference is all in 09:26:10
19 the installation methodology. As to how they're -- 09:26:11
20 their function when they're out there and they've 09:26:14
21 been installed, it's all the same principles. 09:26:18
22 Q. Okay. And to the extent that 09:26:20
23 these foundations are used for the project then, as 09:26:22
24 you mentioned, it alleviates the need for those 09:26:24
25 heavy-lift machinery or vessels that are not readily 09:26:27

1 be a moneymaker. 09:24:29
2 Further, the type of facilities that 09:24:32
3 were available in Belgium to support that, were 09:24:34
4 mainly steel facilities. They had those online. So 09:24:36
5 it was an easy switch to make to the jackets because 09:24:40
6 a lot of that infrastructure was already there. 09:24:43
7 Whereas here, in -- for Windstream, Canada doesn't 09:24:46
8 have a lot of the steel infrastructure in place, but 09:24:49
9 they have the concrete infrastructure in place. So 09:24:52
10 that's their natural switch. 09:24:55
11 Q. All right. So if we're talking 09:24:58
12 about the Windstream project then, if something was 09:25:00
13 to occur where a change in foundation was required 09:25:04
14 during the construction phase, that would greatly 09:25:07
15 impact the project schedule in this; correct? You 09:25:10
16 mentioned that we don't have the infrastructure in 09:25:12
17 Canada to do, say, the steel foundations. 09:25:14
18 If for some reason Windstream had to 09:25:17
19 shift like Thornton Bank did for the gravity-base to 09:25:19
20 steel, there could be a problem for the project 09:25:22
21 schedule, correct? 09:25:25
22 A. I mean, if you change the 09:25:26
23 foundation, mid-construction, that's obviously a 09:25:28
24 project schedule impact. But it would be very rare 09:25:29
25 for a developer to switch foundation type by the 09:25:31

1 available on the Canadian market; correct? 09:26:30
2 A. Correct. 09:26:32
3 Q. Now, you note in your second 09:26:32
4 report that gravity-based foundations have been 09:26:33
5 successfully installed in over 13 operating wind 09:26:35
6 farms. Do you recall that? I can take you to the 09:26:38
7 page if you need it? 09:26:40
8 A. I do recall that, but I'd like to 09:26:41
9 see the page anyway. 09:26:43
10 Q. It's page 51 if your second 09:26:44
11 report, which is the first page of your report at 09:26:46
12 Tab 2. 09:26:49
13 A. Yes, okay. I see at the. 09:26:50
14 Q. And you list some of those 09:26:50
15 projects there? 09:26:52
16 A. That's correct. 09:26:54
17 Q. Now, none of those projects employ 09:26:54
18 the semi-floating installation methodology, correct? 09:26:56
19 Those are all regular gravity-based foundations? 09:26:59
20 A. Yeah, these are all cone-type 09:27:04
21 foundations. 09:27:06
22 Q. And if we go ahead two pages to 09:27:07
23 page 53, still staying in your report there, under 09:27:09
24 Section 2.1 you refer to the semi-floating 09:27:14
25 foundations as "Innovative and the next generation 09:27:16

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1 of technology development." 09:27:21
2 Do you see that? 09:27:22
3 A. Yes, we did write that. 09:27:23
4 Q. Okay. And on the next page again, 09:27:24
5 page 54, you note that the semi-floating 09:27:26
6 gravity-based foundation was installed in 2015 to 09:27:30
7 support a single meteorological tower; is that 09:27:35
8 correct? 09:27:38
9 A. No, that's not correct. The sea 09:27:39
10 tower crane free foundation is a fully-floating 09:27:40
11 technology. So it's is not a semi-floating 09:27:44
12 technology. 09:27:46
13 Q. Okay. So it's not relevant to the 09:27:46
14 discussion today then? 09:27:49
15 A. Well, they -- you know, it's 09:27:50
16 a blend of all the foundation types. Like I said, 09:27:51
17 once they're installed they all function 09:27:53
18 equivalently. They're all held in place by their 09:27:56
19 self weight. 09:28:00
20 Now, how you get them out there 09:28:01
21 changes. The cone-type foundations relied on cranes 09:28:02
22 that could lift thousands of tonnes. They're large 09:28:05
23 cranes. Some of them can't fit through the locks to 09:28:08
24 get to Lake Ontario. 09:28:11
25 The floating foundation, they're 09:28:13

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1 actually the heaviest type of foundation because 09:28:14
2 they have to have that extra mast to be able to 09:28:17
3 float. They also require the greatest water depth, 09:28:19
4 so that's also not a viable foundation for this 09:28:22
5 location. So by combining both aspects into the 09:28:22
6 semi-floating foundation, we're able to use the 09:28:24
7 water depths that are available with the benefits of 09:28:26
8 both technology by reducing those installation 09:28:29
9 vessels while still being able to work in the water 09:28:31
10 depth available. 09:28:34
11 Q. Okay. So if I follow then, given 09:28:36
12 that correction, we have the 13 projects that you 09:28:37
13 mentioned that have used the regular cone-type 09:28:40
14 foundation. We have the MET tower that's been 09:28:42
15 installed in the full-on-floating foundation, but as 09:28:45
16 of to date, there's been no wind farms that have 09:28:48
17 used the semi-floating methodology to install their 09:28:52
18 foundations; correct? 09:28:55
19 A. No, not as far as wind farms, but 09:28:56
20 this is -- this is actually one of the great 09:28:59
21 opportunities where we've been able to leverage this 09:29:01
22 technology from other industries, because the 09:29:04
23 semi-floating technology has been used in bridge 09:29:07
24 industries and some of the other concrete Caisson 09:29:08
25 projects, such is things like that Venice Lagoon. 09:29:09

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1 So it's -- while it's not novel to offshore wind, 09:29:09
2 it's a proven technology we're just borrowing from 09:29:13
3 other industries. 09:29:16
4 Q. Okay. But just -- 09:29:16
5 A. Yes. 09:29:17
6 Q. -- as a matter of fact, though, 09:29:17
7 yes, it's novel for offshore wind. Okay. 09:29:18
8 Now I want to turn to the Sgurr 09:29:23
9 report, Appendix 4, which is the project schedule. 09:29:26
10 I don't know if you guys have your giant printout 09:29:28
11 that you can -- make it easier on your eyes. 09:29:32
12 A. Okay. 09:29:36
13 PRESIDENT: Giant print out. 09:29:47
14 BY MS. SQUIRES: 09:29:49
15 Q. Exactly, so we'll call it even. I 09:29:49
16 know my eyes are grateful for that, so appreciate 09:29:51
17 you too, Donnie. 09:29:53
18 So, I want to have a look at line 368. 09:29:57
19 It indicates there that foundation installation for 09:30:14
20 the project was the project scheduled to begin on 09:30:17
21 November 12th, 2013 with mobilization beginning on 09:30:19
22 that date; do you see that? 09:30:22
23 A. Yes, I do see that. 09:30:23
24 Q. And if we jump back to line 275 -- 09:30:24
25 apologies for all the jumping around here, but take 09:30:29

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1 whatever time you need. 09:30:32
2 Line 275, it notes that: 09:30:40
3 "The design of these foundations 09:30:42
4 begins on February 11th of 2011." 09:30:43
5 A. Yes, that's correct. 09:30:46
6 Q. So presumably then, if Windstream 09:30:47
7 was to take advantage of the knowledge of any other 09:30:49
8 projects that have been designed and used 09:30:52
9 gravity-based foundations, leaving aside the 09:30:54
10 methodology of installation, just -- we're going to 09:30:56
11 just talk about gravity-based foundations, they 09:30:58
12 would need that information at that time, correct? 09:31:00
13 A. If they were using those projects 09:31:02
14 as references, then they would need that 09:31:04
15 information. 09:31:07
16 Q. Okay. So I want to turn to 09:31:07
17 page 10 of the second Sgurr report. So I believe 09:31:09
18 you've been given a copy, perhaps? 09:31:12
19 A. Is that in the binder? 09:31:14
20 Q. No. It's not, unfortunately, but 09:31:16
21 it's right here. Gravity-based foundations. 09:31:18
22 If he can get out, he'll pass it to 09:31:21
23 you. 09:31:23
24 A. I'm sorry, Page 10? 09:31:25
25 Q. Page 10, yeah. If you look 09:31:29

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1 towards the bottom of the page there, you can see 09:31:37
2 that SgurrEnergy is discussing the Thornton Bank 09:31:39
3 project. Do you see where I am there? 09:31:43
4 A. Yes. 09:31:54
5 Q. So they provide a bulleted list 09:31:54
6 there at the end of the page to compare Thornton 09:31:56
7 Bank to this project to indicate in their view it's 09:32:00
8 not appropriate. 09:32:02
9 Do you see -- follow where I am on the 09:32:04
10 bulleted list? 09:32:04
11 A. Yes, I do. 09:32:05
12 Q. Okay. So we're actually going to 09:32:05
13 turn over to the next page and look at one of the 09:32:06
14 factors on that list. It's around page 11. 09:32:08
15 The second bullet point on that page, 09:32:10
16 they argue that one of the reasons the comparison to 09:32:12
17 Thornton Bank is not appropriate is that the project 09:32:14
18 as the benefit of the experience gained from 09:32:16
19 approximately 6,900 megawatts of the offshore wind 09:32:19
20 industry projects built since Thornton Bank. 09:32:21
21 Do you see that? 09:32:25
22 A. Yeah, I see that. 09:32:25
23 Q. Okay. So now they're referring to 09:32:26
24 the number of megawatts installed for all projects 09:32:27
25 correct, not just gravity-based foundations? 09:32:30

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1 SgurrEnergy carried out in 2013, and I want to turn 09:33:38
2 to page 19 and have a look at figure 11. 09:33:40
3 So they note that there that the 09:33:51
4 market share of operating WTG foundations in 2013, 09:33:56
5 and they note that of that market share, only 09:33:59
6 16.1 percent of operating wind farms use 09:34:02
7 gravity-based foundation; do you see that? 09:34:10
8 A. No. I just have to remind you 09:34:10
9 that we didn't contribute to this report. I don't 09:34:12
10 know what the source is, but I do see their report 09:34:14
11 says that. 09:34:16
12 Q. And so if the 1600 megawatts is 09:34:17
13 a number -- a current number, which it seems to be 09:34:21
14 from that Sgurr report, and there were less than 09:34:23
15 installed -- there's obviously less installed in 09:34:26
16 2013. There's been projects that have come online 09:34:28
17 in between those two periods, and of that then, 09:34:30
18 a smaller number that was available was 09:34:33
19 gravity-based foundation at that time. Based on 09:34:39
20 this, if we take them for their -- if they take 09:34:39
21 SgurrEnergy for their word on this, that would be 09:34:41
22 the conclusion, correct? 09:34:43
23 MS. SEERS: Mr. Chairman, I have to 09:34:46
24 object here. Mr. Cooper says he doesn't know the 09:34:47
25 total size of the offshore wind megawatts and -- and 09:34:50

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1 A. I don't have information as to 09:32:33
2 the -- the entire industry size. 09:32:34
3 Q. Okay. Well -- 09:32:36
4 A. I'm sorry. 09:32:36
5 Q. That's okay. Let's turn -- you do 09:32:36
6 recognise it's probably smaller than that, though? 09:32:38
7 You have a general sense of the number of megawatts 09:32:41
8 that are was that have been installed for offshore 09:32:44
9 generally? 09:32:47
10 A. As of which -- I mean, are we 09:32:47
11 talking 2011, 2016 or -- 09:32:49
12 Q. So I believe in that paragraph 09:32:51
13 they are referring to current date. They are saying 09:32:52
14 since the Thornton Bank project. 09:32:55
15 A. I don't know. I think it's 09:32:58
16 conceivable that there could be that many megawatts. 09:33:00
17 The UK is building huge number of wind farms. I'm 09:33:03
18 sorry, I don't know the number. 09:33:06
19 Q. Okay. Well, let's turn to Tab 13 09:33:07
20 in your binder. It's Exhibit C-1735. 09:33:08
21 A. 13 -- which tab, I'm sorry? Oh, 09:33:20
22 Tab 13. Okay.
23 Q. Tab 13, yeah. It's Exhibit 1735. 09:33:28
24 This is an offshore wind turbine 09:33:31
25 generator foundation parametric study that 09:33:33

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1 my colleague is posing a hypothetical which I submit 09:34:54
2 is perhaps a little far afield from Mr. Cooper's 09:34:59
3 expertise here. 09:35:01
4 PRESIDENT: Well, I think the answer 09:35:02
5 only requires mathematics. 09:35:04
6 BY MS. SQUIRES: 09:35:11
7 Q. I -- I can rephrase the question 09:35:12
8 for you, Mr. Cooper, if you're not following where 09:35:13
9 I am, but the SgurrEnergy report, when it refers to 09:35:14
10 the 6,900, speaks of current day. We agree that 09:35:17
11 there would be less two years before that, correct? 09:35:20
12 A. Correct. 09:35:23
13 Q. And of that less number, 09:35:23
14 16.1 percent, according to SgurrEnergy, was 09:35:24
15 gravity-based; correct? 09:35:28
16 A. According to this, yes. 09:35:30
17 Q. Okay. So -- and then in 2011 we 09:35:31
18 can probably agree that that number was even 09:35:32
19 smaller? 09:35:35
20 A. That's actually a tricky answer. 09:35:36
21 It probably was smaller. But most of the early 09:35:37
22 phase foundations were gravity-based foundation. 09:35:41
23 And then since then -- and a large percentage were 09:35:45
24 installed and there have been a fewer number of 09:35:47
25 gravity-based foundation since. And now in 09:35:49

1 2015/2016, most of the industry is actually turning 09:35:54
2 back. But in that interim period, most of the 09:35:57
3 foundations installed were steel foundations. 09:35:59
4 Q. Okay. I think we can at least 09:36:02
5 agree that they wouldn't have the benefit of that 09:36:03
6 full 6,900 megawatts of today; correct? 09:36:05
7 A. Correct. 09:36:09
8 Q. I want to understand how 09:36:15
9 foundations are chosen for an offshore wind farm, 09:36:16
10 and you've gone through a bit of this in your 09:36:18
11 presentation this morning. But you've mentioned 09:36:21
12 there are numerous factors and they include factors 09:36:22
13 such as the lakebed shape and slope, correct? 09:36:25
14 A. That's just a few of the factors, 09:36:28
15 yes. 09:36:29
16 Q. And water, depth and ice effect, 09:36:30
17 vessel availability and suitable manufacturing 09:36:32
18 location; correct? 09:36:35
19 A. Yes, all of those are 09:36:36
20 considerations. 09:36:37
21 Q. Now -- and depending on the slope 09:36:37
22 of the lakebed or the amount of sediment present, 09:36:39
23 different foundation types might be recommended; 09:36:42
24 correct? 09:36:44
25 A. Yes, that's correct. 09:36:45

1 Canadian Hydrographic Service, but that's where 09:37:52
2 things start and then you proceed through a very 09:37:55
3 measured approach, because you don't go out and take 09:37:57
4 borings right in the beginning, so you start with -- 09:38:00
5 you start with phased geophysical surveys. So you 09:38:04
6 start with some of the site and the next -- and you 09:38:07
7 get a little bit more information, refine your 09:38:10
8 design, you might go back again and then survey all 09:38:12
9 of the site, then go back again and form your 09:38:15
10 geotechnical program. So yes, you do get lots of 09:38:17
11 information before you finalize the design. 09:38:22
12 Q. Okay. So generally speaking then, 09:38:23
13 when you're planning an offshore wind project, 09:38:25
14 there's a certain element of risk that remains until 09:38:29
15 you get to that final point of the on -- the on-site 09:38:32
16 studies? 09:38:34
17 A. That's correct. 09:38:34
18 Q. Now. I want to turn to page 138 09:38:35
19 of the second Sgurr report. So it's is not in your 09:38:36
20 binder; it is the report that was just handed up to 09:38:39
21 you. 09:38:42
22 A. I'm sorry, page 138? 09:38:46
23 Q. 138. 09:38:49
24 A. Okay. 09:38:50
25 Q. About halfway down the page there, 09:38:50

1 Q. Okay. And gravity-based 09:36:45
2 foundation generally tend to be best with relatively 09:36:48
3 flat lakebed conditions because less slope means 09:36:52
4 less work in preparing the lakebed and more 09:36:55
5 stability with the foundations; correct? 09:36:58
6 A. The -- I mean, it's less work, but 09:36:59
7 the -- also the type of work that we're talking 09:37:01
8 about, the dredging and filling, is also relatively 09:37:02
9 easy work. It's also work that's done commonly here 09:37:06
10 with dredging -- navigation channels. Yes, if the 09:37:09
11 seabed's flatter, it's less work, but that's not 09:37:13
12 a major -- the slope here, as long as we're within 09:37:17
13 with a certain range, is not a big consideration. 09:37:20
14 Q. Okay. Now, in order to determine 09:37:25
15 if all of this -- this seabed, or lakebed, I guess, 09:37:27
16 in this case, the conditions, in order to determine 09:37:27
17 what is present, you have to do on-site field 09:37:31
18 studies, correct, or geotechnical investigations? 09:37:33
19 A. Ultimately, before you get to the 09:37:37
20 construction phase, we would generally recommend 09:37:39
21 that. In a beginning phase of a project. We often 09:37:40
22 rely on the navigation charts published. So if 09:37:43
23 we're in the U.S., it would be the -- we would go on 09:37:46
24 NOAA charts. 09:37:49
25 In Canada, we would rely on the 09:37:50

1 it indicates that COWI used studies completed by the 09:38:52
2 Canadian seabed research to refine the proposed 09:38:56
3 foundation type and to assist in layout 09:38:58
4 recommendations. 09:39:01
5 Do you follow where I am? 09:39:01
6 A. Yes, I see that. 09:39:10
7 Q. Okay. And if we look to the 09:39:11
8 footnote that's referred to in that paragraph, 09:39:13
9 footnote 71, it refers to two separate CSR, Canadian 09:39:15
10 seabed research studies that you relied on; do you 09:39:20
11 see that? 09:39:23
12 A. I see that, but I'm trying to jog 09:39:23
13 my memory here of this. I may have to defer to 09:39:30
14 Sgurr on this because we did not write this 09:39:44
15 section of the report. COWI was also not involved 09:39:47
16 with the siting of the project or the micro-siting 09:39:50
17 of the turbines within the turbine layout. So, 09:39:52
18 unfortunately, I may have to defer to Sgurr on this 09:39:55
19 section. 09:39:58
20 Q. Okay. So even though Sgurr -- 09:39:59
21 MS. SQUIRES: If we can just scroll up 09:40:03
22 a bit there, Donnie, back to the paragraph. 09:40:04
23 BY MS. SQUIRES: 09:40:06
24 Q. Even though it says SgurrEnergy is 09:40:08
25 saying that those studies completed by 09:40:12

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1 Canadian seabed research were employed by COWI, your 09:40:14
2 view or your conclusion is that COWI did not rely on 09:40:17
3 those reports? 09:40:20
4 A. We were provided information for 09:40:20
5 this project in a series of summer reports and 09:40:22
6 overall conditions. We did he not receive the 09:40:28
7 entirety of reports. So it's possible that some of 09:40:29
8 the information that we received from Sgurr did 09:40:31
9 originate from those reports, but I did not see 09:40:33
10 those reports in their entirety. 09:40:35
11 Q. Okay. And -- okay. So perhaps we 09:40:37
12 can look through -- maybe if we look through certain 09:40:44
13 parts of the report it may trigger your mind if 09:40:48
14 you've seen that or not seen that before, but let's 09:40:50
15 turn to Tab 5 in your binder. So this is the first 09:40:54
16 document that was referred to in that footnote. And 09:41:04
17 this the 2007 Wolfe Island cable route survey. 09:41:09
18 Are you with me there?
19 A. Yes, I see that. 09:41:12
20 Q. We're going to turn to page -- to 09:41:13
21 figure 1.1, which is on Page 2. 09:41:15
22 MS. SQUIRES: And Donnie, for your 09:41:17
23 benefit, that's page 7 in the PDF. 09:41:18
24 BY MS. SQUIRES: 09:41:21
25 Q. This map demonstrates the survey 09:41:22

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1 Q. We're on page 18. 09:42:40
2 A. Okay. 09:42:41
3 Q. Section 5.6. And it notes there 09:42:42
4 in that paragraph that ground truthing could not be 09:42:46
5 carried out as part of their study, due to weather 09:42:49
6 conditions that were encountered. 09:42:52
7 Do you see where I am there? 09:42:54
8 A. I see that it says that, yep. 09:42:55
9 Q. And so we'll just walk through 09:42:57
10 a couple provisions, couple sections of this and 09:43:00
11 then we can assess them after, but -- and 09:43:03
12 I understand you might not be familiar with the 09:43:05
13 document, but... 09:43:07
14 A. No, I'm -- it just says that this 09:43:08
15 is a cable route survey, so we didn't have anything 09:43:09
16 to do under our scope of work with the cable route. 09:43:12
17 I mean, I'm reading this. That's... 09:43:15
18 Q. So, I think it actually says on 09:43:18
19 the -- the subject is "The wind farm and cable route 09:43:19
20 survey," so it extends -- 09:43:24
21 A. Okay. Yep. 09:43:25
22 Q. Unlike the last report, this one 09:43:25
23 would extend to a broader area. If we turn to 09:43:29
24 page 33, and we're going to look at the second 09:43:31
25 paragraph. In the last sentence there, CSR notes 09:43:47

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1 area that was used for that report. 09:41:25
2 A. Yeah, that appears to be correct. 09:41:28
3 Q. Okay. Now, you can see there that 09:41:30
4 the project location is actually nowhere near that; 09:41:31
5 correct? So the red line goes from Wolfe Island to 09:41:35
6 Kingston. But the project location itself is off 09:41:39
7 the Long Point which is towards the southwest of 09:41:42
8 Wolfe Island? 09:41:45
9 A. I mean, that's what this graphic 09:41:46
10 shows. 09:41:48
11 Q. Okay. So if this study's then 09:41:49
12 based on that survey area, it's irrelevant for 09:41:50
13 determining the foundation types in the actual 09:41:53
14 project location; correct? 09:41:56
15 A. It could contribute some 09:41:57
16 information, but, you know, again, this is not -- 09:41:59
17 this is not something I've seen. It's not something 09:42:01
18 I've had time to review, but... 09:42:04
19 Q. Okay. That's fine. We'll turn to 09:42:05
20 Tab 6 then. Let's try the second report. And this 09:42:05
21 is the -- the other report that was conducted in 09:42:17
22 2010 by the Canadian seabed research. It's Exhibit 09:42:19
23 C-0514. And if we turn to page 18 and look under 09:42:21
24 Section 5.6. 09:42:27
25 A. I'm sorry, where am I? 09:42:38

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1 that: 09:43:50
2 "Ground truthing determinations 09:43:52
3 from video and sediment samples 09:43:53
4 will be required in order to 09:43:54
5 determine grain size and 09:43:57
6 composition of the sediment." [As 09:43:58
7 read] 09:44:00
8 Do you see where I am? 09:44:01
9 A. No, I'm sorry. I'm -- like 09:44:02
10 I said, I'm orienting myself in this document for 09:44:04
11 the first time. 09:44:06
12 Q. So, understanding that you haven't 09:44:15
13 reviewed this -- 09:44:16
14 A. Yes. Okay. 09:44:16
15 Q. -- report yet -- 09:44:16
16 A. I'm up with you now. 09:44:17
17 Q. So to come back to something you 09:44:18
18 said earlier, CSR is agreeing with you that further 09:44:20
19 studies would need to be done because you need that 09:44:22
20 ground truthing in order to be determined -- make 09:44:25
21 final determinations on the site; correct? 09:44:27
22 A. Correct. 09:44:30
23 Q. Now, you mentioned -- so these are 09:44:30
24 the only two reports that are indicated by 09:44:32
25 SgurrEnergy that were relied on for the foundation 09:44:34

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1 conceptual design. And you mentioned that you 09:44:38
2 haven't reviewed them or you maybe have seen parts 09:44:40
3 of them, and I guess I'm curious to know what you 09:44:43
4 did review because the scope of work with your 09:44:45
5 report does not include any other type of 09:44:47
6 geotechnical study. 09:44:52
7 A. No. I mean, we probably listed 09:44:54
8 the references in our report, but we were provided 09:44:56
9 a series of reports from Sgurr that had different 09:44:59
10 types of information. The primary -- let me refer 09:45:02
11 to my report for a moment, please. 09:45:10
12 Q. So your first report on page 28 09:45:12
13 lists off your references, if that helps. 09:45:15
14 A. Do we have the appendix that 09:45:32
15 should be at the end of Section 6? Because that's 09:45:34
16 the design-basis memo that would have all the design 09:45:36
17 constraints that went into choosing this design. 09:45:40
18 Q. If you look at Tab 1 in your 09:45:44
19 binder, it might be what follows after page 28. 09:45:46
20 A. Thank you. 09:45:57
21 Q. I note that that part has 09:45:57
22 a separate list of references on page 9. 09:46:25
23 A. Yes, I see those references now. 09:46:33
24 Q. Okay. So, of those references 09:46:35
25 then, none of those are a geotechnical desktop study 09:46:37

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1 with the level of design that we were asked to 09:48:12
2 provide. I mean, this was a concept study based on 09:48:13
3 some of the general characteristics of the site. So 09:48:16
4 somewhere we got some information that allowed us to 09:48:19
5 get the rock quality designation that was in that 09:48:22
6 earlier design-basis memo, but as to looking at 09:48:25
7 specific turbine siting, that would not be done in a 09:48:28
8 conceptual design. It wouldn't be done in 09:48:30
9 preliminary design. You wouldn't get to that until 09:48:33
10 the detailed design phase, so that -- we wouldn't 09:48:35
11 have relied on specific turbine citing data. 09:48:38
12 Q. So it's fair to say that it's not 09:48:40
13 clear, looking at your report, what exactly, what 09:48:42
14 information -- we can't determine what information 09:48:44
15 you relied on? 09:48:46
16 A. Two years ago, I don't remember 09:48:47
17 exactly which reference was which, no. 09:48:48
18 Q. Okay. Let's move on to 09:48:51
19 a different topic. 09:48:57
20 A. Okay. 09:48:58
21 Q. And we're going to look at your 09:48:58
22 second report, which is at Tab 2, and have a look at 09:49:00
23 page 54, which is the third page. And in the last 09:49:09
24 paragraph, you note that the water depth for the for 09:49:16
25 as proposed, ranges from 5 metres to 30 metres? 09:49:19

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1 or summary of the lakebed; correct? 09:46:44
2 A. I believe the draft project 09:46:49
3 description did have some information. 09:46:51
4 Bill Follett, the third reference, was our contact 09:46:56
5 at SgurrEnergy who provided a lot of the 09:47:00
6 information. And this was a couple of years ago. 09:47:03
7 I'd have to go back into the reports to see if any 09:47:11
8 of them also contained any additional information. 09:47:15
9 Q. Okay. Well, we can have a look, 09:47:18
10 perhaps, at that Bill Follett email, and that's -- 09:47:19
11 it's at Tab 9 of your binder. 09:47:21
12 A. Okay. 09:47:32
13 Q. So you will see there that 09:47:32
14 Mr. Follett -- that this is an email from Bill 09:47:34
15 Follett to you and he's indicating that the folks at 09:47:39
16 Ortech put something together for you guys to look 09:47:45
17 at and it simply touches one Isopach or bathymetry 09:47:47
18 chart on the second page; correct? 09:47:54
19 A. That appears to be the case, yes. 09:47:55
20 Q. So, in doing your foundation 09:47:58
21 design then, you didn't ask to see any other studies 09:48:01
22 beyond what was provided to you by Ortech in this 09:48:03
23 email and perhaps the draft project description from 09:48:06
24 Ortech in 2012? 09:48:09
25 A. No. That would be inconsistent 09:48:10

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1 A. That's correct. 09:49:24
2 Q. See where I am? 09:49:24
3 A. Yes. 09:49:25
4 Q. And if we turn back to Page 51, so 09:49:25
5 the first page, you note that the gravity-based have 09:49:27
6 been installed on offshore wind farms and projects 09:49:34
7 up to 27 metres in depth. 09:49:38
8 Do you see where I am there? 09:49:41
9 A. Yes, I do. 09:49:42
10 Q. Okay. So, if Windstream's project 09:49:42
11 is going to be built up to 30 metres, given that 09:49:45
12 they're -- they have only been installed up to 09:49:47
13 27 metres to date, then Windstream's project would 09:49:52
14 have been the deepest to date to use that 09:49:55
15 technology; correct? 09:49:59
16 A. It would have been the deepest 09:50:00
17 offshore wind farm at that time, but the next 09:50:01
18 paragraph down, we talk about the viability of those 09:50:05
19 foundations has been proposed for four projects and 09:50:07
20 up to 55 metres of water, and the same technology's 09:50:11
21 also been used for -- like I said, I gave examples 09:50:14
22 in my presentation, the Confederation Bridge in 09:50:16
23 35 metres. Same technology in the Hibernia gas 09:50:18
24 platform, the 80 metres, so the -- yeah, the first 09:50:23
25 of the time -- first for a wind farm, but certainly 09:50:23

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1 not the first for the technology. 09:50:26
2 Q. Okay. But we agree on first for a 09:50:28
3 wind farm? 09:50:30
4 A. Yes. 09:50:30
5 Q. Okay. Now, let's turn to page 24 09:50:31
6 of your first report, which is at Tab 1. 09:50:32
7 And here you are discussing water 09:50:48
8 depth considerations for the installation of 09:50:49
9 foundations under Section 4.3.1. 09:50:51
10 Do you see where I am? 09:50:55
11 A. Yes, I do. 09:50:56
12 Q. And in the first paragraph, the 09:50:57
13 last sentence, you note that: 09:50:58
14 "The system, as designed, requires 09:51:00
15 a minimum water depth of 09:51:02
16 8.2 metres at the port, the 09:51:04
17 designed turbine location and 09:51:05
18 along a navigational fairway 09:51:06
19 between the two points." 09:51:08
20 [As read] 09:51:10
21 Do you see that? 09:51:10
22 A. I do. 09:51:11
23 Q. And at the end of the second 09:51:11
24 paragraph when discussing installation in less than 09:51:13
25 6 metres of water, you note that you have assumed 09:51:15

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1 6 metres and 8.2 metres; correct? 09:52:16
2 A. No. We cut off our analysis 09:52:19
3 always 6 metres. 09:52:20
4 Q. Now, I just want to haul up 09:52:21
5 a demonstrative for everyone to look at. 09:52:22
6 MS. SQUIRES: And Donnie, if you could 09:52:24
7 haul up slide 1. 09:52:26
8 I think a copy of them has been handed 09:52:27
9 out or you have them there. Melissa is going to 09:52:30
10 hand out a copy so you can see, but it will come up 09:52:35
11 on the screen as well. 09:52:37
12 BY MS. SQUIRES: 09:52:39
13 Q. Now, this is the 2015 project 09:52:47
14 layout for the Wolfe Island Shoals wind farm. And 09:52:49
15 if you look there on the right-hand side, it 09:52:53
16 indicates the different dots for the different 09:52:54
17 turbines are based on different water depth. And 09:52:57
18 this is found at page 24 of the second Sgurr report. 09:53:00
19 MS. SEERS: And if -- Donnie, if you 09:53:04
20 could just click the next slide there. 09:53:05
21 BY MS. SEERS: 09:53:08
22 Q. You can see that the ones that 09:53:08
23 Donnie has highlighted, those are the ones that are 09:53:09
24 found between 5 and 10 metres of water. So, you 09:53:11
25 would agree with me that -- and taking for granted 09:53:17

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1 another foundation system would be used. 09:51:21
2 Do you see that? 09:51:23
3 A. Yes. 09:51:24
4 Q. Now, in your report you've not 09:51:24
5 opined on what foundations would be used in less 09:51:26
6 than 6 metres of water or what this would mean for 09:51:28
7 their manufacture or their impact on the project the 09:51:31
8 project schedule; correct? 09:51:34
9 A. No. I mean, what I can contribute 09:51:35
10 to this is that we've -- this is a system that we've 09:51:37
11 worked on with Weeks Marine previously. 09:51:40
12 This has been originally developed for 09:51:43
13 the freshwater wind project in Lake Erie, and we've 09:51:45
14 proven the stability of the system in the flotation 09:51:48
15 as low as 6 metres because that's -- that's as low 09:51:50
16 as we've been asked to look at it. 09:51:55
17 Chances are good that in less than 09:51:57
18 6 metres, because the foundations are lighter 09:51:59
19 weight, they would not draw as much water. They 09:52:02
20 would be shallower. So chances are you would be 09:52:04
21 able to employ the same system in less than 6, 09:52:07
22 metres but we've not run calculations to that 09:52:11
23 effect. 09:52:13
24 Q. Okay. And you've also not opined 09:52:13
25 what would be done for what water depths between the 09:52:15

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1 it is between 5 and 10, so I agree that some might 09:53:20
2 be more than 6 -- there are a possibility here that 09:53:23
3 some of those foundations could not employ the 09:53:25
4 technology that you've recommended into your report? 09:53:27
5 THE WITNESS: No, I suggested that 09:53:29
6 they may be able to use that technology, but we have 09:53:30
7 not proven as to such and run the calculation 09:53:33
8 numbers -- 09:53:36
9 BY MS. SQUIRES: 09:53:36
10 Q. So, it's uncertain -- 09:53:37
11 A. -- on those foundations between 5 09:53:38
12 and 6 metres. 09:53:40
13 Q. So it's uncertain right now? 09:53:41
14 A. There is a possibility. 09:53:43
15 Q. And to your knowledge, then 09:53:44
16 there's nothing in the SgurrEnergy schedule or in 09:53:45
17 any other technical reports filed by the Claimant 09:53:48
18 that discusses what other technology could be used 09:53:50
19 in the event that you could not use the methodology 09:53:52
20 that you provide in your report? 09:53:54
21 A. No, there's no discussion of 09:53:57
22 another technology. The only part that I would add 09:53:58
23 is that we were told -- and like I said, we didn't 09:54:01
24 have anything to do with the siting and the 09:54:04
25 micro-siting of the turbines, but that the turbine 09:54:05

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1 lay out wasn't -- wasn't set, and from general 09:54:08
2 experience with other projects. This is part of the 09:54:11
3 normal design phase. 09:54:13
4 Once you establish the technology and 09:54:15
5 you understand the limits of it, you revisit your 09:54:17
6 turbine layout and then you adapt -- you adapt that 09:54:19
7 layout to fit the limits of your technology. 09:54:23
8 So multiple iterations of this layout, 09:54:26
9 like I said, while we didn't have anything to do 09:54:27
10 with them, would have been normal as parts of that 09:54:30
11 development phase. 09:54:33
12 Q. Okay. So the stage we're at now 09:54:34
13 then with the little bit of uncertainty or the 09:54:35
14 uncertainty that remains is because of the early 09:54:37
15 stage developments of the project? 09:54:39
16 A. Yes, I would say that's correct. 09:54:41
17 Q. All right. Let's turn to page 55 09:54:43
18 of your second report. 09:54:45
19 You note there that: 09:54:57
20 "Based on the preliminary geotech 09:54:58
21 studies," the ones that you in 09:55:01
22 fact did review, I guess, "the 09:55:03
23 project area is comprised of 09:55:04
24 shallow bedrock from exposed 09:55:06
25 overlay by as much as 2 metres of 09:55:08

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1 a place where the turbine layout's changing. We 09:56:13
2 talked about that that's part of the normal 09:56:17
3 development phase. 09:56:19
4 We also talked about that that area 09:56:20
5 ranges from 0 to 2 metres. So if we talk about -- 09:56:22
6 if we -- we assume, and I think everyone agrees. 09:56:26
7 That more sediment is slightly more work, than 09:56:28
8 an average value for design would be 1 metre of 09:56:31
9 loose sediment. So we've erred on the conservative 09:56:34
10 side for one representative design that 1.5 metres 09:56:38
11 would be a reasonable starting space, given that 09:56:41
12 we're only completing one representative design. 09:56:44
13 Q. Okay. So it's a starting space, 09:56:46
14 but recognizing that different design or different 09:56:48
15 considerations would have to go in for those 09:56:52
16 25 percent that are outside that realm? 09:56:54
17 A. If they were not relocated to 09:56:56
18 other areas within the overall project site, you 09:56:57
19 know, you may have some additional considerations. 09:57:01
20 Certainly these can be installed in areas that have 09:57:04
21 more than two metres of surficial sediments. 09:57:08
22 Some of the other projects have looked 09:57:12
23 at excavating as much as 6 or 7 metres of sediment, 09:57:14
24 so the technology's certainly applicable. 09:57:18
25 Q. It's theoretically possible, but 09:57:21

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1 surface sediment." 09:55:12
2 Do you see that? 09:55:13
3 A. I do. 09:55:15
4 Q. And we're going to turn back to 09:55:14
5 page 8 of your first report, and we're going to look 09:55:16
6 at the first paragraph. 09:55:21
7 It indicates that these initial 09:55:29
8 geotechnical studies indicate that approximately 09:55:31
9 75 percent of the proposed foundations are located 09:55:33
10 in area of where the bedrock is within 2 metres of 09:55:36
11 the lake bottom. Do you see that? 09:55:40
12 A. I do. 09:55:42
13 Q. And if we turn ahead to page 13, 09:55:42
14 you indicate there in table 3.1 that one of the 09:55:46
15 design parameters that you used to select 09:55:50
16 gravity-based foundation is the assumption that 09:55:54
17 there's 1.5 metres of loose sediment over limestone 09:55:55
18 bedrock. Correct? 09:56:01
19 A. That's correct. 09:56:02
20 Q. So despite 25 percent of the 09:56:03
21 turbines being in more than 2 metres of sediment, 09:56:03
22 you've based your report conclusions on a uniform 09:56:04
23 assumption of 1.5 metres; correct? 09:56:08
24 A. Well, we have -- that's correct, 09:56:10
25 but we have to understand why. I mean, we're in 09:56:11

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1 for the purposes of your report you haven't 09:57:23
2 explored -- you've just assumed the 1.5? 09:57:24
3 A. Correct. 09:57:26
4 Q. Now, I'm going to turn back to the 09:57:27
5 Canadian seabed research study, and again, 09:57:28
6 I recognise that you're not familiar with it, but 09:57:30
7 maybe we can draw a conclusion from it. 09:57:33
8 A. Okay. 09:57:35
9 Q. We're going to -- it's at Tab 6 09:57:35
10 and it's Exhibit C-0514. So we're at page 34. 09:57:37
11 MS. SQUIRES: Donnie, that's 40 in the 09:57:50
12 PDF. 09:57:51
13 BY MS. SQUIRES: 09:57:53
14 Q. They note there on the second 09:57:53
15 paragraph, that there's a deeper channel with 09:57:57
16 a thick layer of sediment over top of the bedrock 09:58:01
17 that runs through the central region of the proposed 09:58:04
18 project area. 09:58:07
19 Do you see where I am? 09:58:08
20 A. Yes. 09:58:11
21 Q. And they note that different 09:58:11
22 turbine foundation designs may be needed for each of 09:58:14
23 these two different lakebed conditions. That's 09:58:16
24 their conclusion. 09:58:19
25 A. I see that it says that. 09:58:20

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1 Q. Okay. So I just -- I want to -- 09:58:21
2 PRESIDENT: Excuse me, where are we, 09:58:23
3 page 4? 09:58:24
4 MS. SQUIRES: We're at page 34. 09:58:27
5 PRESIDENT: 34, sorry. 09:58:28
6 MR. BISHOP: Is that the first or 09:58:33
7 second paragraph? 09:58:34
8 MS. SQUIRES: The second paragraph. 09:58:36
9 So it's the third sentence and the second paragraph 09:58:36
10 starting with "Secondly a deep channel"... 09:58:42
11 Okay. So we're going to haul up 09:58:45
12 another demonstrative on the screen which was also 09:58:48
13 in the package that was handed out, but I -- Donnie, 09:58:52
14 if you could click the next slide. 09:58:54
15 So, you can see from this, this is 09:58:56
16 the -- the survey that they did and it's actually -- 09:58:59
17 it's actually the same layout that was provided in 09:59:02
18 that Bill Follett email that we looked at earlier, 09:59:04
19 and you can note here that there is that -- that 09:59:07
20 deep channel that's placed in the centre there with 09:59:12
21 a green and blue; do you see that? 09:59:15
22 A. I see a deep channel, yes. 09:59:18
23 MS. SQUIRES: And if we just go to the 09:59:21
24 next slide, Donnie. 09:59:22
25 BY MS. SQUIRES: 09:59:23

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1 preparation. That's just something that had to be 10:00:28
2 more understood. 10:00:30
3 Q. All right. So until we have those 10:00:31
4 studies, right now we're just guessing. 10:00:32
5 A. Yes. 10:00:34
6 Q. Okay. 10:00:34
7 A. Well, not guessing. We have 10:00:34
8 educated opinion which suggest they're competent, 10:00:34
9 but, yeah, more information is necessary. 10:00:36
10 Q. I don't mean to imply that you're 10:00:37
11 just pulling this out of the air, for sure. 10:00:39
12 Now, before we leave this topic, 10:00:42
13 I want to turn to Tab 13 in your binder, which is 10:00:44
14 C-1735. And this is the SgurrEnergy foundation 10:00:48
15 parametric study from October 2013 that we spoke 10:00:54
16 about earlier. 10:00:58
17 We're going to turn to page 10. And 10:00:59
18 we'll look at the paragraph that starts: 10:01:06
19 "At the Wolfe Island site under 10:01:09
20 geotechnical investigative." 10:01:12
21 And they note there that the layer of 10:01:16
22 the over burden material was 1.5 metres for 35 10:01:18
23 percent of the tests that they carried out. 10:01:22
24 1.5 metres to 3 metres for 47 percent of the tests, 10:01:24
25 and the remaining 18 percent of the tests comprised 10:01:27

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1 Q. You can see we've placed that then 09:59:24
2 over the 2015 layout that's found at page 24 of the 09:59:26
3 Sgurr report. So we've -- the foundations then are 09:59:31
4 placed on that channel. 09:59:33
5 MS. SQUIRES: And if we just go to the 09:59:35
6 next slide for ease of -- there we go. 09:59:37
7 BY MS. SQUIRES: 09:59:39
8 Q. So now we can see which turbines 09:59:40
9 in the project layout actually fall within that 09:59:42
10 deeper channel or deeper areas of sediment. 09:59:45
11 And you can see there that there's 09:59:48
12 quite a number of turbines that, in CRS' conclusion, 09:59:50
13 fall within a deep level of sediment that will 09:59:55
14 require either, as you put it, more considerable 09:59:59
15 lakebed preparation or would require another type of 10:00:02
16 foundation; is that correct? 10:00:05
17 A. Those -- you know, those are 10:00:07
18 possible options. Like we talked about the turbines 10:00:07
19 can be moved to other areas a of the project site. 10:00:09
20 Once the settlement's fully understood, whether it 10:00:12
21 is a competent sand or rock or gravel, it may be 10:00:14
22 possible that you don't have to excavate at all. 10:00:18
23 But, you know, its the -- you know, worst case, you 10:00:20
24 may have to have some different considerations. 10:00:22
25 Best case, you can use them as is with no 10:00:24

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1 overburden of greater than 3 metres. 10:01:30
2 Do you see where I am there? 10:01:32
3 A. I see the report says that. 10:01:33
4 Q. Okay. So according to 10:01:35
5 SgurrEnergy then, when they did -- based on the 10:01:36
6 information that they had before them, 65 percent of 10:01:40
7 the turbines are located in areas that have an over 10:01:43
8 burden more than what you've used in your report; 10:01:46
9 correct? Assuming my math is right on 47 plus 18. 10:01:48
10 A. Yep. Okay. 10:02:00
11 Q. All right. So you've assumed 10:02:01
12 1.5 metres, but in fact it could be possible that 10:02:03
13 upwards if 65 percent of the foundations in the area 10:02:04
14 don't actually follow that assumption; correct? 10:02:08
15 A. Based on the statement. That 10:02:11
16 appears possible. 10:02:12
17 Q. Okay. Now. Before we leave that 10:02:16
18 tab, if you'll look at the next paragraph on that 10:02:18
19 page. In the last paragraph there before the 10:02:20
20 figure, SgurrEnergy also notes that: 10:02:22
21 "While the majority of lakebed 10:02:24
22 comprises between 0 and 1-degree 10:02:26
23 slopes, slopes of 3 and 4 degrees 10:02:29
24 exist at some parts of the project 10:02:31
25 location." [As read] 10:02:33

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1 Correct? 10:02:36
2 A. Im -- I'm sorry, I was trying to 10:02:36
3 read ahead of you. I apologies. Could you read 10:02:40
4 that again? 10:02:42
5 Q. So I'm looking at the sentence 10:02:43
6 where they say: 10:02:44
7 "While the majority of the lakebed 10:02:45
8 comprises between 0 and 1 10:02:47
9 degree" -- 10:02:49
10 A. Yes. 10:02:49
11 Q. (Reading) 10:02:49
12 "Slopes of 3 and 4 degrees exist 10:02:49
13 in some parts"? [As read] 10:02:52
14 A. Yes. 10:02:53
15 Q. If we move ahead to page 29 to see 10:02:53
16 the conclusion that they've drawn from that, if you 10:02:55
17 look at the second-last paragraph, they note that in 10:03:03
18 their opinion: 10:03:08
19 "Uneven terrain encountered at the 10:03:09
20 lakebed that would require 10:03:11
21 significant preparation works 10:03:13
22 prior to leveling of the 10:03:14
23 gravity-based foundation, it may 10:03:17
24 also cause concern over 10:03:18
25 stability." 10:03:20

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1 second SgurrEnergy report. So again that's not in 10:04:21
2 your binder; that's the additional one. We look at 10:04:24
3 the third last paragraph on page 29. They note 10:04:33
4 that: 10:04:39
5 "Bowmanville was selected as 10:04:39
6 a possible location because 10:04:40
7 repurposing an existing facility 10:04:43
8 or capitalizing on the existing 10:04:45
9 infrastructure of these facilities 10:04:49
10 is expected to reduce facility 10:04:50
11 development, time and cost." 10:04:52
12 [As read] 10:04:55
13 Do you see that? 10:04:56
14 A. I do. 10:04:56
15 Q. Now, if we -- sorry. If we come 10:04:57
16 back to your report -- I should get the page number. 10:05:01
17 So we're going to come to your first 10:05:15
18 report and we're going to look at the appendices in 10:05:16
19 the back. It's where you have the different maps 10:05:19
20 and conceptual designs. We're going to look at the 10:05:21
21 third page, which is the -- a Google earth view of 10:05:27
22 the St. Mary's facility. 10:05:31
23 A. Okay. 10:05:34
24 Q. Give everyone a chance to get 10:05:38
25 there. 10:05:39

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1 [As read] 10:03:20
2 Do you see that? 10:03:21
3 A. Yeah, I see that that's written, 10:03:22
4 but from my perspective is that people designing the 10:03:23
5 foundation, 3 to 4 degrees doesn't scare me at all. 10:03:27
6 I mean, we've designed foundations that have gone in 10:03:30
7 and -- and sloped steeper than that. Some of the 10:03:33
8 European projects use more than that. I mean, the 10:03:36
9 gravel mats that we place have anywhere between 30 10:03:39
10 and 45 degrees angles to taper the mats. So 10:03:41
11 accommodating 3 to 4 degrees I don't see as a major 10:03:45
12 technical challenge. 10:03:49
13 Q. Okay. So you differ in opinion 10:03:51
14 from SgurrEnergy on that point? 10:03:52
15 A. In this particular point, the -- 10:03:53
16 I don't see 3 to 4 degrees as a technical challenge. 10:03:55
17 Q. Okay. Now, I want to move now to 10:04:01
18 discuss the manufacturing and the foundation at the 10:04:05
19 St. Mary's cement facility. 10:04:09
20 A. Okay. 10:04:11
21 Q. And you've noted for the purposes 10:04:12
22 of your report, you've assumed this is the facility, 10:04:13
23 it is a representative facility; correct? 10:04:16
24 A. Yes. 10:04:18
25 Q. And if we turn to page 29 of the 10:04:19

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1 So again, it's -- it's in the -- the 10:05:40
2 first COWI report in the appendices at the back 10:05:43
3 you'll see some maps. All right. So this is 10:05:45
4 a Google earth view of the facility, and then on the 10:06:03
5 next page you've drawn in there three production 10:06:06
6 lines into that -- that area; correct? 10:06:10
7 A. That's correct. 10:06:11
8 Q. And it notes there one of the 10:06:13
9 arrows that says that: 10:06:16
10 "This is the planned extent of the 10:06:17
11 site." 10:06:21
12 It that correct? 10:06:22
13 A. Yes, that's correct. 10:06:22
14 Q. Okay. So this represents the 10:06:22
15 outer boundary of the site as you had designed it at 10:06:23
16 the time; correct? 10:06:27
17 A. That was the limit of what we -- 10:06:28
18 we had recommended based on that scenario, yes. 10:06:29
19 Q. Okay. And it shows that the 10:06:31
20 majority of the land then is used up by the three 10:06:32
21 production lines; correct? 10:06:34
22 A. I mean, in -- in this case I think 10:06:37
23 we said 15 -- where is that number? I would not say 10:06:39
24 the majority. 10:06:47
25 Q. So, this diagram is to scale 10:06:48

1 though, correct? 10:06:50
2 A. Okay. So we said 26 hectares for 10:06:52
3 the area contained within the yellow line, and the 10:06:54
4 actual production lines occupy approximately 10:06:58
5 15 hectares, so that's -- that's more than half. 10:07:01
6 Yeah, that's -- I'll give you the majority. 10:07:03
7 Q. Okay. Now, in your -- in your 10:07:06
8 second report, you noted that the facility had 10:07:09
9 been -- the design of the facility had been updated 10:07:13
10 from the May 2014 and now uses six parallel 10:07:15
11 construction lines; correct? 10:07:20
12 A. We did not actually update this 10:07:22
13 design. We said, "Based on that new scenario we 10:07:25
14 would recommend 6 lines," yes. 10:07:28
15 Q. So you've not provided any kind of 10:07:30
16 design details for a sixth production line? 10:07:32
17 A. That's correct. 10:07:36
18 Q. And if we look at that map then, 10:07:36
19 you would agree with me that you cannot fit -- as 10:07:38
20 the -- as it currently looks right there now in that 10:07:40
21 planned extensive site, you could not fit six 10:07:44
22 production lines; correct? 10:07:47
23 A. No, I don't agree because, (1), 10:07:49
24 we're not limited to this extent. 10:07:50
25 If we go back one more -- one more 10:07:53

1 the elevator platform and construct the lines 10:08:56
2 onshore and not use the jetty. We could use the 10:08:59
3 jetty for material staging and we could move the 10:09:03
4 construction lines on shore, put the elevator 10:09:03
5 platform on the shoreline. So there is a number of 10:09:08
6 options to expand. 10:09:10
7 Q. Okay. So lots -- as you said, 10:09:12
8 numerous theoretically possible, but as of right 10:09:12
9 now, we don't have that design in front of us? 10:09:17
10 A. Yeah, that's correct. Lots of 10:09:19
11 options; this is the only one we submitted. 10:09:20
12 Q. Okay. Now, you -- we've discussed 10:09:22
13 in your first report the three production lines and 10:09:23
14 that you've suggested boosting this up to six 10:09:26
15 production lines in your -- in your second report. 10:09:29
16 Now, you've had a chance to review the 10:09:32
17 rejoinder report of URS, I presume, since they -- 10:09:35
18 since it's been filed in November, and they noted 10:09:40
19 an either further problem with the six production 10:09:42
20 lines and that results in a bottleneck in 10:09:45
21 production; correct? 10:09:48
22 A. Yeah. We -- we take exception to 10:09:48
23 a significant portion of the URS report. They 10:09:50
24 seemed to have not have understood how the 10:09:53
25 fabrication facility works because they've -- we can 10:09:57

1 sheet to the sketch 3. We see a large amount of 10:07:55
2 un-developed land outside of that yellow line and 10:07:58
3 because that yellow line's arbitrary -- I mean. We 10:08:00
4 only drew that line because that's what we 10:08:03
5 recommended based on that scenario, but there also 10:08:05
6 appears to be extra undeveloped land to the east, to 10:08:07
7 the west, to the north. All of those -- those rocky 10:08:10
8 and -- and green areas appear un-developed and I -- 10:08:13
9 you know, based on the type of analysis we did, 10:08:17
10 I see no reason why you couldn't use those as well. 10:08:19
11 Q. Okay. So then in order to get the 10:08:22
12 six production lines, we're talking more than just 10:08:24
13 repurposing an existing facility by expanding it 10:08:26
14 with the consequence of time and money; correct? 10:08:30
15 A. The repurpose and whatnot was not 10:08:33
16 COWI language, but, you know, again, if we're 10:08:35
17 building fabrication rails here, I mean, we can 10:08:37
18 build them next door to where they are too. 10:08:40
19 There's -- there's no technical difference. 10:08:43
20 Q. Okay. But given the scale of the 10:08:44
21 diagram, if the three takes up the majority, if 10:08:46
22 you're going to build more lines next door, 10:08:48
23 presumably you would have to infill some lakebed or 10:08:51
24 something; correct? 10:08:54
25 A. No. We could move the location of 10:08:55

1 go through their assumptions if you want, but the -- 10:09:59
2 the constructions activities are not limited to 10:10:00
3 a certain position on the line. 10:10:02
4 I mean, an informed and experienced 10:10:04
5 contractor will know when they need to move the 10:10:07
6 foundations along the line to receive the next stage 10:10:09
7 of construction. 10:10:11
8 So, I mean, also these facilities with 10:10:13
9 their cross rails, the entire design of the system 10:10:17
10 is -- is intended to reduce bottlenecks, so we 10:10:19
11 might see that as a risk. This is actually 10:10:24
12 a risk-mitigation strategy. 10:10:26
13 Q. Okay. So -- but when URS was 10:10:27
14 looking at that and made that conclusion on the 10:10:30
15 bottleneck, they were looking at the project 10:10:32
16 schedule; correct? They were looking at the 10:10:34
17 sequential production of those foundations; do you 10:10:36
18 recall? 10:10:38
19 A. They -- yes. They were looking at 10:10:40
20 a number of activities that were required, and they 10:10:42
21 were looking at some of the schedule, but what's not 10:10:44
22 included in the schedule is when the foundations are 10:10:47
23 actually moved from position to position and URS has 10:10:50
24 assumed that the entirety of one fabrication 10:10:54
25 activity takes place in one position and then the 10:10:56

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1 foundation is moved and then you do the entirety 10:10:59
2 duration of that next construction activity and then 10:11:02
3 the foundation is moved, and that's not the case. 10:11:05
4 These -- these are fabricated in such a way that 10:11:07
5 maybe in one position, yes, the -- the -- I don't 10:11:10
6 know the durations, but say component A takes ten 10:11:12
7 days to build, but that could take six days in 10:11:16
8 position one and four days in position two. And 10:11:19
9 that's simply based on the other production rates 10:11:21
10 and tying all the different crafts together. 10:11:23
11 Like I said, that's -- that's 10:11:26
12 a construction scheduling issue that an experienced 10:11:28
13 contractor's used to dealing with. 10:11:29
14 Q. Okay. So you can fix it, as you 10:11:31
15 said in your opening presentation then, by moving 10:11:33
16 workers and equipments along that line to deal with 10:11:36
17 those bottleneck issues? 10:11:38
18 A. Well, like I said, this entire 10:11:40
19 system is designed to reduce bottle necks and 10:11:43
20 mitigate that possibility, so we don't see the 10:11:45
21 possibility of bottlenecks as a major issue, but 10:11:48
22 yes, that's the benefit of the system is that you're 10:11:51
23 able to relieve a lot of those potential issues. 10:11:53
24 Q. Okay. 10:11:56
25 A. I should also point out that 10:11:56

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1 scope of our work. 10:12:54
2 Q. I just have a couple of questions. 10:12:55
3 A. That's the big book again? 10:12:57
4 Q. Yep. Big book, page 34. We're 10:12:59
5 looking under Section 3.1.10. 10:13:02
6 A. Okay. 10:13:07
7 Q. And you can see there in the third 10:13:07
8 sentence that they note that: 10:13:09
9 "An island-based substation has: 10:13:11
10 Been proposed at this stage of the 10:13:15
11 design of the project, but other 10:13:16
12 options are possible, including 10:13:18
13 a substation mounted on 10:13:20
14 a foundation platform." [As read] 10:13:22
15 Do you see that? 10:13:23
16 A. You know, again, we didn't have 10:13:24
17 anything to do with this. I do see that it says. 10:13:25
18 Q. Yeah, so my question is not then 10:13:27
19 related to the appropriateness of a substation. My 10:13:28
20 question then is the foundation platform that would 10:13:31
21 be used for that type of substation, you have not 10:13:32
22 accounted for that design or manufacture in the 10:13:35
23 manufacturing facility that you have designed; 10:13:38
24 correct? 10:13:39
25 A. Well, if it were on an island, it 10:13:40

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1 because of this and because of the redundancies in 10:11:59
2 the reliability of this system, this is the type of 10:12:01
3 system that France is moving to in some of the new 10:12:03
4 like Fécamp and Saint-Nazaire projects. So I mean, 10:12:06
5 they've -- I mean, this is a system that's proven 10:12:08
6 its reliability. 10:12:12
7 Q. Okay. And -- but just to confirm, 10:12:13
8 though, we still -- we don't have that explanation 10:12:14
9 in the report. You're providing that now, but URS 10:12:17
10 wouldn't have the benefit of that knowledge of how 10:12:21
11 you were going to modify this when they wrote their 10:12:23
12 report; correct? 10:12:25
13 A. We did not submit it. Those are 10:12:26
14 the press releases that are in many of the offshore 10:12:27
15 wind magazines, 2015 and 2016. So if they were 10:12:30
16 reading those, they could have had the benefit, but 10:12:34
17 we did not provide them. 10:12:37
18 Q. Now, I just have one last topic 10:12:38
19 I want to explore with you and that's the offshore 10:12:40
20 substation that could possibly be employed for the 10:12:42
21 project, and I'm not sure we are aware, but if 10:12:45
22 you're not, we can turn to page 34 of the second 10:12:47
23 Sgurr report. 10:12:50
24 A. I was going to say, I can try to 10:12:51
25 answer these, but the substation was outside the 10:12:52

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1 wouldn't use an offshore type of foundation, but if 10:13:42
2 you go back to my presentation, one of the things 10:13:46
3 that we've done, very early on, but I showed the 10:13:48
4 example of it the Nysted project, and right next to 10:13:52
5 that is an offshore substation. So there would be 10:13:56
6 a few additional calculations, but the offshore 10:13:58
7 substation, you use the same foundation as the 10:14:01
8 turbines in that particular case. 10:14:04
9 Q. In that case? 10:14:05
10 A. So it may be possible to re-use 10:14:06
11 the turbine foundations. 10:14:08
12 Q. Okay. Again, possible, but we 10:14:10
13 haven't done the design work for this project? 10:14:11
14 A. No, based on the scope of design 10:14:13
15 at which Windstream was proceeded, that work would 10:14:14
16 not have been done yet. 10:14:17
17 MS. SQUIRES: Give me one second and 10:14:19
18 I'll check with my colleagues. 10:14:20
19 Those are all my questions, 10:14:53
20 Mr. Cooper. 10:14:55
21 THE WITNESS: Thank you. 10:14:56
22 PRESIDENT: Thank you, Ms. Squires. 10:14:56
23 Any question in redirect? 10:14:59
24 MS. SEERS: We do, Mr. Chair. If 10:15:01
25 I could ask for the Tribunal's indulgence of a few 10:15:03

1 minutes to get it together. 10:15:04
2 PRESIDENT: Five minutes. 10:15:07
3 --- Recess taken at 10:15 a m. 10:15:13
4 --- Upon resuming at 10:20 a m. 10:15:13
5 PRESIDENT: Let's go on. 10:20:24
6 BY MS. SEERS: 10:20:25
7 Q. Thank you, Mr. President. As 10:20:25
8 I indicated to Ms. Nettleton, we're ready to proceed 10:20:25
9 with most of my questions. My colleagues are simply 10:20:29
10 researching one minor point and hopefully the answer 10:20:31
11 will arrive before we reach the end of the question. 10:20:37
12 PRESIDENT: We will take it in stride, 10:20:41
13 then. 10:20:42
14 MS. SEERS: We will. 10:20:43
15 RE-EXAMINATION BY MS. SEERS: 10:20:43
16 Q. Mr. Cooper, you will recall that 10:20:43
17 Ms. Squires asked you questions about the Thornton 10:20:44
18 Bank project. 10:20:47
19 A. Yes, she did. 10:20:47
20 Q. And she took you to various dates 10:20:52
21 regarding it. Just to be clear for the record, are 10:20:52
22 you aware of when the Thornton Bank project was 10:20:54
23 commissioned and when its foundations would have 10:20:57
24 been designed in that process? 10:20:59
25 A. It would have been approximately 10:21:01

1 like this doesn't occur until just before 10:22:22
2 construction. Normally at that point, the developer 10:22:25
3 has -- has already selected a contractor, the 10:22:27
4 preliminary design is in place, and that final 10:22:30
5 design is only completed. Certainly less than 10:22:35
6 a year but within a few months of actual 10:22:37
7 construction. 10:22:39
8 Q. You recall that Ms. Squires asked 10:22:46
9 you questions about the proposed fabrication 10:22:48
10 facility at St. Mary's Cement and you gave answers 10:22:48
11 about the options that were available at that 10:22:54
12 facility. 10:22:55
13 Could you give greater context to the 10:22:56
14 various options that would have been available, more 10:22:58
15 generally, for fabrication of the foundations? 10:23:01
16 A. Yeah, so we -- we identified 10:23:03
17 a number of sites in Hamilton and Toronto in -- that 10:23:05
18 site in Bowmanville, in -- in Pickering, in -- and 10:23:10
19 either way, there were a number of un-developed land 10:23:17
20 parcels that we found simply by aerial image that 10:23:20
21 appeared to have good water access and a significant 10:23:25
22 amount of upland area available for the assembly 10:23:28
23 or -- or for the -- the fabrication facility. So 10:23:30
24 they -- those -- you know, the exactly out would 10:23:35
25 depend on the number of turbines you needed to 10:23:40

1 2008. 10:21:02
2 Q. Okay. Thank you. You'll recall 10:21:03
3 that Ms. Squires asked you questions about the 10:21:09
4 source of your information regarding the lakebed. 10:21:11
5 You mentioned during your presentation your 10:21:15
6 involvement with various projects in the general 10:21:18
7 area, and so I guess if -- if you could clarify 10:21:20
8 whether you have any other sources of knowledge 10:21:25
9 about the project area from -- from those 10:21:27
10 projects -- from your involvement in those other 10:21:30
11 projects? 10:21:32
12 A. The -- most of our information, 10:21:33
13 like I said, was -- was derived from information 10:21:35
14 provided by Sgurr in a series of reports, and -- and 10:21:39
15 I -- I don't remember specifically which they were. 10:21:44
16 Q. Okay. You'll recall that 10:21:46
17 Ms. Squires asked you questions about the level of 10:21:52
18 design work conducted in your report. In this, 10:21:54
19 but-for scenario in which we're operating where 10:21:58
20 we're assuming that the -- the moratorium did not 10:22:01
21 occur and that your report is about what would more 10:22:03
22 likely than not have occurred in that scenario, 10:22:08
23 where in the project cycle would the detailed design 10:22:10
24 work that Ms. Squires referred you to have occurred? 10:22:13
25 A. Detailed design work on a project 10:22:20

1 create. They would addendum on the -- the layout of 10:23:42
2 the site, but it's -- it's a -- it's a flexible 10:23:45
3 process. 10:23:47
4 Q. Thank you. 10:23:49
5 You'll recall that Ms. Squires asked 10:23:50
6 you questions about locating turbines within 10:23:51
7 a particular channel located at the -- at the 10:23:54
8 project site. 10:23:57
9 Could you provide some context as to 10:23:59
10 the design work that would have been done had the 10:24:01
11 project been permitted to proceed in regards to the 10:24:04
12 siting of turbines within that particular area of 10:24:07
13 the project? 10:24:10
14 A. Yeah. So as I started to allude 10:24:10
15 to, within the project there's normally a huge 10:24:12
16 number of iterations of the actual turbine layout, 10:24:18
17 once within the overall project site. And it starts 10:24:20
18 with generally a pure wind resource assessment and 10:24:23
19 a very regular uniform grid. Once that's 10:24:27
20 established, you start looking at the technical 10:24:32
21 merits of the foundation. So that's some of the 10:24:34
22 cabling issues, length of cable, where the cable has 10:24:36
23 to go, you know, some other things we weren't -- we 10:24:39
24 get input from other partners on. But all of these 10:24:41
25 different things are considered and if there are 10:24:44

1 particular turbine locations that are challenging, 10:24:46
2 the project site is reoriented, either so that it's 10:24:49
3 within the constraints of the technology that's 10:24:54
4 chosen or for constructibility purposes. 10:24:57
5 It could be as simple as going from 10:24:59
6 a square grid pattern to a diamonds grid pattern, 10:25:01
7 relocating turbines from deeper areas to shallower 10:25:04
8 areas or very shallow areas to deeper areas. It's 10:25:09
9 all part of the natural iteration. 10:25:14
10 Even at a 30 percent design, it would 10:25:17
11 be to say there's over 20 iterations of the micro 10:25:17
12 siting layout. So that's certainly something that 10:25:20
13 would have continued to be done and refined as the 10:25:23
14 project developed. 10:25:25
15 Q. And you referred just now to 10:25:26
16 "micro siting layout." Could you provide greater 10:25:27
17 context as to what that is and when that occurs in 10:25:30
18 the development cycle? 10:25:33
19 A. Sorry. So, yes, the micro 10:25:34
20 siting -- there's the project siting, which is the 10:25:36
21 overall boundary of the project, and that has to do 10:25:38
22 with the -- the property rights and the land that's 10:25:44
23 leased and other things that we don't normally see. 10:25:46
24 By the time it gets to us, we just get an overall 10:25:48
25 boundary and say stay within sight of this. But 10:25:51

1 first of all, our design was based on one and a half 10:26:53
2 metres of loose surface sediments. And it may be 10:26:56
3 necessary to excavate additional sediment, if that 10:27:00
4 is loose sediment, but the -- the geologic history 10:27:03
5 of Lake Ontario, and especially in that area, is 10:27:08
6 competent sediments. So if they're loose nature, 10:27:11
7 they may need to be excavated. If they're more 10:27:16
8 competent sediments, they could even remain in 10:27:19
9 place. 10:27:22
10 That characterisation that would be 10:27:23
11 done, again, with further levels of development that 10:27:24
12 Windstream had not progressed to, but the other 10:27:29
13 thing to remember too, is that that dredging, that's 10:27:31
14 a normal process that's done in the Great Lakes. 10:27:34
15 It's the same type of operation that is done in 10:27:36
16 marinas, in navigation channels. It's 10:27:38
17 a well-understood process. It is not a time and 10:27:41
18 labour intensive process and if there were risks and 10:27:45
19 sudden additional volumes which -- those volumes 10:27:48
20 would be calculated and confirmed before you got to 10:27:52
21 construction, but if there were more, it would be 10:27:54
22 a matter of bringing in another dredger, and that's 10:27:57
23 certainly not a vessel with -- with limited 10:27:59
24 availability. They're commonly available. 10:28:01
25 MS. SEERS: Okay, let me just have 10:28:03

1 then the micro siting is the actual location of each 10:25:54
2 turbine within the project, so -- then even when 10:25:57
3 there's a certain grid system, it may be that 10:25:59
4 there's an obstruction on the sea floor and 10:26:02
5 a particular turbine needs to move 10 metres in 10:26:05
6 a certain direction to avoid that. But those type 10:26:08
7 of issues are -- are very common and normal. 10:26:11
8 Q. And those types of micro -- 10:26:13
9 A. And I'm sorry. Yeah, they -- and 10:26:15
10 that -- that type of issue would not be completed 10:26:15
11 until much later in the design. 10:26:17
12 That site information would have to be 10:26:21
13 gathered. You would have completed at least the 65 10:26:22
14 to 70 percent design of the foundations to better 10:26:25
15 understand the type of issues you're trying to site 10:26:28
16 around. 10:26:31
17 Q. Okay. You'll recall that 10:26:32
18 Ms. Squires asked you questions about 10:26:34
19 judging lakebed sediment and how that would impact 10:26:35
20 foundation installation. 10:26:39
21 I'd like to give you the opportunity 10:26:42
22 to expand, if you'd like on how judging issues are 10:26:43
23 typically handled in the normal course of foundation 10:26:47
24 installation? 10:26:49
25 A. Yeah, so the -- the -- you know, 10:26:50

1 a moment. I think my colleagues have found the 10:28:05
2 answer in question -- or the question, I'll just 10:28:07
3 confer with them for one moment, with your 10:28:09
4 indulgence? 10:28:11
5 PRESIDENT: Yes, of course. 10:28:12
6 [Counsel confer] 10:28:33
7 BY MS. SEERS: 10:29:34
8 Q. So, this will actually be simply 10:29:34
9 a point of clarification for the record regarding 10:29:37
10 Exhibit C-0514, which is Tab 6 of your binder, 10:29:40
11 Mr. Cooper. 10:29:46
12 I appreciate you say you didn't recall 10:29:47
13 looking at this document, and so this is simply to 10:29:49
14 clarify the record. Perhaps we can request Donnie's 10:29:50
15 assistance in pulling up page 2 of C-0514. 10:29:56
16 You will recall, Mr. Cooper, that 10:30:10
17 Ms. Squires asked you questions about this document 10:30:12
18 and suggested that the cable in question was not -- 10:30:15
19 or that the work in question had not been done in 10:30:19
20 connection with the project area. And I'll simply, 10:30:23
21 for the -- for the record -- 10:30:25
22 MS. SQUIRES: Sorry, Ms. Seers, 10:30:30
23 I don't mean to interrupt, but I was talking about 10:30:31
24 the previous at Tab 5 was the one that covered only. 10:30:33
25 So it is C-015, not C-0514. 10:30:37

1 MS. SEERS: Okay. 10:30:44
2 MS. SQUIRES: So this -- the one that 10:30:46
3 you have in your hand is the one that I referred to 10:30:47
4 as the offshore wind farm and cable route survey, 10:30:49
5 but Tab 5 is simply the cable route survey. 10:30:49
6 MS. SEERS: I see. So this -- so for 10:30:54
7 the record then, I would simply note that this later 10:30:54
8 document, Tab 6, C-0514, says that -- in the first 10:30:57
9 paragraph that it was conducted to provide conduct 10:31:02
10 a geophysical survey for the proposed wind farm over 10:31:06
11 the Wolfe Island Shoals. Sorry if there was 10:31:11
12 confusion about that. 10:31:15
13 QUESTIONS BY THE TRIBUNAL: 10:31:16
14 PRESIDENT: Okay. Thank you, 10:31:16
15 Ms. Seers. 10:31:17
16 The Tribunal maybe has a couple of 10:31:18
17 questions. 10:31:23
18 If I could go back to your 10:31:23
19 presentation, Page 5, where you list some of your 10:31:24
20 prior design -- foundation design experience in 10:31:31
21 Europe starting with Vindeby. Can you tell us what 10:31:35
22 the -- in terms, what the water depth was in these 10:31:47
23 prior projects and the sediment depth, as well as 10:31:52
24 the slope and what kind of challenges you had? 10:32:02
25 THE WITNESS: I can tell you in some. 10:32:04

1 THE WITNESS: Well, the sediment 10:33:09
2 depth, I mean, that's sand that's -- I don't know 10:33:11
3 the number. I'm sorry. 10:33:12
4 PRESIDENT: Okay. 10:33:15
5 DR. CREMADES: Probably you are not 10:33:23
6 the person to answer that and that's the reason why 10:33:25
7 I put to you the question. Most of the projects we 10:33:28
8 see in your page 7, especially, and in your page 6, 10:33:32
9 are not dealing with drinking water. 10:33:37
10 I mean, what is the impact of the 10:33:43
11 construction you are projecting into the sediments 10:33:49
12 which might have an impact into the drinking water, 10:33:52
13 who was the reason for the moratorium officially? 10:33:57
14 THE WITNESS: There's only -- I have 10:33:59
15 to admit this is a little bit out of my comfort 10:34:01
16 zone, but I -- I can offer one piece of testimony to 10:34:05
17 that. Specifically with the -- well, two. 10:34:08
18 The New York Power Authority 10:34:11
19 Freshwater Winds project was located in Lake Erie, 10:34:13
20 and that was just offshore of Buffalo, and that 10:34:16
21 issue did not come up. 10:34:21
22 That issue it come up with the LEEDCo 10:34:22
23 project. That project is located within a few miles 10:34:24
24 of the major water intake for the City of Cleveland. 10:34:27
25 I have not studied those reports in 10:34:31

1 You know, these are corporate knowledge. I've had 10:32:05
2 involvement with a few of these, but not -- 10:32:10
3 certainly not all -- 10:32:12
4 PRESIDENT: The ones that you know 10:32:13
5 about directly. 10:32:14
6 THE WITNESS: In terms of water depth, 10:32:14
7 I know that Nysted and Rodsand were -- were fairly 10:32:18
8 shallow. They were generally 3 to 12, maybe 10:32:22
9 15 metres. The Wiking and Merkur I'm not sure of. 10:32:24
10 Thornton Bank was done in up to 27 10:32:31
11 metres. I know the surficial sediments, the 10:32:33
12 excavation was low, but there was some. I don't 10:32:35
13 know the actual -- the actual amount. 10:32:36
14 The most interesting response to that, 10:32:37
15 though, is the London Array project and the 10:32:39
16 monopile. There's actually a phenomenon there 10:32:42
17 called sand waves, and it's basically offshore dunes 10:32:46
18 that migrate due to the wave energy. 10:32:51
19 So they actually have to endure 10:32:54
20 a phenomenon where the seabed level might change by 10:32:56
21 as much as 3 metres as these sand waves migrate 10:32:59
22 across the project site. 10:33:03
23 That was a particularly challenging 10:33:05
24 design. 10:33:06
25 PRESIDENT: And the sediment depth? 10:33:07

1 detail, but my understanding that what's come out of 10:34:33
2 them is the amount of construction impacts. And 10:34:36
3 LEEDCo involved significantly more bottom 10:34:40
4 preparation because they have far more challenging 10:34:42
5 soil conditions than Windstream does. But what 10:34:46
6 I was told and what I got out of that report was 10:34:48
7 that the amount of bottom disturbance and sediment, 10:34:50
8 suspension in the water was less than an average 10:34:54
9 autumn thunderstorm. 10:34:57
10 DR. CREMADES: Thank you. 10:35:01
11 PRESIDENT: Thank you very much, 10:35:03
12 Mr. Cooper. That concludes your examination. Thank 10:35:04
13 you for your time. 10:35:06
14 THE WITNESS: Thank you. 10:35:08
15 I suggest we have the morning break 10:35:11
16 now and continue at 10:50. Thank you. 10:35:13
17 --- Recess taken at 10:35 a.m. 10:35:17
18 --- Upon resuming at 10:54 a.m. 10:35:18
19 PRESIDENT: All set from the Claimant 10:54:15
20 side and also the Respondent? Good morning, 10:54:16
21 Mr. Palmer. 10:54:21
22 THE WITNESS: Good morning. 10:54:21
23 PRESIDENT: Could I please ask you to 10:54:22
24 state your full name for the record and then read 10:54:22
25 the -- the expert declaration that you have over 10:54:22

1 there on the table in front of you? 10:54:22
2 THE WITNESS: My name is Richard Paul 10:54:37
3 Palmer. I solemnly declare upon my honour and 10:54:37
4 conscience that my evidence and my opinions will be 10:54:37
5 in accordance with my sincere belief. 10:54:39
6 AFFIRMED: RICHARD PAUL PALMER 10:54:41
7 PRESIDENT: Thank you very much, 10:54:47
8 Mr. Palmer. We understand you are the person 10:54:47
9 responsible or at least the person to defend the 10:54:52
10 May 2014 report submitted in this arbitration by 10:54:56
11 Weeks Marine, Inc. 10:55:01
12 THE WITNESS: That's correct. 10:55:07
13 PRESIDENT: And I have learned my 10:55:08
14 lesson. I understand the annex or Appendix 3 to the 10:55:09
15 Sgurr report is also considered a separate report 10:55:13
16 that you will defend also. 10:55:15
17 THE WITNESS: I'm unfamiliar what it's 10:55:17
18 called in the Sgurr report, but if it's this little 10:55:19
19 few pages here, yes, that's true. 10:55:22
20 PRESIDENT: Appendix 3, which is 10:55:23
21 called Weeks McNally Marine Summary Report. 10:55:24
22 THE WITNESS: That's correct. 10:55:28
23 PRESIDENT: Okay. Very good. The way 10:55:29
24 it will work now -- well, that's the question. 10:55:31
25 Do you have any questions on direct in 10:55:34

1 I started my career with Healy 10:56:24
2 Tibbitts Builders, one of the Weeks Marine's 10:56:25
3 subsidiaries out in Hawaii in 1992. 10:56:27
4 I have a BS in Agricultural 10:56:29
5 Engineering from Cornell University, 1985, and 10:56:32
6 a Masters of Science and Civil Engineering from 10:56:34
7 Texas A & M University in 1988. 10:56:38
8 I'm currently the project director and 10:56:42
9 the on-site project manager of the foundation 10:56:44
10 installation contract for Weeks Marine and Manson 10:56:46
11 Construction to install the jacket foundations at 10:56:51
12 Deepwater Winds, Block Island offshore wind farm. 10:56:54
13 That was work that we did this past year, 2015, off 10:56:58
14 the coast of Rhode Island. 10:57:03
15 Previous to that, for almost the 10:57:05
16 entirety of 2013 and 2014, I was the project 10:57:07
17 director of the offshore installation contract that 10:57:09
18 was awarded to Weeks Marine and Manson Construction 10:57:13
19 for the Cape Wind offshore project in an Nantucket 10:57:16
20 Sound, Massachusetts. I worked full time on that, 10:57:18
21 living up in Boston, helping to finish the 10:57:23
22 development of that project. 10:57:25
23 In addition to Block Island and Cape 10:57:27
24 Wind, I've spent a lot of effort helping, assisting 10:57:28
25 the development of offshore wind and construction in 10:57:34

1 addition to the presentation? 10:55:35
2 MS SEERS: I will have one question 10:55:37
3 in direct after the presentation 10:55:38
4 PRESIDENT: After the presentation 10:55:43
5 MS SEERS: You set the pattern 10:55:44
6 PRESIDENT: Very good 10:55:45
7 So I understand that you have prepared 10:55:46
8 a presentation for us 10:55:47
9 THE WITNESS: That's correct 10:55:48
10 PRESIDENT: So please go ahead, 10:55:50
11 Mr Palmer 10:55:52
12 PRESENTATION BY RICHARD PAUL PALMER, WEEKS MARINE, 10:55:52
13 INC 10:55:52
14 THE WITNESS: Okay, my name is Richard 10:55:54
15 P Palmer I am vice-president of Weeks Marine 10:55:55
16 I've been the vice-president of Weeks Marine since 10:55:59
17 2009 10:56:01
18 I am the offshore wind and marine 10:56:02
19 renewable energy lead for Weeks Marine's 10:56:05
20 construction division I've acted in that capacity 10:56:08
21 since 2008 10:56:11
22 I have 27 years of domestic and 10:56:12
23 international experience in project management and 10:56:15
24 engineering, and including more 23 years in the 10:56:19
25 marine construction industry 10:56:22

1 the United States and Canada since 2003. 10:57:36
2 I've spent a significant amount of 10:57:39
3 effort on the Fishermans' Energy Atlantic City 10:57:41
4 Offshore Wind Project. Also assisted in NYPA's 10:57:45
5 Great Lakes Offshore Wind RFP, LEEDCo's Ice Breaker 10:57:48
6 Project and the previous iterations of that project 10:57:52
7 in Cleveland, Ohio. I assisted VOWTAP, the Dominion 10:57:55
8 Project off the coast of Virginia, US Wind off of 10:57:58
9 Maryland, Bluewater Wind in New Jersey and Delaware, 10:58:00
10 Duke Energy down in Pamlico Sound, North 10:58:03
11 Carolina. Also worked with Gamesa when they were 10:58:05
12 attempting to install a test turbine off of Cape 10:58:09
13 Charles, Virginia. 10:58:12
14 I've done an awful lot of work in 10:58:14
15 offshore wind over the past decade. 10:58:17
16 Weeks Marine, the company that I work 10:58:19
17 for, is a private family-owned company. It was 10:58:20
18 founded in 1919 in the port of New York. 10:58:23
19 In 2015 we were ranked 108th on the 10:58:26
20 ENR "Top 400 Contractors" list with more than 10:58:30
21 \$600 million, U.S. dollars in annual revenue. And 10:58:34
22 Weeks Marine is considered one of the largest and 10:58:38
23 most diversified marine contractors in North 10:58:40
24 America. 10:58:44
25 We're composed of three divisions: 10:58:45

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1 Construction, dredging and marine services. 10:58:48
2 Both construction and dredging really 10:58:53
3 are the backbone of our companies. We like dredging 10:58:54
4 quite a bit, in addition to construction. 10:58:57
5 We also have two wholly-owned 10:58:59
6 subsidiaries. One is McNally International or 10:59:01
7 sometimes it's referred to McNally Construction. 10:59:03
8 That's based in Hamilton, Ontario, right here just 10:59:07
9 down the lake, and also Healy Tibbitts Builders, 10:59:09
10 which is based in Honolulu, Hawaii. 10:59:12
11 We work all over the place North and 10:59:17
12 even South America and out into the south Pacific. 10:59:20
13 Our McNally subsidiary has done a lot 10:59:23
14 of work in Ontario and other provinces in 10:59:25
15 Canada, including extensive work here on Lake 10:59:28
16 Ontario. 10:59:30
17 Our construction division builds 10:59:34
18 marine projects of all kind, including offshore wind 10:59:36
19 turbine foundations, tunnels. We are currently 10:59:39
20 involved in a very large concrete tunnel project 10:59:41
21 town in Norfolk, Virginia. We do bridges. We do 10:59:44
22 LNG and petroleum terminals. We do wharfs, piers, 10:59:49
23 marine pipeline, all standard marine construction 10:59:54
24 work. 10:59:56
25 Our dredging division performs 10:59:56

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1 Just here off of Toronto, they 11:01:05
2 installed the Enwave cooling water intake to allow 11:01:07
3 cool water to be brought into Toronto to help 11:01:11
4 air-condition the city. 11:01:14
5 They've done a lot of dredging. 11:01:15
6 Including Burlington ship channel in Hamilton, 11:01:18
7 Ontario, and have done put in some additional water 11:01:21
8 intakes, like the Ajax raw water intake in Ajax 11:01:22
9 Ontario. 11:01:26
10 McNally also has some very unique and 11:01:26
11 significant experience casting and installing large 11:01:27
12 floating concrete caissons for wharfing and pier 11:01:32
13 structures here in Canada, and these caissons are 11:01:35
14 similar in material, certainly, and size to the 11:01:39
15 gravity-based foundation that would be used on the 11:01:44
16 offshore -- Wolfe Island's wind offshore project. 11:01:45
17 Weeks Marine Group companies in total 11:01:52
18 has more than 1,500 employees in U.S. and Canada. 11:01:52
19 We work for private developers, federal, state and 11:01:55
20 local agencies and industrial clients. 11:01:58
21 We specialize in EPC, design build and 11:01:59
22 bid/build contracting. The majority of our projects 11:02:03
23 are lump-sum, fixed price contracts where we take 11:02:08
24 the entirety of the construction risk. 11:02:11
25 Our inventory of marine construction 11:02:14

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1 maintenance and new work dredging for ports and 10:59:56
2 harbours, coastland and inland waterways, land 11:00:03
3 reclamation, wetland reclamation, beach 11:00:06
4 renourishment. 11:00:10
5 We are the largest dredgers in North 11:00:12
6 America. We have an extensive fleet of dredging 11:00:14
7 equipment. So this is just one of the many things 11:00:17
8 that we do. 11:00:19
9 Our marine services division does some 11:00:20
10 pretty unique stuff. Heavy lifts, we -- people need 11:00:22
11 a space shuttle picked up, we pick up a space 11:00:25
12 shuttle. We do stevedoring. We do towing. We do 11:00:29
13 some very specialized marine transportation at 11:00:30
14 times, and we have a lot of equipment we have 11:00:36
15 available for charter. 11:00:38
16 McNally International, our subsidiary 11:00:40
17 that we own here that's based in Ontario, was 11:00:41
18 established in 1949 and was wholly-owned by 11:00:43
19 Weeks Marine since 2011. 11:00:46
20 It specializes in tunnelling and 11:00:48
21 marine construction and has completed multiple 11:00:50
22 marine projects in Ontario, including, I believe, 11:00:55
23 back in 2008, the Wolfe Island on-shore wind project 11:00:57
24 cabling crossing and structures in Kingston, 11:01:01
25 Ontario. We were involved in that project. 11:01:03

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1 and dredging vessels is one of the largest in North 11:02:15
2 America and we currently own numbers over 500 barges 11:02:18
3 and boats. 11:02:22
4 We often seek out beneficial 11:02:22
5 partnerships. As I already explained, we are 11:02:24
6 working with Manson Construction on the Block Island 11:02:27
7 wind farm in Rhode Island. We worked with them on 11:02:29
8 Cape Wind, but we also -- for other large 11:02:31
9 infrastructure projects, we seek out partners. 11:02:35
10 We're currently completing a 1.5 billion dollar 11:02:37
11 midtown tunnel project with Skanska and Kiewit in 11:02:37
12 Norfolk, Virginia, and we're working on a \$1 billion 11:02:44
13 Goethals Bridge project that's in Elizabeth, New 11:02:46
14 Jersey over the Staten Island with Kiewit and 11:02:46
15 Massman Construction. 11:02:48
16 Now, the Wolfe Island Shoals wind 11:02:51
17 project, our association with that project, my 11:02:56
18 specific association with that project began in 11:02:59
19 2010, very shortly after the -- I think the first 11:03:01
20 press release came out in April of 2010 saying that 11:03:05
21 the Wolfe Island Shoals have been awarded a FIT 11:03:07
22 contract by the Province of Ontario. We had 11:03:11
23 preliminary discussions with Windstream in that 11:03:14
24 summer, July and August of 2010 and we met 11:03:16
25 face-to-face with Ian Baines and others at ORTECH in 11:03:20

1 September of 2010 to discuss the project and the 11:03:26
2 potential assistant that Weeks and our partners in 11:03:29
3 offshore wind at that time which were Kiewit 11:03:33
4 Construction and GOC, which was a European offshore 11:03:34
5 wind contractor, the assistance that we can provide 11:03:40
6 for pre-construction planning and development 11:03:42
7 assistance. 11:03:45
8 In that meeting, I recall we talked 11:03:46
9 a bit about local content because that was a concern 11:03:47
10 at the time. We also felt that because of the 11:03:50
11 nature of the project and what we knew about Lake 11:03:54
12 Ontario and the eastern end of Lake Ontario, we 11:03:56
13 thought that concrete foundations would actually be 11:03:58
14 a very viable type of foundation to pursue for the 11:04:00
15 project. 11:04:03
16 We also strongly believed that the Wolfe 11:04:04
17 Island Shoals project would be the first offshore 11:04:06
18 wind project constructed in North America. It would 11:04:08
19 be ahead of Cape Wind, which we were also working 11:04:11
20 and on, and other projects in the U.S. because of 11:04:14
21 the revenue certainty that was guaranteed by the FIT 11:04:16
22 contract. Revenue certainty is a big topic in 11:04:19
23 offshore wind, and we saw the FIT contract in giving 11:04:22
24 Windstream and the Wolfe Island Shoals project a leg 11:04:25
25 up on every other project that was there in the 11:04:27

1 feasibility and the schedule for construction of 11:05:42
2 a Wolfe Island Shoals project based on a plan using 11:05:45
3 130 gravity-based foundation and Siemens 2.3 11:05:48
4 megawatts turbines. We were to assume that the 11:05:55
5 project was restarted almost immediately in 2011, 11:05:58
6 after the wind moratorium would have been lifted, 11:05:59
7 and so as I think you've already heard, we worked 11:06:02
8 with COWI and SgurrEnergy to develop the 11:06:05
9 construction methodology. 11:06:08
10 We prepared our plan following our 11:06:09
11 standard process that would be used many. Many 11:06:12
12 times of analysing each required work activity in 11:06:15
13 detail that was going to be needed for the 11:06:17
14 construction of the project and basing our 11:06:20
15 construction schedule on the production rates 11:06:21
16 derived from that analysis. 11:06:24
17 Our analysis was prepared with the 11:06:26
18 same care and the risk assumptions that we've used 11:06:28
19 and have used for multiple other offshore wind 11:06:33
20 projects over the past decade. 11:06:35
21 What we found was that the offshore 11:06:39
22 marine construction portion of the work is 11:06:41
23 imminently feasible and we felt it would require and 11:06:44
24 believe it would acquire just two construction 11:06:46
25 seasons in the water to complete. 11:06:47

1 market at that time. 11:04:29
2 We began, actually, the design of 11:04:32
3 a specialized jack-up barge in late 2010, 11:04:34
4 specifically adapted to transit the St. Lawrence 11:04:38
5 canal -- or St. Lawrence Seaway, I apologize, the 11:04:41
6 St. Lawrence Seaway, with a vessel width at 11:04:43
7 23.8 metres or 70 feet. That vessel was later named 11:04:46
8 the following year the R.D. McDonald. 11:04:50
9 The hull was constructed and launched 11:04:53
10 in June of 2012 out of BAE Shipyards in Jacksonville 11:04:55
11 Florida. 11:05:00
12 And honestly, we began the 11:05:01
13 construction of the R.D. McDonald specifically 11:05:03
14 thinking about the Wolfe Island Shoals project. 11:05:07
15 It was critical in our decision-making 11:05:11
16 to say, let's proceed with building a jack-up vessel 11:05:13
17 for the burgeoning and glowing offshore wind market 11:05:16
18 in North America. 11:05:20
19 Now, in 2013, we obviously knew about 11:05:23
20 the moratorium that was placed in February of 2011 11:05:25
21 which certainly changed the plans for how things 11:05:28
22 would progress with Wolfe Island Shoals, but we 11:05:31
23 continued in working in offshore wind, still a big 11:05:33
24 market here to work on, but in the fall of 2013 we 11:05:37
25 were approached and requested to review the 11:05:39

1 We did not assume that marine work 11:06:49
2 would occur on the project site between mid-November 11:06:51
3 and the end of March. Working on Lake Ontario in 11:06:55
4 the winter is nothing that we really want to sign up 11:06:58
5 for, although we did expect that if our work over 11:07:00
6 the first season had to -- had issues, had delays, 11:07:04
7 that we could probably extend into December without 11:07:08
8 any issue, that ice would not be a major concern and 11:07:11
9 we could push ourselves into December to make up and 11:07:14
10 recapture some of the float we needed in our the 11:07:16
11 schedule. 11:07:18
12 And we see that the key to achieving 11:07:19
13 that the project schedule is to mobilise a fleet of 11:07:21
14 vessels to construct the project, and to be working 11:07:24
15 at several foundation locations at any one given 11:07:27
16 time with that fleet of vessels. 11:07:30
17 In many of our construction projects 11:07:32
18 the availability of the equipment fleet is critical 11:07:34
19 to reducing the risk on the project. 11:07:37
20 If you have a lot of tools in your 11:07:39
21 tool bag, it's much easier to get a project done 11:07:40
22 because you're not counting on just one specific 11:07:43
23 piece of equipment to complete the project. 11:07:46
24 And what we found here, you know, the 11:07:48
25 advantage of this foundation design of this system 11:07:51

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1 that was being proposed is that almost every work 11:07:54
2 activity that was needed to install these 11:07:57
3 foundations could be completed with kind of 11:07:59
4 standard, typical marine construction vessels and 11:08:01
5 barges that already existed in the Canadian market 11:08:05
6 and existed in the US market, that didn't require 11:08:07
7 a specialized heavy lift vessel, that didn't require 11:08:12
8 unique vessels that would potentially be difficult 11:08:15
9 to procure and bring to the project. 11:08:20
10 You know, the vessels that would be 11:08:23
11 required here were the vessels that we already have 11:08:25
12 in our fleet. 11:08:28
13 Now, certainly with any marine 11:08:29
14 project, the weather and the -- the sea conditions, 11:08:32
15 sea state conditions have a large impact on the 11:08:35
16 productivity that can be achieved. We reviewed the 11:08:37
17 wave data. We looked at buoy data that's publicly 11:08:39
18 available. We examined the conditions that we 11:08:44
19 expected. We talked with McNally and said, how is 11:08:48
20 it working in Lake Ontario? And the expected 11:08:51
21 conditions at the project site are certainly much 11:08:53
22 more benign than we needed to take into account on 11:08:56
23 our other offshore wind projects that are out in the 11:09:00
24 Atlantic. 11:09:03
25 Even so, we conservative assume that 11:09:04

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1 Also, certainly following the 11:10:15
2 foundation installation, the wind turbine generators 11:10:17
3 have to be erected utilising a stable crane on 11:10:21
4 a jack-up or a pinned installation vessel. 11:10:23
5 This is just a -- almost a given right 11:10:26
6 now in the offshore wind industry. I am unaware of 11:10:28
7 any -- any project that has been -- had the wind 11:10:31
8 turbines erected from a floating vessel. And so 11:10:34
9 it's well known that you need a very stable crane to 11:10:36
10 be able to accurately assemble the turbine 11:10:39
11 components. 11:10:43
12 As we -- I had already mentioned, we 11:10:45
13 had started the construction of the R.D. McDonald 11:10:46
14 jack-up in 2010, you know, started the design, and 11:10:50
15 the fabrication was -- steel was being bought in 11:10:52
16 February of 2011 for this vessel. We felt the 11:10:55
17 R.D. McDonald would have been a very suitable vessel 11:11:01
18 to install the wind turbines. 11:11:04
19 There's also many other vessels, not 11:11:05
20 an extensive list, but certainly existing. There 11:11:08
21 are existing turbine installation vessels and other 11:11:10
22 jack-ups that are capable of reaching Lake Ontario 11:11:14
23 that have a beam less than 23.8 metres, and those 11:11:15
24 existing vessels would also be a first choice to use 11:11:19
25 on the project. But they are not the only option 11:11:22

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1 our operations during our construction season would 11:09:08
2 be shut down 25 percent of the time due to weather 11:09:09
3 between April 1st and November 10th. We built that 11:09:12
4 into our construction the project schedule to say, 11:09:15
5 yeah, we know weather event happen, we know we're 11:09:17
6 going to be stopped, but we're going to take that 11:09:22
7 into account. 11:09:24
8 Equipment availability, again, always 11:09:25
9 a concern, but what we saw is because of the design 11:09:26
10 of the foundations and the semi-buoyant 11:09:30
11 gravity-based foundation that had been proposed, we 11:09:33
12 saw that in reality to -- to install that, the 11:09:36
13 supplemental flotation barges that were required to 11:09:39
14 support those foundations during transport and 11:09:42
15 lowering were actually pretty simple barges. 11:09:45
16 Nothing exotic about those. They're relatively 11:09:47
17 small in size and they could be easily designed and 11:09:51
18 fabricated and brought into Lake Ontario. 11:09:53
19 To aid the project schedule, we 11:09:55
20 planned to utilise four sets of these barges to 11:09:57
21 allow the foundation structures to be transported 11:10:00
22 and placed at a rate of every two and a half days. 11:10:03
23 And getting redundancy, in case there are issues, we 11:10:06
24 always had a lot of these barges in the mix so we 11:10:09
25 could be at various stages of the installation. 11:10:12

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1 available. 11:11:25
2 We almost always intend to use 11:11:26
3 existing vessels, particularly when we're pricing 11:11:27
4 work. We always like to think we're pricing the 11:11:31
5 work using an actual viable method. We don't want 11:11:34
6 to have be dreaming, making pie in the sky 11:11:38
7 assumptions, saying hey, they way we can build this 11:11:41
8 is this unique way. No. We want to use something 11:11:42
9 that's real. We want to make sure that we have 11:11:45
10 tried and proven ways to build a project and to 11:11:48
11 price out a project, because that's the only way we 11:11:51
12 can guarantee that we minimise our risk. 11:11:53
13 But, you know, for here, these vessels 11:11:55
14 are obviously a concern, but, you know, if the 11:11:57
15 vessels can't be found or constructed or contracted 11:12:00
16 or unsuitable for the project for various reasons, 11:12:03
17 in those situations, Weeks Marine typically does not 11:12:06
18 hesitate to construct the appropriate equipment or 11:12:12
19 vessel. And what you can see, we had already 11:12:14
20 started construction on the R.D. McDonald and as 11:12:15
21 an example, for the Cape Wind project, for that 11:12:18
22 project, we needed two additional wind turbine 11:12:21
23 component transport vessels to comply with the Johns 11:12:23
24 Act requirements of the Cape Wind project. 11:12:27
25 We started the construction of those 11:12:29

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1 two barges in the summer of 2014, months before Cape 11:12:31
2 Wind had ever expected to reach financial close. We 11:12:35
3 went ahead -- in addition to continuing our work on 11:12:38
4 the R.D. McDonald, we went ahead and got two 11:12:40
5 additional jack-up hulls into fabrication at Conrad 11:12:43
6 Industries so that we could have the vessels we 11:12:48
7 needed to build the Cape Wind project. So it's 11:12:50
8 nothing that's out of -- out of -- you know, it's 11:12:53
9 nothing that's uncommon for us to build vessels. 11:12:55
10 So in conclusion I just want to say 11:13:02
11 that we clearly recognise the risk that offshore 11:13:03
12 construction imposes on a project. And availability 11:13:06
13 of appropriate vessels is a critical aspect for any 11:13:08
14 marine project, and Weeks Marine has built over 30 11:13:12
15 new vessels in the past ten years as part of our 11:13:15
16 effort to ensure that we always have the right 11:13:17
17 vessels available for our work. 11:13:18
18 In addition to new builds, we also 11:13:21
19 retrofit and reconfigure existing vessels to meet 11:13:23
20 the needs for particular projects. It's just how we 11:13:26
21 do business. That's how what we to have to do. 11:13:29
22 The Wolfe Island Shoals project, as 11:13:32
23 proposed with the gravity-based foundation, we feel 11:13:34
24 it would have been able to capitalise on the 11:13:36
25 currently available Canadian and U.S. vessel fleet 11:13:38

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1 answered my question just now, so I don't need to 11:14:40
2 ask him. 11:14:43
3 PRESIDENT: Okay, good. 11:14:44
4 Shall we move straight to 11:14:45
5 cross-examination. 11:14:47
6 MS. SQUIRES: I just need one minute. 11:14:49
7 PRESIDENT: Sure. 11:14:50
8 CROSS-EXAMINATION BY MS. SQUIRES: 11:14:52
9 Q. Good morning, Mr. Palmer. 11:16:10
10 A. Hi. 11:16:10
11 Q. You probably have the advantage of 11:16:12
12 hearing the cross-examination of Mr. Cooper, but for 11:16:13
13 the sake of -- just for clarity, we'll run through 11:16:15
14 some housekeeping rules first. We'll do them fairly 11:16:18
15 quickly. 11:16:22
16 As you know, my name is Heather 11:16:23
17 Squires and I'm counsel for the Government of Canada 11:16:25
18 in these proceedings. 11:16:27
19 I'm going to ask you a few questions 11:16:28
20 about your report, so I can understand the 11:16:30
21 conclusions that you've submitted on behalf of the 11:16:32
22 Claimant. And I have to note, I am very interested 11:16:35
23 to learn about how you lift a spaceship, but perhaps 11:16:37
24 we'll have to save that for another time. 11:16:41
25 Now, if you don't understand 11:16:43

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1 to provide a stepping stone to a market that could 11:13:41
2 not otherwise be achieved. That's certainly one of 11:13:45
3 the -- the biggest hindrances we have in North 11:13:47
4 America is that we do not have the vessel fleet that 11:13:49
5 Europeans have. And this project gave us the 11:13:55
6 opportunity to use vessels that currently exist on 11:13:57
7 the market to construct the foundations. My 11:13:57
8 perspective, that is an incredible advantage that 11:14:01
9 this project had. 11:14:03
10 This project -- I just said that, I 11:14:05
11 guess. 11:14:05
12 This project, un-like many European 11:14:07
13 offshore wind energy projects can be built using 11:14:09
14 equipment that's available, can be readily procured, 11:14:12
15 purposely constructed for the task. 11:14:15
16 My opinion, in our opinion, based on 11:14:17
17 our construction experience in the marine 11:14:20
18 environment, the time-line we set out in the project 11:14:22
19 schedule is imminently achievable. There's nothing 11:14:24
20 a stretch here. We have the equipment, the vessels 11:14:27
21 are available. It absolutely could be built. 11:14:31
22 Thank you. 11:14:34
23 PRESIDENT: Thank you, Mr. Palmer. 11:14:35
24 Ms. Seers. 11:14:36
25 MS. SEERS: I believe Mr. Palmer 11:14:38

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1 a question I've asked, I'll be happy to rephrase it 11:16:45
2 for you. Just let me know and I can do that. 11:16:47
3 It's also important that to the extent 11:16:51
4 my question has a "yes" or "no" at the start of your 11:16:53
5 answer, to provide that for the record and then you 11:16:55
6 can give the appropriate context that you feel is 11:16:57
7 necessary. 11:16:59
8 As you know, the binders in front of 11:17:00
9 you -- and I'll be referring to the tab numbers -- 11:17:02
10 and we've done the same thing here that we did with 11:17:04
11 the COWI reports and provided both of your reports 11:17:07
12 at Tabs 3 and 4, just to make it easier for 11:17:10
13 reference. 11:17:13
14 We may need to go into confidential 11:17:13
15 session at some point during this. I'll let you 11:17:15
16 know. You don't need to concern yourself with it, 11:17:17
17 but there might be a time that we will have to break 11:17:20
18 the feed. So I will let you know. 11:17:22
19 A. Okay. 11:17:24
20 Q. Now, you've confirmed before that 11:17:25
21 you've submitted two reports or two documents in 11:17:27
22 support of the Sgurr report in this arbitration; 11:17:30
23 correct? 11:17:34
24 A. That is correct. 11:17:35
25 Q. And if we look at Page 7 of your 11:17:35

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1 first report, which is at Tab 3 in your binder -- 11:17:37
2 MR. BISHOP: Oh, same binder? 11:17:52
3 MS. SQUIRES: Same binder as before. 11:17:54
4 MR. BISHOP: Page -- 11:17:55
5 MS. SQUIRES: Page 7. Tab 3, page 7. 11:17:55
6 BY MS. SQUIRES: 11:18:00
7 Q. And I would like to have a look at 11:18:00
8 the paragraph right before the mobilization heading. 11:18:08
9 It starts with: 11:18:11
10 "SgurrEnergy has selected..." [As 11:18:13
11 read] 11:18:14
12 And you note there that you were. 11:18:14
13 "... retained by SgurrEnergy to 11:18:15
14 develop the offshore means and 11:18:16
15 methods plans for the WWIS 11:18:20
16 project." [As read] 11:18:21
17 Do you see that? 11:18:25
18 A. Yes. 11:18:25
19 Q. Now, you mentioned in your 11:18:26
20 presentation that you had discussions with 11:18:27
21 Windstream back in September of 2010, but you 11:18:29
22 weren't retained to work with them until 2014; 11:18:31
23 correct? 11:18:34
24 A. 2013. Yes. 11:18:36
25 Q. 2013. Okay. So then you were 11:18:37

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1 A. As I understand it, those 11:19:40
2 foundations weren't defined, so we did not provide 11:19:41
3 any means or methods to install those. 11:19:44
4 Q. Okay. So, let's have a look at 11:19:46
5 what you did provide then for those semi-floating 11:19:49
6 gravity-based foundation. 11:19:52
7 Now, we've already -- as I talked 11:19:54
8 about already with Mr. Cooper, that this method of 11:19:58
9 installation is to float them out as opposed to 11:20:00
10 lifting them onto something and lowering them into 11:20:03
11 the water; correct? 11:20:06
12 A. That's right. 11:20:07
13 Q. And the installation method that 11:20:08
14 you chose then in the plan to use the semi-floating 11:20:10
15 foundations was chosen largely because you agree 11:20:12
16 that those vessels needed to install regular 11:20:15
17 gravity-based foundation of a non-semi-floating 11:20:19
18 variety, have limited access in the Great Lakes; 11:20:21
19 correct? 11:20:23
20 A. Yeah, the types of vessels, like 11:20:24
21 the Rambiz which was used for Thornton Bank, is 11:20:26
22 a very large catamaran style "stiff leg." [phon.] 11:20:29
23 That vessel that could not be 11:20:34
24 transported through the seaway. We looked at stiff 11:20:36
25 legs also for the NYPA project over in Lake 11:20:40

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1 retained then for the purposes of this arbitration, 11:18:42
2 not to actually work on the project? 11:18:44
3 A. That's correct. 11:18:46
4 Q. Okay. Now, we'll turn to page 24 11:18:47
5 of your first report there at Tab 3. It's the last 11:18:50
6 page of your report, if that makes it easier. And 11:18:59
7 you note there that: 11:19:01
8 "The means and methods provided in 11:19:02
9 your report describe a viable and 11:19:04
10 comprehensive solution for the 11:19:09
11 installation of the WWIS as 11:19:11
12 currently scoped." [As read] 11:19:13
13 That's correct? 11:19:16
14 A. Yes. 11:19:16
15 Q. And "currently scoped" here then 11:19:16
16 refers to the use of the semi-floating gravity-based 11:19:17
17 foundation that I discussed with Mr. Cooper earlier 11:19:20
18 this morning, correct? 11:19:24
19 A. That's correct. 11:19:24
20 Q. Now, you've heard Mr. Cooper and 11:19:25
21 I discuss the possibility that other foundation 11:19:26
22 types may be required as the design and development 11:19:30
23 process continues. But you have not provided in 11:19:33
24 your report any means and methods of how those 11:19:35
25 foundations would be installed; correct? 11:19:38

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1 Erie and we found that that vessel didn't exist to 11:20:40
2 install large concrete foundations in Lake Erie and 11:20:44
3 it would would've had to have been constructed. 11:20:47
4 That was the benefit of the 11:20:49
5 semi-floating gravity -- the semi-buoyant prop 11:20:51
6 foundation is that you could install it with very 11:20:53
7 minimal marine equipment. 11:20:57
8 Q. So, you would agree with me then 11:20:59
9 to the extent that the foundations might change, 11:21:00
10 there could be an issue with obtaining the required 11:21:02
11 vessels to do that installation; correct? 11:21:05
12 A. There certainly potential would be 11:21:07
13 changes to the vessels required. Whether there 11:21:08
14 would be any difficulty to obtain them, I think we 11:21:11
15 would have been pushing to always have the vessel 11:21:14
16 needed to install to be a capable vessel that could 11:21:18
17 be brought into Lake Ontario. 11:21:22
18 Q. Right. Let's turn to the 11:21:27
19 foundation installation, the rate that you provided 11:21:29
20 in the schedule. And I want to turn to your first 11:21:34
21 report, so we'll stay at Tab 3 there and we're going 11:21:36
22 to turn to Page 17 in your binder. We're going to 11:21:39
23 look at the section there, we are discussing the 11:21:43
24 gravity-based foundation installation cycle plan; do 11:21:46
25 you follow where I am there? 11:21:50

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1 A. The table? Yeah. 11:21:51
2 Q. Yeah. In the last row of the 11:21:52
3 table there you noted: "Installation cycle of 11:21:55
4 approximately 6 days"; correct? 11:21:58
5 A. Correct. 11:22:00
6 Q. And if we go back to page 8 in 11:22:01
7 your report, and we look under the heading 11:22:03
8 "Supplemental flotation barges," you note that 11:22:13
9 the -- that the SBFs or the supplemental flotation 11:22:17
10 barges will consist of two sets of four specialized 11:22:20
11 sectional barges; do you see that? 11:22:22
12 It is under the heading "Supplemental 11:22:26
13 flotation barge." 11:22:29
14 A. Yes, I see where it says the SBF 11:22:30
15 will consist of two set of four specialized 11:22:33
16 sectional barges. 11:22:34
17 Q. Now, you alluded to this in your 11:22:38
18 presentation, but just for the sake of clarity, when 11:22:40
19 you make one of these specialized barges, you hook 11:22:42
20 together four smaller barges to make one barge; 11:22:46
21 correct? 11:22:49
22 A. That's correct. 11:22:50
23 Q. So when you say "Two sets of four 11:22:50
24 specialized barges," overall, you mean you have two 11:22:53
25 different installation barges that can be used? 11:22:56

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1 A. Quite honestly and I apologize for 11:22:59
2 this, but I believe this is a misstatement in this 11:23:00
3 particular section. I didn't realize it only said 11:23:04
4 two sets in this paragraph, but our intent was to 11:23:07
5 have four sets to install, not two sets. 11:23:09
6 Q. Okay. So -- all right. So the 11:23:11
7 first report says two sets even though the intention 11:23:13
8 was for -- you would agree with me then when URS did 11:23:16
9 their reply report to the report you provided and 11:23:21
10 they noted a problem with the two sets, that was 11:23:24
11 just -- that was referring to a typo and not 11:23:26
12 an error that URS themselves then made? 11:23:29
13 A. I can remember that. I don't know 11:23:34
14 what URS' response to this was, but if that was what 11:23:36
15 they said, I can agree. 11:23:40
16 Q. So, if we turn to page 60 of your 11:23:42
17 second report, which is at Tab 4. So we're -- 11:23:49
18 again, I'm referring to the SgurrEnergy numbering 11:23:57
19 here, but it's page 60. And I want to look at the 11:24:01
20 response to the URS report, Paragraphs 343 to 345. 11:24:04
21 That's discussion the foundation installation rate. 11:24:05
22 So you note there that with the four 11:24:13
23 installation barges in rotation and a 35 percent 11:24:14
24 weather and mechanical contingency, that's how you 11:24:16
25 get to the one installed every 2.5 days; correct? 11:24:18

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1 A. That's correct. 11:24:22
2 Q. Okay. Now, okay. Now, you 11:24:26
3 remember earlier in your report we discussed the 11:24:37
4 project as it was currently scoped; correct? 11:24:40
5 A. Yes. 11:24:44
6 Q. And as currently scoped for this 11:24:45
7 project, means relying on the use of the St. Mary's 11:24:47
8 cement facility in Bowmanville as the project 11:24:50
9 staging and fabrication site; correct? 11:24:56
10 A. That's correct. 11:24:58
11 Q. And if we look back at page 17 of 11:24:58
12 your first report at Tab 3, it's that table, again, 11:25:01
13 I believe. You note in that second column that 11:25:13
14 assumption of Bowmanville being used; correct? 11:25:17
15 A. Correct. 11:25:20
16 Q. And you note that it is 132 miles 11:25:21
17 from the project location? 11:25:23
18 A. That's what the table says. 11:25:23
19 Q. And with an average speed of 2 11:25:25
20 knots, this indicates that the tow to the project 11:25:27
21 site would take 58 hours; correct? 11:25:29
22 A. Yeah. 11:25:33
23 Q. Now, we've already -- we've 11:25:33
24 discussed and I've discussed this with Mr. Cooper. 11:25:35
25 Mr. Cooper has mentioned, sorry, in response to 11:25:38

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1 Ms. Seers' question, that the Bowmanville site 11:25:41
2 merely represents a representative gas facility, 11:25:45
3 and there are other locations on the Great Lakes 11:25:47
4 that can be explored; do you remember that? 11:25:49
5 A. Absolutely. 11:25:52
6 Q. If we turn to page 29 of the 11:25:53
7 second SgurrEnergy report. I don't know if you have 11:25:55
8 a copy in front of you but my assistant for the day, 11:25:57
9 Mr. Neufeld, will hand it up to you. 11:25:59
10 A. Page 29? 11:26:06
11 Q. We're going to go to page 29. 11:26:07
12 A. Okay. 11:26:16
13 Q. Now, they note on this page other 11:26:16
14 possible locations for that on-shore manufacturing 11:26:19
15 facility. They note them as: Oakville, Toronto, 11:26:22
16 Pickering, Oshawa, the list continues; do you see 11:26:26
17 where I am there? 11:26:31
18 A. Yes, I do. 11:26:32
19 Q. And if we go ahead to page 166 -- 11:26:33
20 A. Okay. 11:26:51
21 Q. -- and they identify there further 11:26:52
22 locations such as the Port of Hamilton; correct? 11:26:53
23 I believe Hamilton may be on the next page, on the 11:26:57
24 top of the next page, perhaps. 11:27:02
25 A. Yes, I see that. 11:27:07

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1 Q. All right. 11:27:08
2 MS. SQUIRES: Now, we're going to go 11:27:08
3 into confidential session for a bit. I'm just going 11:27:10
4 to ask Melissa or Darian, if you can confirm that 11:27:13
5 C-0552 is confidential? 11:27:18
6 MS. SEERS: Yes. 11:27:25
7 MS. SQUIRES: Okay. So we're going to 11:27:26
8 go into confidential session for a minute. 11:27:28
9 --- Confidential transcript begins 11:27:32
10 BY MS. SQUIRES 11:27:35
11 Q. You can turn to tab 19 in the 11:27:35
12 meantime. 11:27:39
13 A. Tab -- 11:27:40
14 Q. In your binder. 11:27:43
15 A. Tab 19. 11:27:44
16 Q. Yes. It's for all our Sunday 11:27:44
17 morning viewers out there. I'm going to cut them 11:27:53
18 off. 11:27:56
19 A. Okay. 11:27:56
20 Q. All right. So this is Exhibit 11:28:00
21 C-0552 for the record, and it's a document prepared 11:28:02
22 by Ortech entitled "Project description, Wolfe 11:28:06
23 Island Shoals offshore wind farm." 11:28:09
24 Do you see that? 11:28:12
25 A. Yes. 11:28:13

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1 four vessels would be used, yes, I would say you're 11:29:20
2 correct. I would have to say in our context that if 11:29:22
3 we had to come from a longer distance, we would just 11:29:25
4 add more barges to the fleet. 11:29:28
5 Q. Okay. So more resources, higher 11:29:30
6 cost. You would get it done in the same amount of 11:29:32
7 time? 11:29:34
8 A. I mean it would just -- obviously 11:29:34
9 a longer tow, more barges, it does add something to 11:29:36
10 the cost, but the key is getting the work done on 11:29:41
11 schedule on the project site and so you do what you 11:29:43
12 have to do to make sure you have the materials. 11:29:46
13 Q. Let's turn to page 19 of your 11:29:51
14 first report at Tab 3 in your binder. 11:29:53
15 A. Page 19? 11:30:06
16 Q. Page 19. Now, you note here that 11:30:07
17 the turbines will be installed using the 11:30:13
18 Weeks Marine R.D. McDonald jack-up vessel? 11:30:16
19 A. That's correct. 11:30:20
20 Q. And that's the only vessel 11:30:20
21 indicated in your first report; correct? 11:30:21
22 A. Yeah, the way the first report was 11:30:24
23 written, it only indicated the R.D. McDonald. 11:30:25
24 MS. SQUIRES: Now, we're going to come 11:30:28
25 out of confidential. 11:30:29

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1 Q. And if we turn to page 12, and we 11:28:13
2 look at Figure 1, you can see there some of the 11:28:15
3 locations that I just mentioned on this map? 11:28:19
4 A. Okay. 11:28:26
5 Q. Now, some of these locations are 11:28:27
6 much farther from the project site than Bowmanville 11:28:29
7 itself; correct? 11:28:32
8 A. Let's see, we've got -- 11:28:41
9 Q. So if we look, for example, at 11:28:46
10 Toronto or Hamilton, they're further away? 11:28:48
11 A. Yep. 11:28:50
12 Q. So to the extent some of these 11:28:51
13 locations are moved, then it will take more time to 11:28:52
14 move a foundation from the facility to the project 11:28:56
15 location; correct? 11:29:00
16 A. Yes. 11:29:00
17 Q. And some of these are substantial 11:29:01
18 distance away. The Port of Hamilton looks to be 11:29:03
19 double the distance? 11:29:06
20 A. Uh-hmm. 11:29:07
21 Q. So to the extent you use one of 11:29:08
22 these locations that are further away, assuming we 11:29:11
23 still have the four installation vessels, it will 11:29:14
24 take you longer to install the foundations; correct? 11:29:16
25 A. With your assumption that only 11:29:19

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1 --- Confidential transcript ends 11:30:31
2 BY MS. SQUIRES 11:30:44
3 Q. Let's turn to page 210 of the 11:30:44
4 second SgurrEnergy report, so that's the report that 11:30:46
5 was handed to you a minute ago by Mr. Neufeld. 11:30:48
6 A. Page 210? 11:30:52
7 Q. Page 210. We're going to look at 11:30:54
8 the Section there that deals were the response to 11:31:05
9 your paragraph 278 and SgurrEnergy notes there: 11:31:07
10 "The project execution strategy 11:31:13
11 and project schedule has always 11:31:14
12 assumed that a minimum of two 11:31:16
13 installation vessels will be 11:31:18
14 employed." [As read] 11:31:20
15 Do you see that? 11:31:21
16 A. Yes. 11:31:21
17 Q. So, even though in your first 11:31:23
18 report you only mention the one installation vessel 11:31:24
19 and URS prepared their report based on that, in 11:31:28
20 reality as SgurrEnergy mentioned, a second one was 11:31:31
21 supposed to be used? 11:31:34
22 A. Yeah, and I have to say that 11:31:35
23 I think in the context of how we wrote the first 11:31:37
24 report we were basically trying to identify the type 11:31:39
25 of barge that would be used to perform the work. 11:31:44

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1 I honestly believe that there was some 11:31:48
2 additional schedules, at least, that may not have 11:31:50
3 ever made it in, but I honestly can't remember. But 11:31:53
4 we certainly -- when we built our construction the 11:31:57
5 project schedule to erect the project, we made the 11:32:01
6 assumption that at least two units would be provided 11:32:03
7 to erect the turbines. 11:32:05
8 And so I don't disagree that maybe as 11:32:07
9 it got read when it got read that URS may have been 11:32:11
10 led to believe that only one turbine installation 11:32:15
11 vessel was used. 11:32:18
12 Q. So, further work in the 11:32:19
13 background, it was actually intended to be two, and 11:32:20
14 a that's the position that's maintained now in the 11:32:22
15 latest SgurrEnergy report? 11:32:26
16 A. Our arrangement in that first 11:32:28
17 report was basically to say here is a method. It 11:32:29
18 wasn't necessarily to go into the full detail of 11:32:32
19 exactly how many individual barges and everything. 11:32:34
20 I think we used the 571 for every 11:32:37
21 operation that we were doing out there, which is 11:32:40
22 obviously not how the actual project had to be 11:32:42
23 constructed. But, again, we identify the type of 11:32:44
24 vessel that would be used for each of the 11:32:47
25 operations. 11:32:49

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1 Q. Now, I want to turn to this 11:33:49
2 SgurrEnergy schedule that they had with their second 11:33:51
3 report, and I'm going to ask if Ms. Seers can again 11:33:54
4 hand up that giant piece of paper. 11:33:58
5 MS. SEERS: I believe that -- 11:34:00
6 MS. SQUIRES: There is one still 11:34:02
7 there. 11:34:03
8 MS. SEERS: -- the witness is -- 11:34:04
9 MS. SQUIRES: Thank you. 11:34:05
10 MS. SEERS: This will be the witness 11:34:06
11 schedule. 11:34:08
12 MS. SQUIRES: Perfect. Don't leave 11:34:08
13 notes then. 11:34:11
14 BY MS. SQUIRES 11:34:12
15 Q. We are going to look at line 389. 11:34:12
16 Now, if we look at that line, 389, it indicates that 11:34:32
17 installation of the turbines occurs within a single 11:34:36
18 season starting on April 6th, 2015, and finishing on 11:34:39
19 November 10th, 2015. 11:34:43
20 Do you follow where I am there? 11:34:44
21 A. Yeah. 11:34:47
22 Q. Now you built a 10 percent 11:34:47
23 mechanical contingency into the project schedule; is 11:34:51
24 that correct? 11:34:54
25 A. That's correct. 11:34:54

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1 Q. So, it replicated a preliminary 11:32:49
2 approach as to how you would do this eventually? 11:32:51
3 A. Yes. 11:32:54
4 Q. Now, let's turn to page 61 of your 11:32:55
5 second report, so that's at Tab 4 of the binder. 11:32:59
6 We're going to have a look at the last paragraph of 11:33:11
7 that page. 11:33:13
8 And here you note that: 11:33:14
9 "The St. Lawrence Seaway locks 11:33:16
10 pose a challenge to bring the 11:33:19
11 majority of turbine installation 11:33:20
12 vessels that operate in Europe 11:33:21
13 into the project area." 11:33:25
14 Do you see that? 11:33:26
15 A. That's correct. 11:33:27
16 Q. There are at least 16 jack-up or 11:33:28
17 pinup vessels that could fit in through those locks; 11:33:30
18 correct? 11:33:35
19 A. That's correct. 11:33:35
20 Q. And as of the date of the deferral 11:33:35
21 on February 11, 2011, to your knowledge, Windstream 11:33:36
22 had not secured any of those vessels; correct? 11:33:39
23 A. That's correct. There would have 11:33:42
24 been no reason to secure them at that point in time, 11:33:42
25 but that's correct. 11:33:44

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1 Q. And if my math is right, April 6th 11:34:54
2 to November 10, 2015 is about 218 days. 11:34:57
3 Does that sound about right, take my 11:35:01
4 word for it? 11:35:03
5 A. I'll take your word for it. 11:35:04
6 Q. We can correct the record later if 11:35:05
7 I'm wrong. 11:35:07
8 So you have about 22 days of 11:35:08
9 contingency there, so 10 percent of 218? 11:35:11
10 A. There's weather built in there, as 11:35:15
11 well. You said 10 percent mechanical, which is part 11:35:17
12 of it, and then there was 25 percent weather, 11:35:19
13 I believe, on top of that and possibly even more. 11:35:22
14 But I honestly don't remember precisely how we 11:35:25
15 developed that. 11:35:28
16 Q. So right now I want to focus on 11:35:29
17 the mechanical contingency of that 10 percent but I 11:35:30
18 do realize that you have the weather contingency 11:35:34
19 built in there, as well. 11:35:36
20 So my question though, there was 22 11:35:38
21 days of contingency then of 10 percent of 218 days 11:35:39
22 gives us 22 days; correct, roughly? 11:35:43
23 A. Yes. 11:35:46
24 Q. And if further contingency was 11:35:47
25 required but construction was to still finish by 11:35:51

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1 December 2015 because of the winter months, you 11:35:54
2 would have an extra 20 days to work with at the end; 11:35:56
3 correct? You have between November 10th, 2015 to 11:35:59
4 the start of December? 11:36:01
5 A. Yeah, or possibly even into 11:36:03
6 December, yeah. 11:36:05
7 Q. Now, if one of the two vessels 11:36:06
8 being used suffered a mechanical failure of 11:36:08
9 significant length, there could be a problem with 11:36:11
10 the project schedule; correct? If they went down 11:36:13
11 longer than those 42 days? 11:36:16
12 A. That's correct. 11:36:18
13 Q. Now, if we look at -- if -- let's 11:36:20
14 go to page 216 of the second SgurrEnergy report. So 11:36:24
15 that's the coiled report there that Mr. Neufeld 11:36:27
16 handed to you. 11:36:30
17 A. Which page again, I apologize? 11:36:30
18 Q. We're going to 216. 11:36:36
19 A. Okay. 11:36:42
20 Q. And we're going to look under 11:36:42
21 SgurrEnergy's response to URS, paragraph 444. And 11:36:45
22 there they're -- they are discussing the time for 11:36:49
23 the turbine installation vessel to come from Europe 11:36:51
24 to the Great Lakes; correct? 11:36:55
25 A. That's correct. 11:36:56

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1 the Cape Wind project we had 101 3.6 megawatt 11:38:20
2 turbines. We had two installation vessels. Very 11:38:21
3 similar to this project used to -- planned to 11:38:25
4 install those turbines. 11:38:26
5 But what we found was even if one of 11:38:27
6 those installation vessels went down, we could still 11:38:31
7 install the entirety of the project turbines with 11:38:33
8 that one remaining vessel. It wasn't necessarily 11:38:37
9 an issue. 11:38:40
10 When turbine erection is going well, 11:38:41
11 these turbines could go up in a day and you can move 11:38:43
12 right on. So it's just -- we didn't -- at Cape Wind 11:38:47
13 we didn't realize -- we didn't see that that was 11:38:51
14 a significant risk, and here I don't think at the 11:38:53
15 stage that we were in our analysis, we don't see it 11:38:56
16 as a significant risk. 11:38:59
17 Q. Two questions then on Cape Wind. 11:39:02
18 The first: Cape Wind wasn't under the 11:39:02
19 same time constraints that Windstream would have 11:39:05
20 been under with five years; correct? 11:39:07
21 A. It had some very serious time 11:39:09
22 constraints. 11:39:11
23 Q. Do you recall how fast those were? 11:39:12
24 A. We had to finish that job, if it 11:39:14
25 had gotten financed, we had to finish it. 11:39:16

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1 Q. And they note 20 to 25 days; 11:36:56
2 correct? 11:36:59
3 A. I see that they note that it takes 11:37:26
4 20 to 25 days to bring a vessel from Europe at 11:37:29
5 least. That's an approximation, but to say that it 11:37:33
6 adds to project cost, I would say that it doesn't 11:37:35
7 add to project cost. 11:37:38
8 Q. Okay. If we just talk about the 11:37:39
9 days, the 20 to 25 days. 11:37:40
10 If one of the vessels did go down for 11:37:42
11 mechanical failure and you were to require that 11:37:44
12 third vessel, assuming you've secured it in advance, 11:37:46
13 that travel time would eat up your entire 11:37:49
14 contingency; correct? 11:37:53
15 A. If we -- at that moment said the 11:37:54
16 only way we could proceed forward was to actually 11:37:56
17 bring in another vessel and the only place that 11:38:00
18 vessel was available was Europe, then I would agree 11:38:03
19 with you. 11:38:07
20 But my expectation is that the reality 11:38:07
21 is there would be other ways that we could mitigate 11:38:09
22 that risk without having to potentially say we need 11:38:12
23 to bring another vessel from Europe. 11:38:15
24 To be honest with you, we went through 11:38:16
25 this scenario on the Cape Wind project because on 11:38:19

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1 Q. That brings me to my next question 11:39:19
2 then: The Cape Wind project is not being built; 11:39:20
3 correct? 11:39:23
4 A. That is correct. 11:39:24
5 Q. Now, a few minutes ago we noted 11:39:24
6 that there are six jack-up vessels that in theory 11:39:27
7 could do the job, based on what you said? 11:39:30
8 A. The six that were identified on 11:39:32
9 that list, yes. 11:39:34
10 Q. Now, if we turn to page 212 of the 11:39:35
11 second SgurrEnergy report, the one in front of you 11:39:38
12 there, those six vessels are identified here; 11:39:41
13 correct? 11:39:48
14 A. That's correct. 11:39:48
15 Q. Now, as a point of clarity, the 11:39:49
16 Weeks 751 which you spoke about earlier, that's not 11:39:53
17 a turbine installation vessel; correct? 11:39:56
18 A. That's correct. It is not 11:39:59
19 a turbine installation vessel, yes. 11:40:00
20 Q. So in reality that list should be 11:40:02
21 shortened by one? 11:40:04
22 A. That's correct. 11:40:05
23 Q. Now, I want to take you to 11:40:05
24 paragraph 412 of the second URS report which I don't 11:40:06
25 believe we've -- I'll call on Mr. Neufeld's 11:40:10

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1 assistance again. 11:40:16
2 I -- it's paragraph 412. Sorry, not 11:40:17
3 page. 11:40:20
4 A. Tell me the page again? 11:40:24
5 Q. It is paragraph 412. 11:40:26
6 A. Paragraph 412. 11:40:28
7 11:40:29
8 Q. Apologies. There are a lot of 11:40:30
9 paragraphs and page numbers and tab numbers going 11:40:32
10 on. 11:40:35
11 PRESIDENT: Sorry, which document are 11:40:35
12 we looking at now? 11:40:37
13 MS. SQUIRES: The second URS report. 11:40:39
14 BY MS. SQUIRES: 11:40:41
15 A. It is page 81. 11:40:49
16 Q. All right. Now, in that paragraph 11:41:08
17 URS lists the same vessels; correct? 11:41:12
18 A. Correct. 11:41:15
19 Q. And they note that of those 11:41:15
20 vessels that were identified, none of them were 11:41:18
21 available in 2015; correct? 11:41:20
22 A. On this table it says there 11:41:23
23 they're certainly not available. I mean there is 11:41:25
24 a big disconnect here between a hypothetical project 11:41:27
25 that's being planned and saying what vessels could 11:41:30

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1 MS. SQUIRES: I believe that was one 11:42:37
2 question but... 11:42:38
3 PRESIDENT: I was able to follow it, 11:42:39
4 but whether the witness was able to... 11:42:40
5 THE WITNESS: Could you say it, again, 11:42:42
6 though. I apologize. 11:42:43
7 BY MS. SQUIRES: 11:42:45
8 Q. I guess I'm trying to establish 11:42:45
9 that in your first report you didn't look into the 11:42:47
10 availability of vessels because, to use your words, 11:42:49
11 the project was hypothetical and if it had have 11:42:53
12 become a real project, that's when you would have 11:42:56
13 looked into vessel availability? 11:42:58
14 A. Yes, we would have been looking at 11:43:00
15 vessel availability, probably as early -- obviously 11:43:02
16 as early as 2011 or early 2012, to firm up our 11:43:04
17 actual pricing for the project at that time. We 11:43:08
18 would have been contacting vessel owners and saying 11:43:10
19 "Do you have vessels available? What do we need to 11:43:13
20 do." And if the vessels weren't available, we would 11:43:16
21 have gone ahead and as alluded to in my 11:43:20
22 presentation, we potentially would have constructed 11:43:23
23 additional vessels. 11:43:25
24 I do know, again, going to Cape Wind, 11:43:26
25 on Cape Wind we had issues with vessel availability. 11:43:29

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1 potentially could have been be available in 2013 or 11:41:33
2 '14 and then going back and saying, "In the real 11:41:34
3 world when we look at what actually happened, those 11:41:39
4 vessels were not available." I would have to say 11:41:42
5 that's absolutely incorrect. I mean, you just can't 11:41:44
6 look at it that way. If this project was a real 11:41:45
7 project, real vessels would have been contracted. 11:41:48
8 The R.D. MacDonald would have been 11:41:50
9 finished. We would have had vessels available and 11:41:53
10 quite possibly the A2Sea vessels could have been 11:41:55
11 contracted or any of these other vessels if they 11:42:00
12 were in the market, could have been contracted. 11:42:03
13 So, I would have to say, no, I 11:42:05
14 disagree this table accurately reflects vessel 11:42:07
15 availability. 11:42:10
16 Q. So, again, your conclusion from 11:42:11
17 that then is because in your report you're just 11:42:12
18 looking at Windstream as a hypothetical project and 11:42:17
19 that it's not real and if it was real, they would 11:42:20
20 have been able to secure these vessels. You haven't 11:42:23
21 really gone through an analysis to determine what 11:42:25
22 vessels would have been available for the project? 11:42:27
23 MS. SEERS: If I could, perhaps, 11:42:29
24 interject and ask that Ms. Squires poses one 11:42:30
25 question to the witness at a time. 11:42:35

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1 We contacted A2 Sea and the Sea Power, and this is 11:43:32
2 in 2014, we contacted them about the possibilities 11:43:37
3 of using the Sea Power on the Cape Wind project in 11:43:39
4 2015 and they said, no issues, we can probably make 11:43:45
5 it work. 11:43:48
6 Q. So, a possibility is there, but 11:43:49
7 nothing contracted at this point or at the point at 11:43:50
8 February '11. 11:43:53
9 A. That's right. 11:43:54
10 Q. One final series of questions for 11:43:55
11 you about the idea of building a new jack-up vessel 11:43:56
12 and if we turn to 211 of the second Sgurr Energy 11:44:01
13 report, so you can put away that URS one -- 11:44:06
14 A. Okay. 11:44:15
15 Q. We are going to page 211. If you 11:44:15
16 look under sub paragraph (d) they indicate that. 11:44:17
17 "... a new turbine installation 11:44:19
18 vessel... can be designed and 11:44:20
19 fabricated in about 30 months." 11:44:22
20 Do you see that? 11:44:24
21 A. Yes. 11:44:25
22 Q. Now, turbine installation starts 11:44:25
23 for Windstream as we discussed on April 6th, 2015 11:44:27
24 and finishes on November 10th, 2015. 11:44:30
25 So, if a vessel went down for 11:44:34

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1 mechanical issues, you couldn't, in fact, replace it 11:44:36
2 with a new build in order to meet the current 11:44:40
3 schedule; correct? 11:44:42
4 A. Yeah, if we had already started 11:44:43
5 construction, we would not have been able to 11:44:46
6 complete a new -- build a new vessel in time to stay 11:44:48
7 on that schedule to finish the project. 11:44:51
8 Q. Now, if Windstream had to 11:44:56
9 commission and build a new vessel, the rough price 11:44:58
10 would be USD \$150 million? 11:45:05
11 A. I disagree. 11:45:07
12 Q. Well, I want to take you to 11:45:08
13 an exhibit in your binder. We're going to turn to 11:45:11
14 tab 20 and we're going to look at page 5. 11:45:13
15 So we will come back to the first 11:45:36
16 page there for a moment. So, this is Exhibit R-0655 11:45:38
17 and it's a presentation called "Build it and they 11:45:42
18 will come," given by you on December 6th, 2012? 11:45:45
19 A. That's correct. 11:45:48
20 Q. And if we turn to page 5, in the 11:45:48
21 second slide, it notes there: How much do we need. 11:45:51
22 Build 150 million plus jack-up vessel? So, is your 11:45:56
23 testimony then that this is incorrect, that it 11:46:02
24 doesn't cost \$150 million? 11:46:04
25 A. For a vessel to construct the 11:46:06

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1 Shoals project, even if the Wolfe Island Shoals 11:47:16
2 project had used larger turbines than what we 11:47:18
3 planned on, vessels smaller than the R.D. MacDonald 11:47:23
4 were very appropriate if 2.3 megawatts turbines were 11:47:26
5 going to be used. 11:47:31
6 Q. As of right now there's nothing in 11:47:31
7 your report to discuss the building or the 11:47:33
8 utilization, how those vessels would be modified; 11:47:35
9 correct? Your report doesn't speak to that issue. 11:47:39
10 A. I don't believe so. 11:47:41
11 Q. Just give me one moment. 11:47:43
12 [Counsel confer] 11:47:44
13 MS. SQUIRES: Those are all my 11:48:22
14 questions, Mr. Palmer. Thank you. 11:48:23
15 PRESIDENT: Thank you, Ms. Squires. 11:48:25
16 Do you need to gather your thoughts or 11:48:26
17 can you go on immediately? 11:48:30
18 MS. SEERS: We can go on immediately. 11:48:33
19 PRESIDENT: Okay, please. 11:48:35
20 RE-EXAMINATION BY MS. SEERS: 11:49:00
21 Q. Good morning, Mr. Palmer, Ms. 11:49:03
22 Squires, you will recall, asked you questions about 11:49:05
23 whether there were timing constraints on the Cape 11:49:10
24 Wind project that you were involved with. 11:49:11
25 You answered that there were 11:49:16

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1 Wolfe Island Shoals project, I would say we're down 11:46:08
2 at the third bullet which is "Build a lower cost 11:46:10
3 functional jack-up with minimal features," not the 11:46:13
4 150 million, which I did -- in this specific report 11:46:16
5 I'm saying you don't need to build a \$150 million 11:46:18
6 vessel. That's exactly what I'm saying, this 11:46:21
7 \$150 million vessel is a NG9000, Gusto MCS design, 11:46:23
8 the self propelled turbine installation vessels that 11:46:29
9 actually cannot even come down the Seaway. It 11:46:34
10 wouldn't be able to be used on the Wolfe Island 11:46:36
11 project. You needs something that could actually 11:46:39
12 fit through the Seaway, and would be the lowest 11:46:41
13 possible cost to give you the functionality you need 11:46:44
14 to erect the turbines. 11:46:47
15 Q. So, we're looking at a vessel then 11:46:48
16 that has, as you've said it, the lowest possible 11:46:50
17 cost with the functionality for it to work, but you 11:46:53
18 note there in the presentation that there could be 11:46:56
19 certain constraints with those types of vessels, one 11:46:59
20 being if the turbines get bigger. 11:47:02
21 So, again this conclusion on whether 11:47:03
22 or not that vessel would be appropriate for the 11:47:04
23 project is, again, preliminary; correct? 11:47:06
24 A. I believe the vessel that R.D. 11:47:12
25 MacDonald certainly appropriate for the Wolfe Island 11:47:14

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1 significant time constraints associated with that 11:49:16
2 project and that you had to get -- I think your 11:49:16
3 words were, "You had to get the project done on 11:49:17
4 time." 11:49:20
5 In your experience, how are project 11:49:20
6 completion deadlines managed in the marine 11:49:23
7 construction environment? 11:49:25
8 A. Typically the developer or the 11:49:28
9 owner will ask us to sign a contract and in the case 11:49:30
10 of Cape Wind, that is also in the case of the Block 11:49:33
11 Island project, we've signed contracts that have 11:49:36
12 significant liquidated damages that are linked to 11:49:39
13 very specific schedule dates. 11:49:43
14 And those are the stick that they use 11:49:44
15 to ensure that we actually finish projects on time 11:49:48
16 because if we do not finish on time, we have to pay 11:49:52
17 a significant sum of money immediately back to them 11:49:54
18 to manage that risk on their side. 11:49:58
19 So, I can -- I believe I can very 11:50:01
20 truthfully say that in the case of this project, 11:50:04
21 knowing how it was potentially would go to an EPC 11:50:06
22 fully-wrapped type of installation contract, I could 11:50:09
23 believe that there would have been liquidated 11:50:14
24 damages built into this contract, and we have been 11:50:16
25 held to those liquidated damages. 11:50:21

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1 Q. And which party would bear the 11:50:23
2 risk of contingencies occurring or other things, if 11:50:24
3 the project -- to ensure that the project would be 11:50:27
4 built by the deadline? 11:50:32
5 A. The construction risk would have 11:50:33
6 been carried by the construction contractor. 11:50:34
7 Q. Ms. Squires asked you questions 11:50:41
8 about whether a further contingency would be 11:50:43
9 required if there was a mechanical failure; you will 11:50:45
10 recall? 11:50:48
11 A. Uh-hmm. 11:50:49
12 Q. And you will recall that you 11:50:50
13 answered -- you gave an answer regarding the 11:50:51
14 possibility of a third vessel from Europe being 11:50:54
15 required. 11:50:57
16 Could you comment on whether the 11:50:59
17 10 percent contingency for mechanical failure is 11:51:00
18 more likely than not sufficient, in your opinion, to 11:51:03
19 deal with the possibility of mechanical failure? 11:51:06
20 A. In our experience, we often use 11:51:09
21 the 10 percent number, based on our actual 11:51:12
22 experience with mechanical downtime. 11:51:16
23 I actually -- and 10 percent is 11:51:19
24 actually a conservative number. I would say our 11:51:22
25 actual mechanical downtime is less. 11:51:25

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1 vessel. 11:52:41
2 Q. You will recall that Ms. Squires 11:52:42
3 asked you questions about whether your first report 11:52:44
4 represented a preliminary approach, in her words, to 11:52:47
5 the ways and means for construction, and you 11:52:52
6 answered that it did. 11:52:57
7 Had the moratorium not occurred and 11:52:59
8 the project been permitted to proceed, could you 11:53:01
9 comment on when, in the project development cycle 11:53:03
10 a more detailed construction ways and means plan 11:53:06
11 would have been developed? 11:53:10
12 A. Based on our real world 11:53:12
13 experience, we would have constantly been updating 11:53:14
14 the construction means and methods as we worked with 11:53:19
15 the client to develop the project and the engineer. 11:53:22
16 As changes were made to the foundation 11:53:26
17 design, if any were required, we would have brought 11:53:28
18 that into our construction methodology. It would 11:53:31
19 have been an ongoing process. We would have been 11:53:33
20 re-estimating, re-scheduling, re-working this 11:53:37
21 constantly from the time we got involved in the 11:53:41
22 project, all the way through. 11:53:43
23 That has been our experience for all 11:53:44
24 of the offshore wind projects, and also many other 11:53:47
25 marine projects that we've been involved in. The 11:53:50

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1 Q. And you recall that Ms. Squires 11:51:28
2 asked you about the possibility of a vessel 11:51:32
3 experiencing mechanical failure during construction 11:51:33
4 and the possible requirement to build a new vessel 11:51:38
5 during construction. And you gave an answer 11:51:41
6 regarding that possibility and the impact, if that 11:51:44
7 possibility were to materialize on the project 11:51:46
8 schedule. 11:51:48
9 Could you comment, in your opinion, as 11:51:50
10 to the likelihood of that scenario that was put to 11:51:53
11 you, materializing? 11:51:56
12 A. I think the likelihood that the 11:51:58
13 turbine installation vessel or one of the other 11:52:02
14 vessels failed to such an extent, that it was no 11:52:05
15 longer a viable resource on the project, is remote. 11:52:10
16 But certainly it would have been part 11:52:13
17 of our planning, and we would have had additional 11:52:17
18 plans to how we could potentially mitigate that 11:52:22
19 contingency. 11:52:25
20 As I mentioned on Cape Wind we had 11:52:26
21 analyzed the schedule and found that we actually 11:52:28
22 could complete the turbine installation, albeit it 11:52:31
23 was going to take longer, we were going to get into 11:52:33
24 liquidated damages, but we could complete the 11:52:36
25 turbine installation with a single installation 11:52:38

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1 work does not stop. We don't just have a single 11:53:53
2 point in time and say that's exactly how we're doing 11:53:54
3 it. We continually update our plans and our methods 11:53:57
4 and even after the contract is fully firm and the 11:54:01
5 design is fully complete, even going into 11:54:03
6 construction we continue to improve and optimize our 11:54:05
7 plan. 11:54:09
8 Q. You will recall Ms. Squires asked 11:54:13
9 you questions that she characterized as, again, the 11:54:14
10 possibility of chartering certain particular vessels 11:54:18
11 for this project. And you will recall that you 11:54:21
12 answered that, absent the moratorium it would have 11:54:25
13 been possible to charter vessels or construct them. 11:54:28
14 Can you comment on whether it would 11:54:32
15 have been likely as opposed to possible? 11:54:33
16 A. I believe it was highly likely. 11:54:35
17 Based on our actual experience in the 11:54:37
18 market and the offshore wind market for projects on 11:54:40
19 the east coast during that same timeframe in 2012, 11:54:44
20 2013, there was a significant amount of interest by 11:54:48
21 European vessel owners to be able to provide vessels 11:54:51
22 to the US, market, particularly vessels such as the 11:54:55
23 A2 Sea, Sea Power, the A2 Sea Energy, that were too 11:55:00
24 small at that time to actually work efficiently in 11:55:05
25 the European market. Those vessels -- they were 11:55:09

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1 looking for places to put those vessels. 11:55:12
2 Q. If you will turn back to tab 19, 11:55:15
3 please, Mr. Palmer, this is an Ortech report that 11:55:18
4 Ms. Squires took you to. 11:55:22
5 I'll get you the -- for the record 11:55:24
6 it's C-0552. 11:55:27
7 Okay, I don't think the page -- let me 11:55:37
8 just -- give me a moment to check whether the 11:55:40
9 page I'm taking him to -- I don't believe there's 11:55:42
10 any confidential information, so I don't think you 11:55:45
11 need to cut the feed for this page. 11:55:47
12 There is, but we won't pull it up on 11:55:56
13 the screen. Page 12, Mr. Palmer, please. This is 11:55:58
14 a map showing various potential fabrication 11:56:07
15 facilities, as I understand it, for the foundations. 11:56:13
16 A. Correct. 11:56:18
17 Q. And you will recall that 11:56:20
18 Ms. Squires asked you questions about the fact that 11:56:21
19 certain potential foundation fabrication facilities 11:56:23
20 were located further away from the project area than 11:56:26
21 the St. Mary's Cement, Bowmanville facility and she 11:56:29
22 asked you some questions about the impact on the 11:56:34
23 project schedule about that. 11:56:36
24 If you go back to the map, can you 11:56:40
25 comment as to the various facilities that were 11:56:44

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1 given the scope to say you also have to fabricate 11:57:45
2 the foundation units, we would be looking for the 11:57:48
3 closest possible site that was feasible for the 11:57:51
4 project, just because it helps reduce our risk. 11:57:54
5 BY MS. SEERS: 11:57:56
6 Q. So, you gave an answer to 11:57:56
7 Ms. Squires about the impact on the project schedule 11:57:58
8 if a site further away from the project area than 11:58:00
9 the Bowmanville facility had been selected. 11:58:02
10 Could you comment on the impact on the 11:58:04
11 project schedule, if a site closer than the 11:58:06
12 Bowmanville facility had been selected? 11:58:08
13 A. I think the project, the 11:58:12
14 installation schedule would still have been met. We 11:58:14
15 would have sized and constructed the number of 11:58:16
16 installation vessels, appropriate for wherever that 11:58:19
17 facility was located. 11:58:23
18 Q. Okay. You will recall that 11:58:24
19 Ms. Squires asked you questions about whether your 11:58:26
20 report speaks to the modification of vessels. And 11:58:29
21 you noted that it does not. When, in the design or 11:58:33
22 development of the project process, absent the 11:58:37
23 moratorium, would detail of that nature been 11:58:41
24 developed? 11:58:45
25 A. It would have developed right -- 11:58:47

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1 available and their relative proximity to the 11:56:46
2 project location? 11:56:49
3 MR. NEUFELD: Before you answer, sorry 11:56:53
4 to interrupt, just a point of clarification here. 11:56:55
5 Everything on this page you've designated as 11:56:57
6 "confidential" so I'd like for you to either express 11:56:59
7 that you are waiving the confidentiality 11:57:01
8 designations on the page or proceed to... 11:57:02
9 MS. SEERS: Let me confer with my 11:57:06
10 client about that then. I don't know that there's 11:57:08
11 a particular issue. 11:57:10
12 PRESIDENT: We can also read the map, 11:57:11
13 so I'm not sure we're going to find it necessary to 11:57:12
14 go there. 11:57:16
15 MS. SEERS: I doubt that it's 11:57:17
16 particularly confidential, but, okay, my client says 11:57:18
17 it's fine. 11:57:21
18 THE WITNESS: Certainly what I see on 11:57:21
19 the map and this is the first time I've actually 11:57:24
20 seen this map in this context, but there were 11:57:27
21 multiple potential fabrication sites that were 11:57:31
22 closer to the project site than the St. Mary's 11:57:35
23 facility and I have to say that the -- those other 11:57:38
24 sites would actually be beneficial. 11:57:40
25 We, as a contractor, if we had been 11:57:43

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1 as soon as we recognized that vessels would have 11:58:49
2 needed to be modified to -- or vessels that maybe we 11:58:51
3 already had in our fleet, could be used on 11:58:53
4 the project if they were modified, we would have 11:58:56
5 anticipated that right from the start. 11:59:00
6 To say exactly what time it would have 11:59:03
7 been, but in the initial estimate, if we had 11:59:05
8 recognized we had a vessel that could work if we 11:59:07
9 modified it, we would have been thinking about that 11:59:09
10 modification from the very beginning. 11:59:12
11 MS. SEERS: I'll just confer with my 11:59:14
12 colleagues for one moment. Thank you, Mr. Palmer. 11:59:15
13 Those are our questions. 11:59:27
14 THE WITNESS: You're welcome. 11:59:28
15 PRESIDENT: Thank you, Ms. Seers. 11:59:32
16 There will be questions from the Tribunal, as well. 11:59:33
17 QUESTIONS FROM THE TRIBUNAL: 11:59:35
18 MR. BISHOP: Yes, I have a question 11:59:39
19 about the Cape Wind project. You said that that 11:59:40
20 wasn't built. Why wasn't it built? 11:59:42
21 THE WITNESS: I believe I can only 11:59:46
22 probably share information that's been made 11:59:47
23 available publicly, and as I believe though what had 11:59:50
24 publicly stated was that they were unable to secure 11:59:55
25 all of their financing for the project. 11:59:59

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1 They were certainly way, well on their 12:00:02
2 way to having all of their financing in place, but 12:00:04
3 there was still portions of the financing that were 12:00:09
4 not available. At the end of 2014, there was 12:00:11
5 a clause in their power purchase agreements that 12:00:19
6 effectively cancelled their power purchase 12:00:22
7 agreements, and so at the end of 2014 they lost 12:00:26
8 their power purchase agreements. 12:00:28
9 There were steps, I think, that had 12:00:30
10 been put out in the news that said they could have 12:00:32
11 potentially had petitioned for a longer period of 12:00:35
12 time for the power purchase agreements to remain in 12:00:40
13 effect, but ultimately because of other factors they 12:00:42
14 elected not to do that. 12:00:45
15 MR. BISHOP: The other factors being 12:00:46
16 the financing? 12:00:48
17 THE WITNESS: Other factors, as 12:00:49
18 I think they felt and I think that Jim Gordon had 12:00:50
19 come out publicly to say that they really felt they 12:00:54
20 had a force majeure case here to build because of 12:00:58
21 all the litigation that the project had been put 12:01:01
22 through by the opposition. And they felt that their 12:01:04
23 ability to reach the deadlines that were mandated by 12:01:08
24 the power purchase agreement were negatively 12:01:12
25 effected because of all the litigation opposition, 12:01:18

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1 were quite erectible without any issues for that 12:02:24
2 project site. 12:02:28
3 That project had a lot of similarities 12:02:29
4 in a way, to the Wolfe Island Shoals project. It 12:02:32
5 was inside Nantucket Sound, a very -- much more 12:02:34
6 protected area of water, where you did not get the 12:02:38
7 same swell conditions, the same sea conditions that 12:02:41
8 you have, let's say, off of Block Island or along 12:02:44
9 the eastern seaboard. 12:02:48
10 So, they had the advantage of having 12:02:49
11 a protected site that was in relatively shallow 12:02:51
12 water. The deepest water was about 20 metres, and 12:02:55
13 the technical challenges were all easily 12:02:58
14 surmountable. 12:03:00
15 MR. BISHOP: How big was that project? 12:03:02
16 THE WITNESS: The overall -- it was 12:03:04
17 permitted for 468 megawatts. 12:03:05
18 The first phasing had sold 77 percent 12:03:08
19 of the power, and they were going to initially 12:03:11
20 construct 101 turbines in the first phase. 12:03:13
21 MR. BISHOP: Did they actually get 12:03:17
22 into construction of that project? 12:03:18
23 THE WITNESS: No, they got all the way 12:03:19
24 through, they have all the BOEM approvals. 12:03:22
25 They got all the facility design report, the 12:03:26

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1 so they felt the force majeure were gone. 12:01:21
2 MR. BISHOP: Do you know why they were 12:01:25
3 unable to obtain the financing? 12:01:25
4 THE WITNESS: Ultimately, I think 12:01:28
5 it -- ultimately it came down to just the timing of 12:01:30
6 the project, the schedule and when power had to be 12:01:37
7 delivered, and that's maybe a broad answer and I 12:01:46
8 apologize, but I don't think I can get into more 12:01:48
9 detail than that. 12:01:50
10 MR. BISHOP: What I took out of it was 12:01:52
11 that it related to the schedule of finishing the 12:01:52
12 project, as it related to the deadlines in the power 12:01:56
13 purchase agreement. 12:01:59
14 THE WITNESS: That's correct. 12:02:00
15 MR. BISHOP: That's what you were 12:02:01
16 referring to? 12:02:02
17 THE WITNESS: That's how I've under 12:02:02
18 stood it, yes. 12:02:03
19 MR. BISHOP: Were there technical 12:02:05
20 issues on that project that were -- that would have 12:02:07
21 been insurmountable? 12:02:11
22 THE WITNESS: No, we felt, 12:02:13
23 technically, that we had an excellent plan to 12:02:14
24 construct the project, and to erect the project and 12:02:18
25 the turbines they had selected, the Siemens turbines 12:02:21

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1 fabrication installation report done. Effectively, 12:03:30
2 the only thing they did not achieve was financial 12:03:32
3 close. 12:03:36
4 MR. BISHOP: What was the schedule for 12:03:37
5 that project, start to finish? 12:03:38
6 THE WITNESS: At the end it was going 12:03:40
7 to be -- it was going to be built in two seasons, 12:03:41
8 2015, 2016. There has been -- there were multiple 12:03:45
9 other schedules for the project but ultimately at 12:03:50
10 the end, it was still a two-season project. 12:03:53
11 MR. BISHOP: Could the project have 12:03:56
12 been built within that schedule, assuming that the 12:03:57
13 other factors you mentioned -- 12:04:03
14 THE WITNESS: If they -- I would say, 12:04:05
15 the project suffered a one-year delay, which is 12:04:06
16 public knowledge. It was initially scheduled to be 12:04:10
17 2014, 2015. They had some concerns and it got 12:04:13
18 pushed into 2015, 2016. 12:04:17
19 If the -- if -- when they made that 12:04:19
20 one-year slide, if the -- some of the dates for 12:04:24
21 financing had been achieved, the project was 12:04:27
22 absolutely constructable. 12:04:30
23 MR. BISHOP: Okay. Thank you. 12:04:32
24 PRESIDENT: I understand this project, 12:04:40
25 the Windstream project, would have been held by your 12:04:42

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1 construction division? 12:04:44
2 THE WITNESS: That's correct. In 12:04:48
3 conjunction with our partners at the time, Kiewit 12:04:50
4 and GOC. 12:04:50
5 PRESIDENT: Generally, in your 12:04:55
6 projects, do you contract? What is the contracting 12:04:56
7 structure? Do you contract directly with the owner 12:05:00
8 or the project manager or somebody else? 12:05:03
9 THE WITNESS: We've -- for many 12:05:06
10 contracts, we've contracted directly with the owner. 12:05:08
11 Historically, in offshore wind, we are 12:05:10
12 contracting directly with the owner. That's how 12:05:13
13 Cape Wind was. We contracted directly with Cape 12:05:16
14 Wind. On Block Island we contracted directly with 12:05:19
15 Deep Water Wind. 12:05:22
16 Other projects that have 12:05:23
17 a construction manager in the middle, we also 12:05:24
18 contracted that way, but in offshore wind we haven't 12:05:27
19 gone to a construction manager. 12:05:30
20 PRESIDENT: So, what's -- based on 12:05:32
21 your experience, what would be the typical 12:05:34
22 construction project structure, contracting 12:05:36
23 structure in an offshore -- in a wind project? 12:05:40
24 THE WITNESS: I would say both the 12:05:44
25 Cape Wind project and the Block Island project, at 12:05:46

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1 one point they were both looking for a fully wrapped 12:05:50
2 EPC contractor to step in and maybe handle 12:05:53
3 everything, but they -- they moved away from that to 12:05:56
4 more of a multi-contract approach where the 12:05:59
5 developer themselves sat in the middle between many 12:06:01
6 other contractors. 12:06:03
7 We had a very well-defined scope for 12:06:04
8 marine installation at Cape Wind. We were at risk 12:06:07
9 for everything that was within our scope, but there 12:06:14
10 were other risks on the project that were carried by 12:06:17
11 the developer. They put themselves in that position 12:06:19
12 to potentially lower cost for the project. 12:06:22
13 PRESIDENT: I understand you did some 12:06:25
14 work, you had some contact with Windstream back in 12:06:26
15 2010. 12:06:31
16 Did you discuss the potential contract 12:06:31
17 structure for -- 12:06:35
18 THE WITNESS: I recall in 2010, we 12:06:37
19 absolutely discussed the contract structure in that 12:06:39
20 meeting, and at the time we were -- with Kiewit and 12:06:41
21 GOC. We were absolutely willing to entertain 12:06:46
22 an EPC-type of contracting mechanism if that's what 12:06:50
23 they wanted. 12:06:55
24 In 2010 when Cape Wind came back out 12:06:55
25 in the market, we had been working with them since 12:07:01

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1 2003. But in 2010, Cape Wind was absolutely looking 12:07:04
2 for a full turnkey, fully wrapped EPC contract that 12:07:07
3 would bring the turbine supply and everything under 12:07:10
4 one contractor. 12:07:13
5 And so in 2010, that was what was in 12:07:13
6 our head was that people wanted these projects as 12:07:17
7 EPCs. 12:07:19
8 PRESIDENT: So, your understanding was 12:07:21
9 at the time that it would have been an EPC directly 12:07:23
10 with the owner? 12:07:27
11 THE WITNESS: Potentially, yeah. 12:07:28
12 I can say it certainly didn't get developed very 12:07:29
13 far, it was just talked about. But it wasn't 12:07:33
14 something that we with we were opposed to. 12:07:36
15 PRESIDENT: Okay. Thank you very 12:07:38
16 much. 12:07:39
17 THE WITNESS: You're welcome. 12:07:39
18 PRESIDENT: Do the questions from the 12:07:41
19 Tribunal give rise to any questions from counsel? 12:07:42
20 MS. SEERS: Let me just have a moment 12:07:46
21 to confer. 12:07:47
22 MR. SPELLISCY: We should probably go 12:09:26
23 first. 12:09:27
24 MS. SEERS: I apologize. 12:09:32
25 PRESIDENT: Okay, Respondent first. 12:09:34

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1 Ms. Squires. 12:09:35
2 MS. SEERS: Sorry. 12:09:38
3 MS. SQUIRES: It's okay. 12:09:38
4 FURTHER CROSS-EXAMINATION BY MS. SQUIRES: 12:09:39
5 Q. Mr. Palmer, I just have one 12:09:47
6 question for you. Mr. Bishop asked quite a number 12:09:48
7 of questions about the Cape Wind project, and you 12:09:52
8 mentioned that it was similar because of the shallow 12:09:54
9 water, similar to Windstream project because it was 12:09:58
10 in a protected area in shallower with water. 12:10:02
11 I don't want you to reveal any 12:10:04
12 confidential information of your clients in 12:10:06
13 answering this question, but I know it's been 12:10:08
14 publicly reported, so maybe you can still answer: 12:10:09
15 What were the capital costs of that project? 12:10:10
16 A. I'd say for the Cape Wind project, 12:10:15
17 it was -- I'm not sure -- honestly, I do not know. 12:10:17
18 Maybe you can tell me what's been publicly reported? 12:10:22
19 Q. I don't have the number in front 12:10:25
20 of me either. That's fine. 12:10:26
21 A. I truly don't know but it is 12:10:27
22 measured in billions of dollars but it's -- I think 12:10:30
23 it's probably around \$2 billion, something like 12:10:32
24 that. That's what I believe has been publicly 12:10:36
25 talked. 12:10:39

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1 MS. SQUIRES: And just one second. 12:10:40
2 That's it. Thank you. 12:10:42
3 PRESIDENT: Thank you, Ms. Squires. 12:10:45
4 And Ms. Seers. 12:10:47
5 MS. SEERS: I waited my turn. 12:10:48
6 RE-EXAMINATION BY MS. SEERS: 12:10:50
7 Q. Mr. Palmer, Mr. Bishop asked you 12:10:58
8 questions about the Cape Wind project and why it was 12:11:00
9 not built, and you gave answers about the 12:11:03
10 financability of the project and the issues 12:11:06
11 regarding its power purchase agreement. 12:11:10
12 Could you comment on the nature, as 12:11:12
13 far as you're aware of course, of those power 12:11:15
14 purchase agreements and how they compare, if you're 12:11:19
15 aware, to the FIT contract that Windstream had? 12:11:23
16 A. I honestly cannot offer any 12:11:28
17 understanding of the power purchase agreements, 12:11:30
18 which are -- at least one of them is public record. 12:11:31
19 You can find on it the Internet, and you can read 12:11:34
20 through it all. 12:11:36
21 Certainly, from our perspective, my 12:11:37
22 perspective, the FIT contract was a better mechanism 12:11:39
23 than the power purchase agreements that Cape Wind 12:11:43
24 had for financing. 12:11:48
25 Q. And can you -- 12:11:50

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1 Mr. Irvine. 12:21:15
2 THE WITNESS: Good afternoon. 12:21:16
3 PRESIDENT: You have been here before 12:21:17
4 so you know-how it works. 12:21:18
5 Can you please state your name for the 12:21:20
6 record, and then read the declaration for expert 12:21:22
7 witnesses? 12:21:25
8 THE WITNESS: Certainly. My name is 12:21:30
9 Ian Adam Irvine. My name is Ian Adam Irvine and 12:21:31
10 I solemnly declare upon my honour and conscience 12:21:36
11 that my evidence and my opinions will be in 12:21:40
12 accordance with my sincere belief. 12:21:42
13 AFFIRMED: IAN ADAM IRVINE 12:21:44
14 PRESIDENT: Thank you very much. Now, 12:21:45
15 I understand you are here to defend the -- both of 12:21:52
16 the Sgurr reports, although you were not involved in 12:21:55
17 the preparation of the first one; is that correct? 12:21:58
18 THE WITNESS: That's correct. 12:22:01
19 PRESIDENT: And you are familiar with 12:22:01
20 the first report and your -- 12:22:03
21 THE WITNESS: Yes, I am familiar with 12:22:06
22 both reports. 12:22:07
23 PRESIDENT: Okay, very good. So, we 12:22:08
24 understand it's the usual process, so there'll be 12:22:12
25 a presentation. Thank you for the slides which we 12:22:14

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1 A. At the time -- I mean, I say 12:11:50
2 not after February of 2011, but prior to 12:11:51
3 February 2011, we thought it gave a lot of financial 12:11:56
4 strength to the project. 12:11:59
5 As I already said, we thought that was 12:12:00
6 going to be a key factor in actually letting that 12:12:02
7 project start first, rather than be a later project. 12:12:04
8 MS. SEERS: Okay. Thank you. And 12:12:09
9 I appreciate we've reached the edge of your 12:12:10
10 expertise as a marine contractor, but we appreciate 12:12:12
11 your insight. Thank you. 12:12:16
12 THE WITNESS: You're welcome. 12:12:18
13 PRESIDENT: Okay, thank you very much, 12:12:22
14 Mr. Palmer. 12:12:23
15 THE WITNESS: You're welcome. 12:12:24
16 PRESIDENT: So that concludes your 12:12:25
17 examination. We have still some time, so I suggest 12:12:27
18 we have the presentation of the next experts or 12:12:32
19 expert. I understand it will be Mr. Irvine. 12:12:37
20 And do we need a short logistical 12:12:46
21 break of five minutes? Let's do that. We will 12:12:49
22 continue at 12:17. 12:12:52
23 --- Recess taken at 12:13 p m. 12:19:59
24 --- Upon resuming at 12:21 p m. 12:19:59
25 PRESIDENT: Good afternoon, 12:21:14

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1 have already received Will there be any direct 12:22:18
2 examination by counsel? 12:22:23
3 MS SEERS: There may be 12:22:24
4 PRESIDENT: There may be Okay, let's 12:22:25
5 see 12:22:26
6 So, Mr Irvine, please go ahead 12:22:26
7 PRESENTATION BY IAN ADAM IRVINE, SGURR ENERGY 12:22:26
8 THE WITNESS: Thank you for the 12:22:33
9 opportunity to speak today 12:22:34
10 Here is the agenda that I intend to 12:22:37
11 run through, and I'll tell you a bit about myself, 12:22:38
12 a bit about SgurrEnergy, give you a summary of my 12:22:42
13 opinion, and discuss something about offshore wind 12:22:45
14 component and why we do not believe their components 12:22:52
15 are novel, a little bit about the schedule, and 12:22:56
16 I will conclude with a little discussion about the 12:22:59
17 wind resource 12:23:05
18 So, a little bit about myself I am 12:23:08
19 a mechanical engineer I've been involved in 12:23:10
20 renewable energy since 1985, since I graduated, so 12:23:14
21 over 30 years of experience in the renewable energy 12:23:17
22 sector 12:23:21
23 I've over a decade of experience 12:23:24
24 working with an electricity utility, Scottish Power, 12:23:26
25 supporting its multi-national wind farm 12:23:31

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1 developments. 12:23:34
2 I formed SgurrEnergy in 2002 to focus 12:23:35
3 on renewable energy globally. 12:23:39
4 I've been involved in the first 12:23:42
5 project financed offshore wind farm, Q7-2006. 12:23:43
6 I support the government initiatives 12:23:50
7 to look at the opportunities for wind farm 12:23:52
8 development offshore in China. 12:23:55
9 I'm a fellow of the Institute of 12:23:58
10 Mechanical Engineers, a visiting professor of 12:24:00
11 University of Strathclyde and currently helping the 12:24:03
12 UK Foreign and Commonwealth Office with a joint 12:24:06
13 initiative to help reduce the cost of offshore wind 12:24:09
14 for deployment in China. 12:24:16
15 That's a quick summary of SgurrEnergy, 12:24:18
16 what our business has achieved. We have consulted 12:24:21
17 in over 160 gigawatts of renewable energy projects 12:24:25
18 since 2002. 12:24:29
19 We actually have 280 staff worldwide 12:24:30
20 supporting the development of a variety of renewable 12:24:35
21 energy projects. 12:24:38
22 That is a summary of our global 12:24:41
23 offices. We offer services all over the world and 12:24:45
24 are well-established here in North America. 12:24:49
25 Importantly, we are now part of an 12:24:54

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1 diligence support. 12:26:31
2 Some details on projects such as the 12:26:33
3 assessment of floating wind, undertaking 12:26:38
4 construction reviews for potential offshore wind 12:26:42
5 developments. And interestingly, we also supported 12:26:45
6 Cape Wind's development in the US. 12:26:53
7 We have undertaken numerous technical 12:26:55
8 feasibility studies for clients ranging from Japan 12:26:58
9 through to looking at operation maintenance 12:27:00
10 strategies for large offshore wind developments in 12:27:03
11 the UK, such as Inch Cape and Moray Firth. 12:27:07
12 We have undertaken extensive 12:27:14
13 assessment of the offshore resource looking at 12:27:17
14 issues like wind turbine power curve responses in 12:27:21
15 the offshore wind environment, deploying LiDAR on a 12:27:24
16 platform off of Hong Kong. 12:27:29
17 We currently do shore-to-sea 12:27:31
18 assessments in wind resource such in places such as 12:27:33
19 Texas and South Korea. 12:27:38
20 This is a very important aspect of 12:27:41
21 what we offer to our clients, which is risk analysis 12:27:42
22 and project re-risking. I cannot emphasize 12:27:49
23 sufficiently how much importance we have to place in 12:27:53
24 these activities with respect to creating 12:27:56
25 a successful offshore wind project where we identify 12:28:03

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1 offshore energy services company, Wood Group, that 12:24:59
2 is some 32,000 people, and at any one time over 12:25:02
3 2,000 personnel working in the offshore environment. 12:25:07
4 SgurrEnergy's experience in offshore 12:25:14
5 wind is significant and considerable. These are the 12:25:16
6 key roles that we get involved in, lender's 12:25:19
7 engineer, right through to a very important aspect 12:25:23
8 of offshore wind development, which is risk analysis 12:25:26
9 and project de-risking. 12:25:32
10 We are currently working on 14 live 12:25:36
11 lenders technical advisor assignments, equal 12:25:40
12 equivalent to 4 gigawatts project in Europe. We 12:25:45
13 have a very strong record in Germany and the UK, the 12:25:49
14 world's biggest offshore wind markets. 12:25:54
15 And we have conducted significant work 12:25:55
16 with regard to the assessment of the wind resource, 12:25:59
17 including current groundbreaking assessment using 12:26:02
18 remote sensing technologies such as LiDAR. 12:26:03
19 Here's a list of lender engineer's 12:26:14
20 assignments we have undertaken for offshore wind 12:26:18
21 farms. I'm not going to go through every point, 12:26:18
22 just highlight the extensive coverage we have in 12:26:21
23 that regard. 12:26:24
24 Another list of projects where we have 12:26:25
25 provided independent engineering acquisition, due 12:26:27

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1 potential risks and appropriate mitigation of these 12:28:08
2 risks, and continue that right through the project 12:28:11
3 cycle. 12:28:13
4 From our perspective, we would 12:28:15
5 typically see 30 or more iterations of a project 12:28:17
6 schedule by the time we got to the financial close 12:28:20
7 position. 12:28:23
8 So, this gives a summary of my 12:28:26
9 opinion, and that is based upon our extensive 12:28:29
10 experience. 12:28:32
11 We consider the Wolfe Shore Island 12:28:34
12 offshore wind project to be technically feasible, 12:28:38
13 and more likely than not, it would have been 12:28:43
14 developed and built within the guidelines of the FIT 12:28:47
15 contract. 12:28:48
16 And we reach this conclusion for the 12:28:48
17 following reasons: It uses proven technologies, it 12:28:50
18 uses technologies which capitalise on the extensive 12:28:54
19 supply chain, and its experience specifically in the 12:28:58
20 Great Lakes system. We view the project schedule as 12:29:02
21 reasonable and achievable. 12:29:05
22 It has a robust and bankable wind 12:29:08
23 resource supporting reports. We consider the 12:29:11
24 project participants are sufficiently experienced 12:29:14
25 and able to take risks for their relevant areas of 12:29:19

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1 expertise. 12:29:25
2 This is highlighting that we don't 12:29:28
3 consider that project to be novel. The components 12:29:30
4 proposed for this project have been used in many 12:29:36
5 other applications, as the previous witnesses have 12:29:38
6 explained. 12:29:42
7 There is over 9 gigawatts of offshore 12:29:45
8 wind, 370 gigawatts of wind installed worldwide, 12:29:48
9 giving an extensive pull of experience to draw from. 12:29:52
10 And there are also projects that are 12:29:57
11 very, very similar to this proposition for Lake 12:30:00
12 Ontario, based in both the Baltic Sea and on a lake 12:30:03
13 in Sweden. 12:30:09
14 So taking a look at the project 12:30:11
15 schedule, this is looking at 63 months for 12:30:13
16 undertaking all the associated activities, from 12:30:18
17 start to finish to get the project online, which we 12:30:21
18 consider adequate. 12:30:26
19 It has been developed by COWI, 12:30:28
20 Weeks Marine, ourselves, WSP and Baird. And as 12:30:33
21 I said previously, the project schedule we start 12:30:36
22 with is one of many iterations we would expect to 12:30:41
23 see as the project is developed. 12:30:44
24 And those iterations would drop on 12:30:48
25 further site investigation work to better understand 12:30:51

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1 the conditions that we have to operate in, the 12:30:55
2 conditions that we have to construct in. Each time 12:30:58
3 we get more information we develop the schedule and 12:31:02
4 so it goes on. 12:31:06
5 So we believe that there's appropriate 12:31:07
6 consideration that has been given to weather 12:31:09
7 downtime, the ice season, which this year we see has 12:31:12
8 not occurred. And I'm happy to conclude and 12:31:17
9 confident to conclude based on our review and 12:31:24
10 assessment of over 39 offshore wind projects, that 12:31:26
11 we believe the 63-month project development and 12:31:29
12 construction schedule is reasonable. 12:31:33
13 This is a very critical slide because 12:31:38
14 it highlights the scheduling advantages we have with 12:31:40
15 regards to construction of an offshore wind farm on 12:31:45
16 Lake Ontario. We have a benign marine environment 12:31:49
17 compared to the majority of the offshore wind farm 12:31:54
18 projects that have been constructed in the North 12:31:57
19 Sea. 12:31:58
20 There is no requirement to bury the 12:32:00
21 array or export cables which allows us to accelerate 12:32:04
22 that part of the development. 12:32:08
23 The intention is to use an onshore, 12:32:11
24 rather than an offshore substation. That's 12:32:14
25 referenced as offshore, but the intention is to 12:32:16

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1 locate that on an island location. 12:32:19
2 There is electrically available 12:32:26
3 facilities and materials for contract in the 12:32:28
4 foundations and turbines. 12:32:30
5 We have a relatively short export 12:32:31
6 cable, only 28 kilometres, compared to what we see 12:32:34
7 in some European examples, 60, 70, 80 kilometres. 12:32:37
8 We are in close proximity to the shore 12:32:42
9 with regards to staging and the offshore 12:32:46
10 construction activities. That is a major advantage 12:32:49
11 compared to those projects being developed in the 12:32:52
12 North Sea. 12:32:54
13 There is no requirement for 12:32:57
14 a custom-built European installation vessel. We can 12:32:58
15 get such technology locally. The intention is to 12:33:02
16 use well understood and tested turbine technology, 12:33:07
17 in the Siemens 2.3 megawatts turbine. 12:33:12
18 We have well categorized geotechnical 12:33:15
19 conditions, and we believe that there is a very 12:33:18
20 robust grid connection-point with the intention to 12:33:21
21 connect into one of the arteries of the main Ontario 12:33:26
22 power transmission system. 12:33:30
23 We consider that the project uses 12:33:38
24 standard procurement practices and our assessment 12:33:40
25 that we can deliver turbines in 14 months is 12:33:43

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1 considered a very reasonable timeframe. 12:33:46
2 That's supported by recent examples of 12:33:50
3 very similar number of turbines and similar size 12:33:53
4 projects in North America. Kay Wind project, for 12:33:58
5 example, is a 14-month delivery of 130 turbines, 12:34:02
6 Siemens 2.3 megawatts turbines. 12:34:13
7 Similarly, there's a project in North 12:34:16
8 Dakota 200 megawatts, and again, it's got a similar 12:34:17
9 scheduling requirement with regards to the 14 months 12:34:17
10 that we claim. 12:34:24
11 The manufacturer of wind turbines, 12:34:26
12 specifically the Siemens 2.3 turbine, is 12:34:27
13 a straightforward and well understood process. 12:34:31
14 Siemens can make a nacelle in one to two days. It 12:34:35
15 is a production turbine. 12:34:41
16 So we disagree with URS conclusion 12:34:42
17 that 24 months would be required for turbine 12:34:45
18 procurement. 12:34:48
19 Every project is unique and an average 12:34:49
20 turbine delivery time is not something that we would 12:34:56
21 use as a guide for project turbine supply. 12:34:58
22 And we expect that the turbine 12:35:04
23 manufacturers, with an interest in capturing 12:35:06
24 a market like this, would be happy to work to help 12:35:08
25 secure turbines to be delivered to beat the 12:35:12

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1 developer's timelines. 12:35:20
2 As noted by Weeks, they began to build 12:35:22
3 a vessel in anticipation of this market opening up. 12:35:28
4 That is something I have seen on many occasions 12:35:31
5 whereby a potential contractor will construct 12:35:35
6 equipment with a view to capture a first mover 12:35:41
7 advantage in the regular market. 12:35:43
8 And it is also standard practice to 12:35:50
9 procure major pieces of equipment to begin the 12:35:52
10 procurement process, to begin the design of, for 12:35:54
11 example, a turbine transformer so we can move more 12:35:57
12 rapidly when the funds become available to purchase. 12:36:02
13 And the last point, there is, yes, 12:36:06
14 it's typical for turbines to be paid for at 12:36:09
15 financial close, but not necessarily on each 12:36:14
16 occasion. 12:36:17
17 It comes down to the appetite for risk 12:36:18
18 of a developer and the financial strength of 12:36:20
19 a developer. 12:36:24
20 I'd like to comment on Siemens 12:36:27
21 2.3 megawatts turbine. This is a workhorse of the 12:36:29
22 industry. It's been deployed in many locations in 12:36:34
23 the offshore environment. 12:36:37
24 Indeed, there are examples of that 12:36:39
25 turbine sitting on Wolfe Island right adjacent to 12:36:41

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1 system, is a major advantage to this project, 12:38:24
2 particularly, given as it has been proven with the 12:38:30
3 Wolfe Island deployment. 12:38:34
4 Finally, on the wind resource of our 12:38:39
5 as assessment of the wind data, the reports that 12:38:44
6 have been prepared by others, lead us to conclude 12:38:47
7 that it is a bankable energy unit for the site. 12:38:53
8 When I look at the Long Point met 12:38:57
9 mast, it's 11 kilometres from the site. It exhibits 12:39:01
10 characteristics of being offshore, despite it being 12:39:06
11 located on a small island. 12:39:11
12 This is because the island is small, 12:39:16
13 it does not have many features to destroy the wind 12:39:18
14 and the mast itself is located on a point, on 12:39:22
15 a split which has very little impact on the 12:39:23
16 measurements being conducted. 12:39:25
17 So when I say exhibits offshore 12:39:28
18 characteristics, I mean we can see low wind sheer 12:39:32
19 and wind turbulence consistent with what we would 12:39:35
20 expect to see in the offshore environment. 12:39:39
21 There's a sufficient amount of robust 12:39:43
22 data that has been collected over a very long period 12:39:45
23 to give us confidence in the energy or protection of 12:39:47
24 this site. 12:39:56
25 And I would also like to note there 12:39:57

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1 the project site. 12:36:44
2 An activity that's proven the concept 12:36:48
3 of being able to bring this turbine into the Ontario 12:36:50
4 lake system, and indeed that project also purchased 12:36:55
5 the concept for connecting to the grid via 12:36:57
6 an undersea cable. 12:37:01
7 So thousands of Siemens 2.3 megawatts 12:37:04
8 turbines operating onshore and offshore globally. 12:37:07
9 There is no material difference between the onshore 12:37:13
10 and offshore versions. And the freshwater 12:37:16
11 environment that we are deploying, means that we are 12:37:19
12 exposed to less risk. For example, we do not need 12:37:23
13 the paint systems that are required to cope with the 12:37:28
14 saltwater environment. 12:37:30
15 I don't need to dwell on this as one 12:37:37
16 of my colleagues has already discussed in detail, 12:37:40
17 the foundation design and deployment. Only to say 12:37:43
18 that this is a standard way of constructing concrete 12:37:48
19 structures in the offshore end environment. 12:37:54
20 The electrical system design, while we 12:37:58
21 have many examples of cables being deployed in the 12:38:04
22 Great Lakes system, including Lake Ontario, it's 12:38:08
23 a well-understood activity and commonly executed. 12:38:12
24 And this ability to connect on to what 12:38:16
25 I said earlier was an artery of the transmission 12:38:20

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1 are many sites in the German sector where they are 12:39:59
2 using government-funded met mass of 100 metres 12:40:03
3 height called FIN01. And that is used to underpin 12:40:06
4 the energy or prediction for sites that are being 12:40:11
5 built tens of kilometres away from the measurement 12:40:17
6 location. 12:40:19
7 So I am very confident that we have 12:40:19
8 sufficient data of sufficient quality to create 12:40:22
9 a bankable wind energy yield prediction for this 12:40:25
10 site. And that is the end of my presentation. 12:40:29
11 PRESIDENT: Thank you very much. 12:40:39
12 Anything further? 12:40:39
13 MS. SEERS: No, no questions. Thank 12:40:40
14 you. 12:40:41
15 PRESIDENT: Thank you very much. 12:40:42
16 I suggest we break now for an hour and continue at 12:40:42
17 1:40. And I would ask you, Mr. Irvine, not to speak 12:40:46
18 with anybody about your testimony. 12:40:50
19 We have reserved a room for you where 12:40:53
20 you can have your lunch. Thank you. 12:40:58
21 THE WITNESS: Thank you. 12:41:00
22 --- Lunch recess taken at 12:41 p m. 12:41:08
23 --- Upon resuming at 1:43 p m. 12:41:08
24 PRESIDENT: Okay, we'll go on, and it 13:42:57
25 will be Ms. Squires. 13:42:58

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1 MS. SQUIRES: For better or worse 13:43:14
2 you're going to hear from me again. 13:43:15
3 CROSS-EXAMINATION BY MS. SQUIRES: 13:43:17
4 Q. Good afternoon, Mr. Irvine. 13:43:25
5 A. Good afternoon. 13:43:34
6 Q. Now, you've certainly had the 13:43:35
7 advantage of sitting through my opening spiel 13:43:37
8 a couple of times this morning so just, again, very 13:43:39
9 briefly. 13:43:42
10 There's a binder in front of you with 13:43:42
11 the tabs for the documents I'll refer to. To the 13:43:44
12 extent the answer to my question is a "yes" or "no," 13:43:48
13 please state that for the record, but feel free to 13:43:52
14 provide any relevant context that you might think is 13:43:55
15 necessary to answer your question completely. 13:43:57
16 A. Okay. 13:44:00
17 Q. We may go into confidential 13:44:00
18 session at some point as well, so we'll do the same 13:44:02
19 as we did this morning and cut the feed as 13:44:04
20 necessary. 13:44:07
21 Now, you filed two expert reports in 13:44:12
22 this arbitration, correct, one in August 2014 and 13:44:14
23 one in June 2015; is that right? 13:44:17
24 A. Yes, I've got them here. 13:44:19
25 Q. Now, you were not retained by 13:44:21

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1 Q. Now, you mentioned in your report 13:45:31
2 and earlier in your presentation that SgurrEnergy 13:45:32
3 was involved in the Cape Wind product; is that 13:45:34
4 correct? 13:45:39
5 A. That's correct. My Portland 13:45:39
6 office personnel were involved in that project. 13:45:41
7 Q. You've heard Mr. Palmer say that 13:45:44
8 based on the best of his knowledge he has from 13:45:46
9 public information, the capital costs were 13:45:48
10 2 billion. 13:45:50
11 Can you confirm whether or not that 13:45:51
12 was correct or provide us with some clarity on that? 13:45:53
13 A. I cannot provide you with any 13:45:56
14 clarity on the capital costs associated with 13:45:57
15 Cape Wind because I was not personally involved in 13:46:00
16 that project. 13:46:02
17 Q. Okay. So you have -- based on the 13:46:02
18 knowledge of SgurrEnergy in general, you have no 13:46:05
19 further information on the capital cost of -- 13:46:08
20 A. I have no knowledge of the capital 13:46:11
21 cost on the Cape Wind project. That was executed 13:46:13
22 from our Portland office in Maine. 13:46:16
23 Q. I want to take you to your first 13:46:19
24 report then, and we'll look at page 112. In that 13:46:22
25 second paragraph there, you refer to the schedule 13:46:31

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1 Windstream prior to February 12011; correct? 13:44:23
2 A. Personally or my company? 13:44:28
3 Q. Your company. 13:44:30
4 A. That's correct. 13:44:31
5 Q. Now, both of the reports that you 13:44:32
6 filed, they opine on the technical feasibility of 13:44:34
7 the project; correct? 13:44:37
8 A. That's correct, based on the 13:44:40
9 information that was made available. 13:44:41
10 Q. Now, but SgurrEnergy, in general 13:44:43
11 as part of their business model, it conducts 13:44:46
12 bankability analysis of different offshore projects; 13:44:49
13 correct? 13:44:53
14 A. In effect, that is what we offer. 13:44:53
15 We undertake an assessment of the risks in a 13:44:55
16 project, and get it to a position where the risk 13:45:00
17 level could be appropriate to receive bank debt. 13:45:02
18 Q. Okay. Now, for the purposes of 13:45:08
19 this arbitration, then, you didn't provide any cost 13:45:10
20 estimates for Windstream; correct? 13:45:12
21 A. That's correct. This was only on 13:45:15
22 the basis of a technical assessment of a theoretical 13:45:17
23 project which could have been built at the site, 13:45:21
24 based on the information that was available at the 13:45:24
25 time. 13:45:27

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1 reviewed by SgurrEnergy; do you see that, in the 13:46:33
2 second paragraph? 13:46:45
3 A. Yes, I see that. 13:46:47
4 Q. And at the very bottom, you note 13:46:52
5 that the project schedule, based on the award of the 13:46:53
6 FIT contract was included in your report as appendix 13:46:57
7 B; correct? 13:46:59
8 A. Could you just explain that again, 13:47:03
9 please? 13:47:04
10 Q. So I'm just -- the schedule then 13:47:05
11 that you are referring to there is the one that you 13:47:07
12 attached as appendix B to your report; is that 13:47:09
13 correct? 13:47:12
14 A. I would say that that's -- I'd 13:47:12
15 just like to look at the -- 13:47:17
16 Q. Take your time. 13:47:20
17 A. Appendix 3 you say? 13:47:21
18 Q. Appendix B. If it helps you, 13:47:24
19 we've also included it as Tab 1 in your binder. 13:47:26
20 A. Because appendix B is a blank 13:47:30
21 page. 13:47:32
22 Q. So it's page 12 in your binder; 13:47:33
23 we've included a copy -- or Tab 12, sorry. 13:47:36
24 A. Okay. 13:47:45
25 Q. It notes there at the top in very 13:47:48

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1 small writing that this is the overall project 13:47:50
2 development schedule highlights, revised 13:47:52
3 February 17th, 2011; do you see that? 13:47:55
4 A. Yes. I can see that. 13:47:57
5 Q. Okay. Now, if you can keep that 13:47:59
6 one out of the binder if it's easier, but we'll turn 13:48:01
7 to Tab 10. This is Exhibit R-138 for the record. 13:48:05
8 This appears to be the same schedule 13:48:29
9 just an earlier version, correct? It's dated 13:48:31
10 August 12, 2011? 13:48:33
11 A. I don't know if I'm looking at the 13:48:35
12 correct page here. Tab 9? 13:48:36
13 Q. So, it starts on page 9 there in 13:48:57
14 Tab 10. 13:49:01
15 A. They certainly look similar. 13:49:08
16 Q. The earlier one we looked at looks 13:49:15
17 like an updated version or at least a similar 13:49:19
18 version of that one you have in your hand, correct, 13:49:21
19 of the R-138? 13:49:23
20 A. Yep, they look similar but 13:49:26
21 I couldn't really -- deduce anything from either of 13:49:28
22 these. 13:49:33
23 Q. Okay. But on their face they look 13:49:34
24 quite similar? 13:49:37
25 A. Pictorially, yes. 13:49:38

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1 that should be there. 13:51:29
2 PRESIDENT: Where do we have the date? 13:51:36
3 MS. SQUIRES: It's on the very top of 13:51:38
4 the schedule there in very small writing. It says 13:51:39
5 "Overall project development, scheduled highlights, 13:51:42
6 August 28th, 2010," Exhibit C-057. 13:51:45
7 THE WITNESS: Mine's got a hole where 13:51:50
8 it would say... 13:51:51
9 BY MS. SQUIRES: 13:51:52
10 Q. So we'll look at the one up here 13:51:52
11 on the screen. I'm getting nowhere with this 13:51:53
12 clearly. It says on the screen there, 13:51:57
13 "October 28th, 2010"? 13:51:58
14 PRESIDENT: For the record, I was 13:52:00
15 asking for the same reason. 13:52:01
16 (LAUGHTER) 13:52:04
17 BY MS. SQUIRES: 13:52:04
18 Q. We're getting sneaky with this 13:52:04
19 one. All right. So, generally then, all these are 13:52:07
20 the same in terms of their method of preparation. 13:52:11
21 They're all different schedules 13:52:13
22 derived from the Excel program; correct? 13:52:16
23 A. As far as I can see, yes. 13:52:19
24 Q. Now, to the best of your 13:52:21
25 knowledge, April 28th, 2010 schedule, the one that 13:52:24

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1 Q. Okay. If we just turn back to the 13:49:39
2 first page of that document at Tab 10, I just want 13:49:44
3 to look at the date there. 13:49:46
4 It's dated August 30th, 2010; correct? 13:49:47
5 A. Yes, I can read that. 13:50:03
6 Q. This is the schedule -- are you 13:50:04
7 aware that FIT signed Windstream signed its FIT 13:50:06
8 contract on August 20, 2010? 13:50:10
9 A. Yes, I'm aware of that. 13:50:12
10 Q. So this would be the schedule that 13:50:13
11 would be in their hands ten days after that; 13:50:14
12 correct? 13:50:17
13 A. I can only assume so. 13:50:17
14 Q. Now we're going to turn to Tab 4 13:50:19
15 in your binder. 13:50:21
16 This, again, is the same type of Excel 13:50:33
17 schedule. This one says that it's dated 13:50:35
18 October 28th, 2010, and it is Exhibit C-0375. 13:50:38
19 So that one, again, same format, all 13:50:42
20 different Excel schedules; correct? 13:50:46
21 A. It says "Revised August 1, 2014" 13:50:49
22 on this. 13:50:52
23 Q. Give me one second. We're looking 13:51:01
24 at Tab 4. I think you might be in Tab 3, possibly. 13:51:22
25 If not, I can provide you with a corrected exhibit 13:51:26

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1 you have there in front of you, that's the only one 13:52:27
2 Windstream would have had available on February 11, 13:52:30
3 2011; is that correct? 13:52:37
4 A. Yes, I believe that would be 13:52:38
5 appropriate for a project in this stage of its 13:52:40
6 development. 13:52:42
7 Q. Okay. Let's go your second 13:52:43
8 report and look at the second paragraph on page 78. 13:52:44
9 And if we're in that second paragraph 13:52:51
10 there on page 78, you criticised URS reliance on 13:53:15
11 this type of schedule in their first report noting 13:53:20
12 that was not intended or provided for use as 13:53:24
13 a detailed project schedule, and that accordingly, 13:53:26
14 project schedule assumptions drawn from this document 13:53:28
15 would invariably lead to inaccurate conclusions; do 13:53:32
16 you see that? 13:53:35
17 A. Yes, I can see that. 13:53:35
18 Q. So, if I understand correctly 13:53:37
19 then, the conclusion we can draw from this is that 13:53:38
20 given Windstream itself was relying on this schedule 13:53:42
21 when it signed the FIT contract, they never should 13:53:44
22 have, and it would have led to inaccurate conclusion 13:53:48
23 on the part of Windstream as well? 13:53:51
24 A. Well, I believe that the schedule 13:53:52
25 would have been developed based on the legislation 13:53:56

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1 associated with the FIT contract, and that assumes 13:54:01
2 five-year development window with an overlap of 13:54:03
3 about 18 months or thereabouts. 13:54:08
4 So I would think it's perfectly 13:54:11
5 reasonable for the developer to have a schedule that 13:54:13
6 fits around that based upon the information that 13:54:18
7 they had available to themselves at that time. 13:54:20
8 I would further expect that a schedule 13:54:26
9 like this is developed as we progress through the 13:54:28
10 project. 13:54:31
11 As I said in my presentation, I would 13:54:34
12 expect 20, 30, 40 revisions of this as we progress 13:54:35
13 through the development collecting more information 13:54:43
14 about the sea state, about the sea bed to show -- 13:54:45
15 that is what I conclude from this. 13:54:52
16 Q. Okay. So your report though does 13:54:55
17 indicate that reliance on that type of schedule 13:54:57
18 would lead to inaccurate assumptions. 13:54:59
19 We agreed there; correct? 13:55:01
20 A. A degree of uncertainty in this, 13:55:03
21 based upon the information that's available at the 13:55:06
22 time. 13:55:09
23 Q. Okay. 13:55:10
24 A. So the only information available 13:55:10
25 at the time was the information around which the FIT 13:55:12

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1 Q. Okay. 13:56:34
2 A. It's a hypothetical situation, 13:56:34
3 based on a hypothetical development. 13:56:39
4 Q. Right, and I understand that's how 13:56:41
5 you present it in your report, but my question then 13:56:42
6 pertained to this schedule itself and the 13:56:45
7 conclusions that you've drawn from that schedule. 13:56:48
8 But, so this is the schedule you are 13:56:50
9 going to use on February 11th, 2011, and you would 13:56:52
10 agree that the people that were retained to input 13:56:55
11 into this schedule, so COWI, Weeks, Baird, none of 13:56:58
12 those were retained as of that date; correct? 13:57:03
13 A. I believe there was an engagement 13:57:06
14 with Weeks as was discussed earlier, but why would 13:57:08
15 you retain anyone if there was a moratorium on the 13:57:11
16 development of the project? 13:57:14
17 Q. Well, let's say as of 13:57:17
18 February 10th, 2011, before there was a deferral, 13:57:18
19 none of those individuals were retained; correct? 13:57:21
20 A. That's correct, but they could 13:57:23
21 have been retained on February 11th. 13:57:24
22 Q. All right. Now, I want to discuss 13:57:28
23 a few of the activities then that you have in that 13:57:30
24 hypothetical schedule as you put it. And let's turn 13:57:32
25 to line 29. 13:57:36

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1 contract or offshore wind development was designed, 13:55:16
2 which presumably was based on the best available 13:55:20
3 information that was held by the offerer of the FIT 13:55:25
4 contract. 13:55:31
5 Q. Okay. Well, given that you had -- 13:55:32
6 you had raised issues with that as a preliminary 13:55:36
7 type schedule or as you mentioned, it's not -- at 13:55:39
8 least inaccurate assumptions. 13:55:43
9 You for your second report developed 13:55:46
10 the type of schedule that you just raised there 13:55:48
11 using MS project; correct? 13:55:50
12 A. Yes, that's correct. 13:55:53
13 Q. And you commenced that this is the 13:55:54
14 type of schedule that you would have had had if 13:55:56
15 a deferral was lifted, for example? 13:55:59
16 A. This is the type of schedule that 13:56:01
17 we would have begun to develop if there was no 13:56:02
18 moratorium. 13:56:07
19 Q. Now, this new schedule does not 13:56:09
20 allow any time though to go from that Excel schedule 13:56:11
21 to this new schedule; correct? 13:56:15
22 A. It assumes on February 11, 2011 13:56:18
23 that that's the schedule you had in your hands. 13:56:21
24 This is based upon an assumption that we'd begin 13:56:23
25 work on the project on February 11. 13:56:30

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1 This line is discussed -- 13:57:44
2 MR. BISHOP: Sorry, which documents 13:57:48
3 are we looking at? 13:57:49
4 BY MS. SQUIRES: 13:57:51
5 Q. Oh, sorry. The giant schedule. 13:57:51
6 It's taken on a new nickname of the giant schedule. 13:57:52
7 We're on line 29. All right. Now, 13:57:59
8 line 29, it's discussing bat field surveys; do you 13:58:21
9 see that? 13:58:24
10 THE WITNESS: I can see that, yes. 13:58:24
11 BY MS. SQUIRES: 13:58:25
12 Q. And it indicates that they start 13:58:25
13 on February 11th, 2011; correct? 13:58:27
14 A. I can see that also, but I would 13:58:29
15 like to say that I have no knowledge of bat field 13:58:31
16 surveys. This is an area of expertise which was 13:58:35
17 subcontracted to WSP. This is not my area of 13:58:40
18 knowledge. 13:58:45
19 Q. Okay, but this is a schedule that 13:58:45
20 you developed; correct? 13:58:47
21 A. In association with WSP. This is 13:58:48
22 their input into this schedule. And I have no 13:58:50
23 reason to doubt their beliefs and what can be 13:58:54
24 achieved with regards to the whole of the permitting 13:58:58
25 activity. They are a local consultant with 13:59:02

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1 experience in Canada, and my experience of project 13:59:06
2 development is that you recruit local environmental 13:59:10
3 consultants, with local experience. 13:59:14
4 So, I'm relying upon WSP with regards 13:59:18
5 to its knowledge and experience locally. 13:59:20
6 Q. All right. So to the extent -- so 13:59:25
7 you've relied entirely on WSP's opinion for all 13:59:27
8 permitting aspects of this schedule? 13:59:31
9 A. All permitting aspects, yes, 13:59:33
10 that's correct. They are the experts in their field 13:59:35
11 in this area, and that's what I would do if I was 13:59:37
12 involved in any project anywhere in the world. 13:59:41
13 I would rely upon a local environmental specialist 13:59:43
14 that has the appropriate understanding of local 13:59:48
15 legislation. 13:59:51
16 Q. Okay. 13:59:52
17 MS. SEERS: If I may interject, 13:59:53
18 I just -- perhaps it could assist. The schedule, as 13:59:54
19 you'll see at the top, indicates, and I believe it's 13:59:57
20 explained both in the reply memorial and in the 14:00:00
21 Sgurr report that it was prepared in conjunction 14:00:06
22 collaboratively by Sgurr, Baird, WSP, COWI and 14:00:10
23 Weeks, and so each of them contributed within their 14:00:13
24 respective areas of expertise. 14:00:16
25 BY MS. SQUIRES: 14:00:18

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1 Q. Yeah, so my questions pertain to, 14:00:18
2 as Mr. Irvine is the individual who developed this 14:00:20
3 schedule with that input, I just have questions on 14:00:23
4 the timing of certain activities. 14:00:25
5 If you don't -- if you -- I understand 14:00:27
6 that you might have relied on WSP's expertise for 14:00:28
7 those certain events, but I just wanted to more so 14:00:33
8 acknowledge that certain events happened on certain 14:00:36
9 days, not whether or not it was appropriate to have 14:00:38
10 that data on that day for now. 14:00:40
11 MS. SEERS: Well, and just to further 14:00:43
12 clarify, if I can assist, the actual dates were 14:00:45
13 provided by Mr. Roberts and so, yes, it's true to 14:00:47
14 say that Sgurr held the pen or the keyboard, so to 14:00:51
15 speak, in terms of inputting that data into the 14:00:55
16 schedule, but the actual dates were provided by WSP 14:00:57
17 in the -- with respect to those activities. And so 14:01:02
18 Mr. Irvine is not in a position to -- unless your 14:01:05
19 question -- unless Ms. Squires' question is about 14:01:10
20 mechanically inputting data from another consultant 14:01:13
21 into the program, we're outside of Mr. Irvine's 14:01:18
22 scope of expertise here. 14:01:20
23 PRESIDENT: Well, it is appropriate to 14:01:22
24 explore the precise role of the expert in terms of 14:01:24
25 coordinating the input from the various sources, so 14:01:28

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1 that's fine. 14:01:32
2 MS. SEERS: And certainly, 14:01:34
3 Mr. President, Mr. Irvine can speak to that 14:01:34
4 coordinating aspect if not the content. 14:01:37
5 Pardon me, by microphone was off. 14:01:41
6 Certainly Mr. Irvine can speak to the coordination 14:01:44
7 aspect of this, but not to the content of the areas 14:01:46
8 outside the scope of his expertise. 14:01:49
9 THE WITNESS: Just for clarity, I run 14:01:52
10 quite a lot of business and I don't personally have 14:01:54
11 expertise in Microsoft Project. I rely on 14:01:57
12 individuals to take that information and put it into 14:02:02
13 a program that I would then encourage to be 14:02:05
14 stress-tested and compared against the real world. 14:02:09
15 That's my role in all this. It's not down at the 14:02:13
16 detail level and putting data into this project. 14:02:16
17 BY MS. SQUIRES: 14:02:21
18 Q. To confirm, then, you didn't do 14:02:21
19 any independent checking of the information that WSP 14:02:23
20 provided for the permitting, is the conclusion I'm 14:02:27
21 taking. 14:02:29
22 A. I did independent checking 14:02:30
23 inasmuch as I have personally compared the duration 14:02:31
24 shown on this schedule with my knowledge and our 14:02:35
25 database of project developments elsewhere. And 14:02:39

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1 that is why I have been able to conclude that this 14:02:42
2 is a reasonable schedule. 14:02:45
3 Q. Okay, so you have done some 14:02:47
4 overall comparison of times? 14:02:49
5 A. Personally, I have done that, yes. 14:02:50
6 Q. Okay, let's look at line 143. It 14:02:53
7 indicates there that the activity surrounding the 14:03:06
8 on-shore foundation fabrication facility commenced 14:03:09
9 on December 11th, 2011; do you see that? 14:03:12
10 A. Yes. I can see that. 14:03:17
11 Q. And this more technical work is 14:03:19
12 within the realm of your report; correct? Your 14:03:22
13 report comments on -- 14:03:26
14 A. Yes, based on information supplied 14:03:27
15 to us by COWI, who is the expert in this area. 14:03:29
16 Q. Okay, now, to your knowledge, no 14:03:32
17 site had been secured as of February 11th, 2011; 14:03:36
18 correct? 14:03:39
19 A. That's correct. I think that's 14:03:40
20 a reasonable position given the state of development 14:03:43
21 of the project. 14:03:46
22 Q. Okay, so, you would agree with me 14:03:47
23 then that you would need to build some time into the 14:03:50
24 schedule in order to negotiate with someone to 14:03:54
25 obtain access to such facility; correct? 14:03:56

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1 A. Well, we have MNR land use permit, 14:04:15
2 fabrication facility on line 44. Underneath that we 14:04:19
3 have "Repair application to fabrication" on 14:04:23
4 line 145, which looks like it's kicking in August or 14:04:27
5 thereabouts, so one would expect there is time to 14:04:33
6 discuss with those associated with land ownership. 14:04:38
7 Q. Sorry, can you indicate to me what 14:04:44
8 lines you are referring to? 14:04:46
9 A. Line 145. 14:04:47
10 Q. Okay, so the MNR land use permit? 14:04:54
11 A. 146, 147. 14:04:57
12 Q. Uh-hmm. 14:04:59
13 A. So it looks to me like there is 14:05:04
14 a period of discussion and opportunity. 14:05:06
15 Q. So, this appears to be discussion, 14:05:12
16 as you've mentioned, with MNR, which is the Ministry 14:05:14
17 of Natural Resources, but there is nothing in the 14:05:16
18 schedule to include for discussion with the owner of 14:05:19
19 the facility in terms of commercial negotiation, 14:05:21
20 say? 14:05:24
21 A. Well, this says "Program," which 14:05:25
22 is about a hypothetical situation. This does not 14:05:31
23 include anything with regards to negotiating of 14:05:34
24 a particular area of land, nor does it include 14:05:39
25 anything with regards to project financing, for 14:05:42

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1 Q. So that might be in the just -- 14:07:07
2 when we get further. Just give me one minute, I'll 14:07:09
3 find you the exact line. 14:07:17
4 A. I can see it now. 14:07:20
5 Q. Are you there? Maybe you can 14:07:25
6 remind me which line it is. Okay, so line 678 says: 14:07:27
7 "The REA approval period -- appeal 14:07:37
8 period ends on August 12th, 2013." 14:07:40
9 What follows after that on line 69 is 14:07:51
10 an additional six months for the Environmental 14:07:54
11 Review Tribunal; correct? 14:07:56
12 A. That is what has been indicated by 14:07:58
13 the schedule, but can I repeat that I am reliant 14:08:01
14 upon a local consultant to feed into this 14:08:05
15 information. I do not fully understand the detail 14:08:08
16 of the process with regards to permitting. 14:08:13
17 Q. Okay -- 14:08:18
18 A. That is why WSP is involved in 14:08:19
19 this development. 14:08:22
20 Q. Yes, and I understand that those 14:08:24
21 inputs came from them but I'm merely asking you to 14:08:25
22 confirm the time periods that are incorporated into 14:08:28
23 the schedule. So we have 30 months for the 14:08:34
24 renewable energy renewable energy approval and then 14:08:37
25 six months for the Environmental Review Tribunal; 14:08:38

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1 example, as I would expect that these activities 14:05:46
2 would be undertaken by the project developer, this 14:05:49
3 is a technical schedule to try and establish whether 14:05:52
4 it would be technically feasible to achieve the 14:05:55
5 commercial operation date that has been specified. 14:05:59
6 Q. Okay, so this is an early stage 14:06:01
7 project schedule used to identify the technical 14:06:05
8 feasibility of the project? 14:06:08
9 A. That's correct. It's early stage, 14:06:10
10 and we would continue to develop this throughout the 14:06:11
11 duration of the project. 14:06:15
12 Q. All right. Let's stay on that 14:06:18
13 schedule there, and I want to look at line 7. And 14:06:23
14 line 7 indicates that indicates that the project 14:06:25
15 would receive financial close on December 11, 2014; 14:06:35
16 correct? 14:06:39
17 A. It states that, yes, that's 14:06:39
18 correct. 14:06:40
19 Q. And if we go to line 9, it 14:06:41
20 indicates that the renewable energy process -- so 14:06:43
21 the environmental permitting commences on 14:06:47
22 February 11th, 2011, and ends with a REA appeal 14:06:49
23 period on August 12th, 2013. Do you see that? 14:06:53
24 A. REA appeal period. I can't see 14:07:01
25 that, sorry. 14:07:06

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1 correct? 14:08:44
2 A. Yes, that is what is written in 14:08:44
3 the schedule. 14:08:51
4 Q. Now, last week we heard some 14:08:52
5 testimony from Ms. Sarah Powell, and she confirmed 14:08:52
6 that, based on her experience, the typical time to 14:08:54
7 receive a renewable energy approval is 36 months, 14:08:56
8 and then there's an additional 6 months beyond that 14:08:59
9 for the Environmental Review Tribunal, so the total 14:09:02
10 being 42 months. 14:09:05
11 So if we rely on this testimony then, 14:09:05
12 the renewable energy approval would occur on 14:09:08
13 February 11, 2014; is that correct, six months 14:09:12
14 later? 14:09:15
15 MS. SEERS: Again, Mr. Chair, this is 14:09:16
16 a scope that's been covered by both Ms. Powell and 14:09:17
17 Mr. Roberts and is outside the scope of Mr. Irvine's 14:09:22
18 expertise, and I'm not certain that we need Mr. 14:09:24
19 Irvine to tell us what the dates would be if the 14:09:27
20 schedule was moved by six months. 14:09:32
21 BY MS. SQUIRES: 14:09:33
22 Q. I apologize. I'm not asking 14:09:33
23 Mr. Irvine to comment on the appropriateness of 14:09:36
24 those dates but merely when they occur in the 14:09:38
25 schedule, and if we were to take the evidence of 14:09:40

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1 Ms. Powell, what impact that would have on the 14:09:42
2 schedule. 14:09:44
3 PRESIDENT: Yes, it's fine to ask 14:09:45
4 questions about what the impact would be on the 14:09:47
5 schedules. 14:09:48
6 BY MS. SQUIRES: 14:09:52
7 Q. So if the renewable energy 14:09:52
8 approval, then, was pushed back six months from 14:09:54
9 August 2013, the renewable energy approval would 14:09:57
10 arrive on February 11th, 2014; correct? 14:09:59
11 A. That is correct. But looking at 14:10:04
12 the context of this, I am reliant on WSP. I'm not 14:10:08
13 aware of Ms. Powell's testimony or what context that 14:10:13
14 was spoken in. I'm reliant upon WSP as an expert in 14:10:16
15 the field -- 14:10:21
16 Q. Yes. 14:10:23
17 A. -- to give me the numbers 14:10:23
18 appropriate here. 14:10:24
19 Q. I understand that that's where 14:10:26
20 your numbers came from, but you would agree with me, 14:10:27
21 if Ms. Powell is right, who was also one of the 14:10:30
22 claimants' experts, your schedule would shift by six 14:10:33
23 months? 14:10:36
24 A. By arithmetic, that is correct. 14:10:38
25 Q. Okay, so that means, then, based 14:10:41

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1 on your schedule, that there's another six months of 14:10:43
2 Environmental Review Tribunal, so that would occur 14:10:48
3 on August 11th, 2014, and financial close would 14:10:50
4 happen on that date instead, based on her opinion? 14:10:53
5 A. That is a possibility that 14:10:57
6 I consider unlikely based on the information that 14:11:00
7 I have received from a competent environmental 14:11:02
8 consultant. 14:11:05
9 Q. Okay, so, if we -- taking what 14:11:06
10 Ms. Powell said -- and, again, I'm just trying to 14:11:11
11 understand the consequence of what that would have 14:11:14
12 for the schedule if her testimony is right. The 14:11:16
13 consequence would be that you would lose six months 14:11:19
14 in the construction schedule; correct? Instead of 14:11:21
15 starting on February, you're now starting in August? 14:11:25
16 A. Well, it's arithmetic correct, but 14:11:27
17 I'm reliant upon WSP's information and a detailed 14:11:30
18 breakdown of the components that feed in to being 14:11:36
19 able to get the relevant permits. I have not seen 14:11:41
20 or heard Ms. Powell's testimony. I don't know how 14:11:45
21 much reliance one can place on that. This is 14:11:47
22 a local environmental consultant who has broken down 14:11:51
23 the permitting process into its constituent parts 14:11:58
24 and put them in an order that I am comfortable with. 14:12:02
25 And I would take precedence on this information over 14:12:06

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1 information that perhaps does not have the same 14:12:10
2 level of detail and that I also have not seen, 14:12:13
3 unfortunately. 14:12:17
4 Q. Okay, well, you mentioned that the 14:12:18
5 schedule doesn't include any line items for 14:12:21
6 negotiation with lenders; correct? 14:12:25
7 A. That's correct, it is a technical 14:12:27
8 schedule. 14:12:29
9 Q. Now, in the claimants' opening 14:12:30
10 arguments in this arbitration, they noted that the 14:12:34
11 six months between the renewable energy approval and 14:12:36
12 the Environmental Review Tribunal, that's when 14:12:39
13 negotiations would take place; are you aware of 14:12:43
14 that? 14:12:46
15 A. I'm not aware of that, 14:12:46
16 unfortunately. 14:12:47
17 Q. Okay, so I wanted to look at 14:12:48
18 tab 20 in your binder. And this is Exhibit C-1907 14:12:50
19 for the record. If we look at the flow chart there 14:13:10
20 about halfway down the page, this is for the 14:13:17
21 Dudgeon -- and correct me if I am entirely saying 14:13:19
22 that wrong, but I -- 14:13:25
23 A. Dudgeon. 14:13:25
24 Q. Oh, there we go, Dudgeon. 14:13:26
25 It indicates there on the second part 14:13:26

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1 of the flow chart that consents were authorized in 14:13:28
2 July 2012; do you see that? 14:13:31
3 A. I can see that, yes. 14:13:33
4 Q. And if we move ahead on the flow 14:13:34
5 chart it says financing was secured in July of 2014; 14:13:37
6 can you see that? 14:13:41
7 A. I can see that also. 14:13:42
8 Q. So for this chart, they have -- or 14:13:43
9 for this project at least, there was a two-year 14:13:44
10 period between permitting and financial close; 14:13:46
11 correct? 14:13:50
12 A. I think it's correct. It's 14:13:50
13 interesting, but I don't think its relevant for this 14:13:52
14 specific project. This is a different environment 14:13:55
15 subject to different regulatory regimes, subject to 14:13:58
16 different permitting regime. So I'm not sure what 14:14:03
17 conclusions one can draw from this information in 14:14:11
18 relation to the proposed project here. 14:14:14
19 Q. So I'm looking for the -- if you 14:14:17
20 leave the permitting regime aside, if we are looking 14:14:19
21 at the date, once the permitting has been obtained, 14:14:22
22 so all delays relating to permitting would be dealt 14:14:26
23 with at that point, they had two years before they 14:14:29
24 reached financial close; correct? 14:14:31
25 A. In this specific project, that 14:14:33

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1 would appear to be correct. 14:14:34
2 Q. And if we turn to the next tab, 14:14:36
3 Tab 21 -- 14:14:37
4 MS. SEERS: Again, Mr. Chair, this 14:14:40
5 witness is not an expert in financing or financial 14:14:41
6 close. We have other experts that are experts in 14:14:44
7 that area. As you'll have noted, there are a lot of 14:14:46
8 experts who contributed to this schedule because it 14:14:49
9 spans a lot of ground and so, again, I would ask 14:14:51
10 that only questions relevant to Mr. Irvine's direct 14:14:54
11 expertise be posed to him. And, of course, the 14:14:59
12 mechanics of how the schedule operates. 14:15:03
13 PRESIDENT: Well, it's fine to explore 14:15:05
14 the limits of what his role was in putting together 14:15:07
15 the overall schedule. How useful it is, it's for 14:15:10
16 you to determine, then, and it's for you to put the 14:15:13
17 questions in such a way that the information will be 14:15:17
18 useful for the Tribunal. 14:15:18
19 But it is about exploring the limits 14:15:20
20 of his role in the -- in putting together the 14:15:24
21 overall schedule. 14:15:28
22 BY MS. SQUIRES: 14:15:31
23 Q. So, on that note, let's turn to 14:15:32
24 Tab 21. And again, I'm just asking for confirmation 14:15:35
25 on the dates here. This is Exhibit C-1908 and this 14:15:38

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1 Again, it is for the Respondent to put 14:16:54
2 the questions in such a way that the information 14:16:57
3 extracted from the witness is useful for the 14:16:59
4 Tribunal. 14:17:02
5 It's fine, again, to explore the 14:17:04
6 limits of his role, but try to keep it on that 14:17:06
7 limit. He won't be able to comment on issues that 14:17:09
8 go outside his area of expertise. 14:17:12
9 BY MS. SQUIRES: 14:17:14
10 Q. Sure. Perhaps then one very small 14:17:14
11 question on this then: On the schedule itself you 14:17:17
12 noted that there was input from SgurrEnergy, Baird, 14:17:21
13 WSP, COWI and Weeks Marine. Can you tell me which 14:17:24
14 one of those five individuals, questions on 14:17:28
15 financing should have been addressed to? 14:17:32
16 A. From my knowledge, none of these 14:17:45
17 companies have got a detailed working knowledge of 14:17:46
18 the financing process. 14:17:49
19 PRESIDENT: Maybe I'll put the 14:17:50
20 question then in these terms: You didn't look at 14:17:51
21 financing because financing is not part of the 14:17:55
22 technical -- it's not in the critical path of the 14:17:57
23 technical project? 14:18:00
24 THE WITNESS: That's correct. We were 14:18:01
25 looking at the technical feasibility as to whether 14:18:02

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1 is the same kind of representation, but for the 14:15:44
2 Gemini project; correct? 14:15:46
3 A. I can see pictorially it is the 14:15:47
4 same. But I'm -- this information is 14:15:50
5 project-specific and only applies to this project. 14:15:55
6 One could go and choose, cherry pick other projects 14:15:58
7 that showed different durations, shorter durations. 14:16:02
8 Q. Okay, so I guess the point then to 14:16:06
9 take from what you're saying is that you have chosen 14:16:08
10 six months but in some circumstances that can be 14:16:11
11 less; in other circumstances that could be more -- 14:16:13
12 or someone has chosen six months for you, and in 14:16:15
13 some circumstances that's less, some circumstance it 14:16:18
14 could be more? 14:16:20
15 MS. SEERS: Again, Mr. Chair, 14:16:21
16 something is being put to the witness that we've 14:16:22
17 already indicated is not his input, and so we 14:16:24
18 maintain the objection that only questions relevant 14:16:28
19 to Mr. Irvine's specific input into this schedule 14:16:32
20 should be put to him, and we object to propositions 14:16:36
21 like the one Ms. Squires just put to him about 14:16:39
22 whether six months was inserted by him or by 14:16:44
23 somebody else. 14:16:47
24 PRESIDENT: Well, we are following the 14:16:48
25 questioning and we take note of the answers. 14:16:51

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1 a hypothetical project could be constructed. We 14:18:05
2 were not looking at the feasibility with regards to 14:18:08
3 whether it could be financed. 14:18:12
4 MS. SEERS: And if I may assist, 14:18:14
5 Mr. Chair, the relevant witness to put questions of 14:18:16
6 that nature to are the Deloitte witnesses. 14:18:20
7 PRESIDENT: The issue though here is 14:18:23
8 something different. It's a question of whether 14:18:24
9 arrangements for financing would have been -- or 14:18:26
10 should have been part of the schedule. Maybe the 14:18:28
11 question should be in terms of whether it was 14:18:31
12 appropriate to exclude financing from this schedule. 14:18:32
13 MS. SQUIRES: Okay, I think that's 14:18:37
14 clear to us now on who to ask those questions to. 14:18:38
15 MS. SEERS: And, of course, in 14:18:42
16 addition, the developers themselves would have that 14:18:43
17 information. So, Mr. Baines, Mr. Mars, rather. 14:18:46
18 PRESIDENT: Yes, although the issue 14:18:50
19 with the financial experts would be about the timing 14:18:54
20 of obtaining financing and the program -- the steps 14:18:57
21 to be taken for financing, whereas here we are 14:19:00
22 exploring whether there is any relevant interface 14:19:02
23 between the technical program and the arrangements 14:19:05
24 for financing, which is a legitimate -- legitimate 14:19:07
25 subject to explore, but I understand your answer is 14:19:12

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1 that there is no -- there is no connection in terms 14:19:15
2 of -- in terms of the technical program. It's not 14:19:19
3 part of financing, arranging for financing is not 14:19:23
4 part of the technical process. 14:19:28
5 THE WITNESS: That's correct. 14:19:30
6 PRESIDENT: So I think we can move 14:19:30
7 on to another subject. 14:19:31
8 MS. SQUIRES: All right, well, we'll 14:19:36
9 move on to something else. 14:19:37
10 BY MS. SQUIRES: 14:19:39
11 Q. Let's look at line 69 of your 14:19:39
12 schedule. 14:19:46
13 Again, I'm merely asking to confirm 14:19:47
14 that a certain event takes place on a certain day 14:19:48
15 but I'm not going to look into the accuracy of that 14:19:51
16 event. 14:19:53
17 It says there that the Environment 14:19:54
18 Review Tribunal will be done as of February 11th, 14:19:58
19 2014; is that correct? 14:20:01
20 A. I can see that, yes. 14:20:02
21 Q. And if we look at line 8, we see 14:20:03
22 there that you have indicated a commercial operation 14:20:11
23 date of May 23rd, 2016; correct? 14:20:13
24 A. I can see that also. 14:20:16
25 Q. So this project has gone from 14:20:18

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1 knowledge from WSP, with regards to what it believes 14:21:21
2 can be achieved regarding permitting. 14:21:26
3 I'm also assuming that there was some 14:21:29
4 appetite from the Canadian government with regards 14:21:32
5 to stimulating and developing offshore wind. 14:21:35
6 There would have been some 14:21:38
7 encouragement, but for putting these projects into 14:21:39
8 moratorium. Presumably at some time it had a desire 14:21:44
9 to see offshore wind built, and, therefore, one 14:21:49
10 would expect there would be an encouragement to put 14:21:51
11 the necessary components in place to facilitate the 14:21:55
12 development achieved, the desired financial close, 14:22:03
13 and the desired operational date. 14:22:06
14 Q. Okay, so, in comparison to other 14:22:08
15 examples of projects that have been developed, your 14:22:12
16 conclusion is that Windstream would have gone from 14:22:15
17 permitting to commercial operation in -- faster than 14:22:20
18 any other project because of the situation that they 14:22:23
19 were in? 14:22:25
20 A. Well, when one is comparing what 14:22:27
21 is happening in Canada to the regime elsewhere, they 14:22:30
22 are not comparable. So that's -- it's fast. I can 14:22:33
23 only assume that my colleagues in WSP believe that 14:22:38
24 they can progress this project through the 14:22:42
25 permitting process at that pace. 14:22:45

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1 receiving its permitting to commercial operation in 14:20:19
2 approximately 27 months; correct? 14:20:24
3 MS. SEERS: Just to -- I apologize, 14:20:27
4 I don't mean to continuously interject, but I would 14:20:28
5 request that Ms. Squires state the questions 14:20:32
6 accurately. 14:20:34
7 The permitting would have been 14:20:35
8 received six months before the conclusion of the ERT 14:20:37
9 proceeding according to this schedule. 14:20:40
10 MR. SPELLISCY: I'm sorry, that -- 14:20:50
11 seemed to be testimony from Ms. Seers. 14:20:50
12 PRESIDENT: Well, these are the kinds 14:20:50
13 of questions you can raise in the redirect. 14:20:50
14 BY MS. SQUIRES: 14:20:55
15 Q. I'll ask my question again then, 14:20:55
16 from the Environment Review Tribunal to operation, 14:20:57
17 that's 27 months; correct? 14:21:00
18 A. Numerically, that would appear to 14:21:02
19 be correct. 14:21:04
20 Q. And are you aware that no other 14:21:05
21 offshore wind project in the 200 to 400 megawatt 14:21:07
22 range has gone from permitting to commercial 14:21:11
23 operation in 27 months, and, in fact, Windstream's 14:21:13
24 project would be un-precedented in this regard? 14:21:16
25 A. Again, I'm reliant on the local 14:21:19

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1 Q. My questions pertain though to 14:22:49
2 after the permitting to commercial operation, so 14:22:50
3 it's not related to the permitting process itself 14:22:54
4 but after that. 14:22:56
5 Your testimony is that Windstream 14:22:58
6 would have done that process in an unprecedented 14:22:59
7 pace, in a new market? 14:23:03
8 A. You mean constructing the 14:23:05
9 development? 14:23:06
10 Q. So, from the time that you have 14:23:08
11 your permitting to the time you reach commercial 14:23:10
12 operations, you have your consents in hand? 14:23:12
13 A. I don't think it is unprecedented 14:23:15
14 based on the analysis I have done. It's within the 14:23:17
15 range of projects that I have seen developed, all of 14:23:19
16 the constituent components are sufficiently in that 14:23:23
17 range that I can believe the schedule is believable 14:23:28
18 and accurate. 14:23:32
19 Q. Okay, well, we can walk through 14:23:33
20 some examples then, perhaps to show the other time 14:23:37
21 periods for different projects. So let's turn to 14:23:40
22 tab 14 in your binder. 14:23:49
23 And we'll look at the first 14:23:51
24 page there. This is Exhibit R-0645, and this is the 14:24:02
25 key project dates for the Greater Gabbard project 14:24:06

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1 from the 4C database; can you see that? 14:24:11
2 A. Yes I can see that. But I'm not 14:24:14
3 sure how -- what use comparing Greater Gabbard, for 14:24:16
4 example, which is known to have had serious 14:24:20
5 technician problems because they sourced their 14:24:22
6 towers from China, which were of very, very poor 14:24:28
7 quality. They sourced steels towers from China, 14:24:29
8 they had various issues with this development, and 14:24:34
9 pretty much everything that could go wrong, did go 14:24:34
10 wrong. 14:24:38
11 Q. Okay, so issues arose with that 14:24:38
12 project and that's what leads to approximately 78 14:24:41
13 months for that period for that project; correct? 14:24:44
14 A. Yes, because of issues that were 14:24:46
15 specific for this project in the north sea, not 14:24:49
16 a project in Lake Ontario. 14:24:53
17 Q. Right, so -- 14:24:55
18 A. It's not exposed to the same 14:24:55
19 risks. And I listed the reasons why that is less 14:24:57
20 risk, if I can say, on a spectrum of risk with 14:25:03
21 regards to projects, I view this one being at the 14:25:07
22 low end because of where it is being built, because 14:25:11
23 of the sea state, because of the proximity that it 14:25:16
24 is to the coastline. 14:25:21
25 It's not fair, in my opinion, to 14:25:23

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1 picture of the possible. 14:26:45
2 So we have to remember that those 14:26:47
3 various issues that have caused project delays in 14:26:49
4 the North Sea. There is the whole TenneT issue with 14:26:52
5 regard to the German grid, where it was responsible 14:26:59
6 for building the infrastructure required to evacuate 14:27:03
7 power from a lot of these projects, and it failed in 14:27:09
8 its mission to do that which caused very lengthy 14:27:14
9 delays for many of the projects in the German 14:27:18
10 sector. 14:27:22
11 The same sort of thing could be seen 14:27:23
12 where novel techniques are being deployed in the 14:27:25
13 offshore environment to bury both the inter-turbine 14:27:28
14 cables and the cable that runs from the turbines to 14:27:34
15 the on-shore location grid, where the plows have 14:27:38
16 failed, there's been mechanical failure. This will 14:27:44
17 not happen on Lake Ontario because the cables are 14:27:47
18 laid directly on the surface. 14:27:50
19 So I do not think that it's reasonable 14:27:52
20 to compare projects that are ongoing, that are being 14:27:54
21 built in the North Sea to projects on Lake Ontario. 14:28:00
22 It's two completely different environments. It's 14:28:03
23 not comparing apples with apples. 14:28:08
24 Q. Okay, well, we heard from 14:28:10
25 Mr. Cooper and Mr. Palmer this morning that there 14:28:11

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1 compare north sea projects and the issues that they 14:25:26
2 suffer, with this development which has got 14:25:29
3 a completely different risk profile. 14:25:34
4 Q. Okay, so to confirm your testimony 14:25:36
5 is that the Windstream project would have -- again, 14:25:40
6 been unprecedented in time. We can agree there that 14:25:45
7 this is faster than any other project? 14:25:48
8 A. I don't agree that is the case. 14:25:50
9 My analysis would suggest that it's in the zone for 14:25:52
10 what can be achieved for offshore wind development. 14:25:55
11 (Simultaneous speakers - unclear) 14:26:00
12 Q. And have you provided any 14:26:01
13 documents or examples to support that time frame in 14:26:01
14 your report? 14:26:04
15 A. I have not. I have done my own 14:26:05
16 personal assessment of projects that are in our 14:26:07
17 database and compared them with what is being 14:26:13
18 claimed in our schedule to make me happy that this 14:26:17
19 schedule is achievable. 14:26:20
20 Q. And are you aware that URS has 14:26:24
21 done that type of analysis for projects between 200 14:26:29
22 and 400 megawatts and have not been able to come 14:26:31
23 close to that number? 14:26:36
24 A. I am sure I could go and cherry 14:26:39
25 pick projects that had issues and paint a very black 14:26:41

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1 could be certain issues with the schedule as it 14:28:14
2 pertains to the floating of the turbines, the 14:28:19
3 manufacturing, that sort of thing. 14:28:21
4 And to the extent that those risks 14:28:23
5 exist, your view is still that this project could be 14:28:24
6 completed in that amount of time? 14:28:27
7 A. Yes, that is my contention. 14:28:29
8 I don't know if you are aware in 1944, there were 14:28:31
9 over 400 concrete caissons sat on the bottom of the 14:28:36
10 sea around the UK, which were filled with air, 14:28:41
11 refloated, and towed to the Normandy beaches in 14:28:44
12 order to make artificial harbours to facilitate the 14:28:50
13 D-Day invasions. 14:28:56
14 The concepts that we've been talking 14:28:58
15 about here have been tried and tested. 14:29:00
16 And 70 years ago, a first-of-a-kind 14:29:02
17 development managed to support the Allied invasion 14:29:05
18 of northern Europe. 14:29:06
19 Q. Right, Mr. Irvine but I guess 14:29:10
20 my -- 14:29:12
21 A. So I am totally behind the 14:29:13
22 commentary I have made with regards to the ability 14:29:14
23 for this project to be constructed on the schedule 14:29:19
24 as presented. 14:29:22
25 Q. Okay, well, let's move on to 14:29:23

1 a different topic then. 14:29:25
2 You are aware as you mentioned in your 14:29:30
3 presentation that Windstream has signed a binding 14:29:32
4 turbine sales agreement with Siemens for the supply 14:29:34
5 of its turbines; correct? 14:29:36
6 A. I do not believe that that is 14:29:39
7 a binding sales agreement. It's stated in our 14:29:40
8 report that that is subject to re-negotiation. 14:29:43
9 Q. You're aware that it is a signed 14:29:45
10 agreement though; correct? 14:29:47
11 A. A signed -- a signed agreement 14:29:47
12 which is subject to re-negotiation. 14:29:50
13 Q. And is -- and is -- it being 14:29:52
14 subject to renegotiation, is that -- is that your 14:29:55
15 own personal knowledge or have you been informed 14:30:01
16 that that's the case by the Claimant? 14:30:03
17 A. That is what is stated in our 14:30:05
18 report. 14:30:07
19 Q. Okay, well, let's have a look at 14:30:09
20 that -- some parts of that turbine sales agreement 14:30:10
21 and we're going to go in a confidential session. 14:30:13
22 -- Confidential transcript begins 14:30:16
23 BY MS. SQUIRES: 14:30:26
24 Q. And we're going to start with your 14:30:26
25 schedule and we're going to look at line 367. 14:30:29

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25 [REDACTED] 14:32:19

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25 [REDACTED] 14:34:19

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1 [REDACTED] 14:34:35
2 [REDACTED]
3 [REDACTED]
4 [REDACTED]
5 [REDACTED]
6 MS. SQUIRES: Okay, I think we can 14:34:37
7 come out of the confidential session. 14:34:40
8 --- Confidential transcript ends 14:34:42
9 BY MS. SQUIRES 14:34:57
10 Q. Before we leave our discussion on 14:34:57
11 major equipment, I want to discuss the elevator 14:34:57
12 platform for a minute. 14:35:01
13 And if we can go to your schedule 14:35:03
14 again and we turn to 273. This line discusses the 14:35:05
15 procurement of the elevator platform; are you with 14:35:14
16 me there? 14:35:21
17 A. Yes, I see that. 14:35:22
18 Q. Line 273. And it indicates 14:35:24
19 a start date of December 5th, 2012 and an end date 14:35:24
20 of April 2nd, 2014; correct? 14:35:28
21 A. I can see that also. 14:35:32
22 Q. And the next line, line 274, then 14:35:34
23 indicates two months for installation of that 14:35:37
24 elevator platform; correct? 14:35:40
25 A. I can see that also. 14:35:42

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1 Q. So, that's about 18 months, in 14:35:43
2 total, I believe, if my math is correct. 14:35:46
3 A. Okay, I'll agree with you on that. 14:35:51
4 Q. All right. Now, you don't provide 14:35:53
5 a quote or any industry evidence to support your 14:35:55
6 conclusion in that regard; is that correct? It's 14:35:58
7 based on your own knowledge? 14:36:01
8 A. No, it's not based on my own 14:36:03
9 knowledge. It is based on the knowledge of COWI 14:36:05
10 because they are the expert in this space. I can't 14:36:07
11 claim to have any knowledge of the procurement or 14:36:10
12 delivery or installation times of an elevator 14:36:14
13 platform. That sits with COWI and they explained 14:36:16
14 that this morning in some detail, I believe. So 14:36:21
15 I have it rely on experts to furnish me with 14:36:25
16 information to go into this program. 14:36:30
17 Q. Let's look at line 379 then. And 14:36:32
18 it notes there that installation of the 14:36:34
19 gravity-based foundation is to begin on June 4th, 14:36:46
20 2014; correct? So five days after the elevator 14:36:50
21 platform is installed. June 11th, sorry -- no, 14:36:53
22 June 6th. 14:37:02
23 A. Yes, I can see that. 14:37:04
24 Q. So you've only allowed yourself 14:37:05
25 a five-day buffer then between the time the elevator 14:37:07

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1 platform goes in and the time that the foundation 14:37:10
2 installation starts. 14:37:13
3 Actually, I'm looking at the schedule. 14:37:15
4 I believe we you have an 11-day. We may have read 14:37:17
5 this one wrong. Just give me one second. 14:37:20
6 MS. SEERS: Again, Mr. Chair, I really 14:37:24
7 don't mean to keep interjecting but these are 14:37:26
8 matters that Mr. Cooper testified about this morning 14:37:29
9 and this is within his field of expertise. 14:37:31
10 PRESIDENT: This is a different issue. 14:37:33
11 This is an interface between his area of expertise 14:37:35
12 and the expertise of other experts, so it's fine to 14:37:36
13 explore this. 14:37:40
14 MS. SEERS: Well if I may -- okay. 14:37:41
15 I would just like to explain for the record, though, 14:37:42
16 that, while Sgurr definitely inputted the data that 14:37:45
17 was prepared or provided by these various experts, 14:37:49
18 the various experts are responsible for the accuracy 14:37:53
19 of that data. And so if there's a question about 14:37:58
20 the length of time that certain things take, that's 14:37:59
21 an appropriate question for Mr. Cooper in his area 14:38:01
22 of expertise. 14:38:04
23 If the matter is whether the data was 14:38:05
24 correctly inputted into Microsoft project, then 14:38:06
25 perhaps that's something that Mr. Irvine can speak 14:38:09

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1 to. 14:38:12
2 MR. SPELLISCY: And I would suggest 14:38:13
3 that the proper person to be providing that 14:38:14
4 explanation is actually the witness whose testimony 14:38:15
5 is -- who are here. 14:38:18
6 PRESIDENT: The expert is not only 14:38:21
7 somebody who put together this information; he's 14:38:22
8 also an expert on scheduling. So it's fine to 14:38:24
9 explore whether the input that he has received from 14:38:27
10 other experts is something that is consistent with 14:38:30
11 his experience in other projects, whether it's 14:38:32
12 something that is reasonable, whether it's 14:38:34
13 acceptable, whether he tested this information. 14:38:36
14 I think this is a fully legitimate area of -- and 14:38:38
15 the witness is doing fine. 14:38:42
16 MS. SEERS: Thank you, Mr. Chair. 14:38:44
17 PRESIDENT: And the Tribunal 14:38:46
18 appreciates this information. 14:38:47
19 THE WITNESS: I have tested all of the 14:38:49
20 individual components for the schedule. I've tested 14:38:50
21 it against relevant projects in Europe, not ones 14:38:53
22 that are not comparable. I've tried to compare 14:38:58
23 apples with apples and I'm comfortable with the 14:39:01
24 detail in the schedule and that it has been achieved 14:39:03
25 in other locations that are similar to Lake Ontario. 14:39:07

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1 BY MS. SQUIRES: 14:39:30
2 Q. Okay, so, I want to go back then 14:39:31
3 to what I was just talking about and that there's 14:39:36
4 a five-day period between the time the 14:39:38
5 foundations -- between the time that the elevator 14:39:39
6 platform is installed and the time that the 14:39:42
7 gravity-based foundations start going in the water; 14:39:45
8 is that right? 14:39:48
9 A. I will trust your opinion on that 14:39:50
10 number. 14:39:52
11 Q. And based on your opinion with 14:39:54
12 scheduling then, any lead time longer than that, any 14:39:56
13 delays would lead to a delay in the project in 14:39:59
14 getting the foundations in the water; correct? 14:40:03
15 A. On the hypothetical project, based 14:40:06
16 on this scenario, yes, that's possible, but I keep 14:40:09
17 stressing that building a project is about multiple 14:40:14
18 iterations of the program. This is just one. That 14:40:19
19 when you're building a project, you introduce risks. 14:40:22
20 You introduce stresses. You find out where the 14:40:26
21 weaknesses are in the program, and you build 14:40:29
22 an appropriate mitigation. 14:40:32
23 So to try and pick holes and do all of 14:40:33
24 this and say "Therefore, the project would wander 14:40:38
25 into the sunset," I don't think is reflective of 14:40:42

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1 will start to collect the 35 kilovolts power 14:43:13
2 generated by the individual turbines, and then that 14:43:17
3 will then step the voltage up to 230 kilovolts for 14:43:19
4 the cable; correct? 14:43:24
5 A. Yes. 14:43:26
6 Q. So it is my understanding that the 14:43:27
7 offshore substation is a 35 kilovolt offshore 14:43:28
8 substation; is that right -- or sorry, 230-kilovolt 14:43:32
9 offshore substation; correct? 14:43:36
10 A. Yes. 14:43:38
11 Q. Now, in your presentation you 14:43:40
12 mentioned that one of the scheduling advantages for 14:43:42
13 Windstream was the use of an on-shore, rather than 14:43:45
14 a offshore substation; correct? 14:43:47
15 A. That's correct, in the 14:43:49
16 hypothetical scenario we looked at and were tasked 14:43:50
17 with assessing. 14:43:52
18 Q. And are you aware that Windstream 14:43:56
19 was not able to use Pigeon Island, the location of 14:43:58
20 the proposed offshore substation, they were not 14:44:01
21 allowed to use that to build an -- a MET tower; are 14:44:04
22 you aware of that? 14:44:09
23 A. I don't see the relevance of that 14:44:12
24 with the schedule we were tasked to develop. We 14:44:13
25 were given that was the situation that would present 14:44:17

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1 what actually happens in the development of 14:40:45
2 an offshore wind project or any project for that 14:40:48
3 matter. It's all about risk identification and 14:40:52
4 mitigation. It's about getting more information to 14:40:57
5 come into the project and better inform those that 14:41:02
6 are involved in its delivery. 14:41:04
7 Q. Okay, I'll just ask you to give me 14:41:07
8 one second then. 14:41:09
9 [Counsel confers] 14:41:13
10 Mr. Irvine, so I can understand a bit 14:42:20
11 more about the scope so I don't ask you questions 14:42:22
12 about topics that you have not provided any sort of 14:42:25
13 opinion on. The inclusion of the offshore 14:42:28
14 substation in the schedule, is that something in 14:42:31
15 your purview or is that another expert? 14:42:33
16 A. I'm happy to take questions on 14:42:39
17 that. 14:42:40
18 Q. So let's go to page 98 of your 14:42:42
19 first report. 14:42:46
20 You will see there toward the bottom 14:43:03
21 of the page there is a Section entitled "Offshore 14:43:04
22 substation"? 14:43:07
23 A. Yes, I can see that. 14:43:08
24 Q. So you note there that the project 14:43:09
25 substation will be located at the offshore site and 14:43:10

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1 itself, i.e. we had an island on which we would 14:44:19
2 develop a substation and associated electrical 14:44:22
3 infrastructure. That's the scenario that we 14:44:26
4 developed this program schedule, and if we were 14:44:28
5 given a different scenario we would have developed 14:44:32
6 a different schedule. 14:44:34
7 Q. Okay, so when you were told that 14:44:35
8 an offshore substation could be developed on that 14:44:37
9 island, you were not made aware that they were 14:44:39
10 refused access to that island for a smaller MET 14:44:42
11 tower; correct? 14:44:45
12 A. I was asked to develop a schedule 14:44:46
13 based upon that island being utilized. If I was 14:44:48
14 given a different scenario, I would have come up 14:44:53
15 with a different schedule? 14:44:56
16 In the UK right now, there is what is 14:44:58
17 called the renewables obligation, and we are working 14:44:59
18 for a client who is trying to get a wind farm built 14:45:03
19 in the offshore environment before the time runs out 14:45:07
20 with regards to its ability to receive a subsidiary 14:45:13
21 for that development. So it has started with an end 14:45:16
22 date, and we work back and we developed a schedule 14:45:19
23 that is robust enough to receive finance, for 14:45:22
24 example, we stress tested. We check it. We make 14:45:27
25 sure that the schedule is sufficiently robust. So 14:45:30

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1 we are basing this upon a scenario that we were 14:45:35
2 given, and that was Pigeon Island would be available 14:45:40
3 to install an offshore substation on. 14:45:42
4 Q. So, correct me if I'm wrong then, 14:45:49
5 you didn't do a scheduling, or you didn't input into 14:45:51
6 the schedule the possibility of having a substation 14:45:53
7 that's not on Pigeon Island, so a floating 14:45:55
8 substation, a gravity-based foundation substation? 14:45:58
9 A. That was not considered in that 14:46:03
10 scenario. If we were to look at multiple scenarios, 14:46:04
11 then, yes, I've said repeatedly what the process of 14:46:07
12 project development is about, and it's about 14:46:11
13 understanding the possible, if things don't go to 14:46:15
14 your original plan you come up with a Plan B. You 14:46:18
15 continually input into the program and find 14:46:22
16 solutions that will help you get to your end date. 14:46:25
17 Q. All right. I want to look at your 14:46:35
18 schedule, then, at line 345. 14:46:36
19 Is the offshore substation that you 14:46:51
20 are referring to here, then, is that the one on 14:46:52
21 Pigeon Island? 14:46:55
22 Is that the only one that you've -- 14:46:55
23 A. That is the only one that I've 14:46:58
24 been made aware of. That's my understanding. 14:47:00
25 Q. So to the extent an offshore 14:47:02

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1 engineering solutions that is will make that happen. 14:48:19
2 Q. But your understanding is five 14:48:22
3 years? 14:48:24
4 A. Five years, I believe there's a -- 14:48:24
5 a degree of slip allowed in that, as one would 14:48:27
6 expect. That's what we see in projects globally. 14:48:31
7 There may be a period of time that you have to build 14:48:35
8 your project, but if you are started -- if you are 14:48:39
9 demonstrating to those that are issuing the FIT-type 14:48:42
10 contracts that you have begun work that you have 14:48:48
11 committed capital to a project, there's typically 14:48:50
12 some leeway in that. It's not a cliff edge. It's 14:48:53
13 not a hard stop. There is some porosity in that end 14:48:57
14 date. 14:49:01
15 Q. Okay, we can come back to that 14:49:01
16 buffer period in a minute because I do understand 14:49:02
17 what you are getting at there, that period that 14:49:05
18 extends beyond the five years, but if we could come 14:49:07
19 to tab 9 of your binder, which is Exhibit R-0092. 14:49:10
20 This is a copy of the standard form FIT contract, 14:49:20
21 and we're going to look at page 9. 14:49:22
22 In Section 2.5 it notes that. 14:49:36
23 "The supplier..." 14:49:38
24 So in this case, Windstream: 14:49:39
25 "... acknowledges that time is of 14:49:40

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1 substation is required, there is nothing in the 14:47:04
2 schedule that speaks to that -- sorry, an offshore 14:47:05
3 substation not on Pigeon Island, there is nothing 14:47:08
4 that speaks to that? 14:47:11
5 A. That's correct. That would be 14:47:12
6 another scenario, and we could develop another 14:47:13
7 schedule around that. We can manufacture all our 14:47:16
8 gravity base. You can get the appropriate equipment 14:47:22
9 to come in and install the transformer on -- there 14:47:25
10 are many scenarios one could have here. We could 14:47:29
11 relocate to Wolfe Island, for example. We could 14:47:32
12 have an offshore collector station where you just 14:47:34
13 assemble the electrical cables and run them to 14:47:37
14 another location where would you have a substation. 14:47:42
15 There are multiple scenarios that one 14:47:48
16 could build into a project program. This one 14:47:50
17 assumes that we will build on Pigeon Island. 14:47:53
18 Q. Okay, under the FIT contract, 14:47:56
19 barring any event of force majeure occurring, 14:48:02
20 Windstream had five years to develop its project; 14:48:04
21 correct? 14:48:07
22 A. That's my understanding, but I'm 14:48:07
23 not an expert in the details behind the FIT 14:48:08
24 contract. I know I have to give a program that 14:48:12
25 links to a specific end date, and I come up with 14:48:17

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1 the essence in to the OPA with 14:49:42
2 respect to obtaining commercial 14:49:45
3 operation of the contract facility 14:49:46
4 by the milestone date for 14:49:48
5 commercial operation set out in 14:49:49
6 Exhibit A." 14:49:51
7 Do you see that? 14:49:54
8 A. I can see that. 14:49:54
9 Q. And it notes further: 14:49:55
10 "The parties agree that commercial 14:49:56
11 operation shall be achieved in 14:49:58
12 a timely manner and by the 14:50:00
13 milestone date for commercial 14:50:02
14 operation." 14:50:03
15 [As read] 14:50:04
16 Do you see that? 14:50:04
17 A. I can see that also. 14:50:06
18 Q. Now, I want to take you to page 15 14:50:08
19 of your second report. And you'll note there, 14:50:10
20 I believe it's toward the bottom of the page, it 14:50:38
21 says: 14:50:40
22 "The project could have been 14:50:41
23 developed and constructed in a 14:50:42
24 period of approximately 5.25 years 14:50:43
25 or 63 months." 14:50:46

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1 [As read] 14:50:48
2 A. Yes. 14:50:48
3 Q. So, in your professional opinion 14:50:49
4 then, the project could not reach commercial 14:50:52
5 operation within the five years required in the FIT 14:50:54
6 contract; it required extra time; correct? 14:50:56
7 A. Well, that's correct; that's what 14:50:59
8 our schedule has thrown up. 14:51:00
9 MS. SEERS: Mr. Chair, I hesitate in 14:51:04
10 interjecting again, but Ms. Squires has just put to 14:51:08
11 the witness whether something was required under the 14:51:12
12 FIT contract or not. And so I'd just like to 14:51:14
13 register an objection that there have been other 14:51:17
14 witnesses that have testified already as to what was 14:51:19
15 and wasn't required and this witness is not 14:51:21
16 an expert on that. 14:51:24
17 BY MS. SQUIRES: 14:51:25
18 Q. So, I would note in that very same 14:51:26
19 paragraph in Mr. Irvine's report he says that: 14:51:27
20 "That schedule means that the 14:51:29
21 project could have been developed 14:51:30
22 and constructed in a period that 14:51:31
23 was consistent with the 14:51:33
24 constraints of the FIT program." 14:51:34
25 So, I believe Mr. Irvine is prepared 14:51:35

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1 Tribunal? 14:53:01
2 QUESTIONS BY THE TRIBUNAL: 14:53:01
3 MR. BISHOP: Yes. You said that at 14:53:04
4 one point that you compared apples to apples and 14:53:06
5 that you looked at projects similar to that in 14:53:10
6 Ontario. 14:53:14
7 What projects did you consider to be 14:53:14
8 analogous to this project? 14:53:18
9 THE WITNESS: Basically, a number of 14:53:20
10 projects that operate in the Baltic sea that utilise 14:53:21
11 gravity-based foundation, for example, Nysted, which 14:53:27
12 is one that has been discussed by others. 14:53:32
13 MR. BISHOP: Could you speak up 14:53:36
14 a little bit? I'm having trouble hearing you. 14:53:37
15 THE WITNESS: Nysted is a project that 14:53:39
16 is situated just south of Copenhagen in the Baltic 14:53:42
17 Sea -- so that project was -- it's spelled 14:53:47
18 N-Y-S-T-E-D. 14:53:53
19 That project utilized gravity-based 14:53:55
20 foundation and I would argue that it's a better 14:53:56
21 representative location because it's in a more 14:54:00
22 sheltered sea. 14:54:04
23 And it is also, using gravity-based 14:54:05
24 foundation. 14:54:12
25 It is also using Siemens 3.2 megawatts 14:54:12

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1 to discuss what is or is not consistent with the FIT 14:51:37
2 program or, Mr. Irvine, tell me if I'm wrong? 14:51:40
3 A. Well, I'm reliant on those who 14:51:43
4 have a good working knowledge of the FIT program to 14:51:45
5 feed into our report. I do not have a good working 14:51:48
6 knowledge of the FIT program. 14:51:53
7 Q. So when you said that it was 14:51:55
8 consistent with the constraint of the FIT program, 14:51:57
9 that was without an understanding of the FIT program 14:51:59
10 itself? 14:52:02
11 A. Yes, about those who have gotten 14:52:02
12 a better understanding of the FIT program than 14:52:05
13 I have. 14:52:08
14 Q. All right. Those are, 14:52:08
15 I believe -- just give me one second again. 14:52:10
16 [Counsel confers] 14:52:16
17 MS. SQUIRES: Nothing else from me, 14:52:49
18 Mr. Irvine. 14:52:50
19 PRESIDENT: Thank you, Ms. Squires. 14:52:51
20 I trust there will be questions in redirect? 14:52:53
21 MS. SEERS: You will be surprised to 14:52:55
22 note that there are not. 14:52:56
23 PRESIDENT: There are not? 14:52:58
24 MS. SEERS: We have no questions. 14:52:59
25 PRESIDENT: Anything from the 14:53:01

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1 turbines. So those turbines aren't directly 14:54:17
2 comparable with the proposition that's under 14:54:20
3 discussion. 14:54:23
4 Many of those other projects that are 14:54:24
5 being compared to the Lake Ontario project are using 14:54:26
6 4 megawatts turbines, 6 megawatts turbines. They 14:54:30
7 have potential technology issues, they have 14:54:33
8 different foundation requirements, so they are not 14:54:36
9 directly comparable. 14:54:39
10 Those other projects in -- I cannot 14:54:40
11 remember the lake in Sweden, but it's in my 14:54:44
12 presentation that I gave this morning, which is very 14:54:47
13 similar to the proposed project in Lake Ontario. So 14:54:50
14 I would consider those in the Baltic Sea using 14:54:56
15 gravity-based foundation to be better comparators of 14:55:00
16 the possible, rather than those 80 kilometres 14:55:03
17 offshore and 35 metres of water. 14:55:08
18 MR. BISHOP: Are there any others that 14:55:12
19 you consider comparable, other than those two? 14:55:14
20 THE WITNESS: Off the top of my head, 14:55:18
21 it's challenging for me to recall what might be 14:55:19
22 appropriate. I could certainly follow that up, if 14:55:24
23 that would be appropriate. 14:55:27
24 MR. BISHOP: Well, I think we're just 14:55:30
25 looking for your testimony today. You came here to 14:55:32

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1 testify about these matters; you made the statement 14:55:34
2 that you were looking at apples to apples in similar 14:55:37
3 projects, so I'm simply asking you what you're 14:55:41
4 referring to. 14:55:44
5 THE WITNESS: Well, I'm referring to 14:55:45
6 those projects that we have on our database. Many 14:55:46
7 of them are listed in the presentation. I've done 14:55:51
8 numerical analysis on the information that was 14:55:55
9 presented to adequately normalize that information, 14:55:58
10 such that we can look at installation rates in terms 14:56:02
11 of megawatts per one installed, in terms of turbines 14:56:05
12 per month installed, in terms of the overall project 14:56:12
13 duration from the start to finish. So I'm sorry I'm 14:56:14
14 unable to recall the precise names of those 14:56:22
15 projects, but I do have that data. 14:56:24
16 MR. BISHOP: So when you are referring 14:56:30
17 to apples to apples, though, you're talking about 14:56:31
18 projects that would have similar technical -- 14:56:35
19 technical issues, technical requirements? You're 14:56:38
20 talking about the technical aspects of the project. 14:56:40
21 THE WITNESS: Similar technical 14:56:42
22 aspects, but we have big issues in Germany, 14:56:45
23 specifically, with regards to the grid support, so 14:56:48
24 this is adding years of delay on the project, so 14:56:55
25 it's not fair to rope these into the comparison. 14:56:57

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1 an independent engineer in the context within which 14:58:23
2 I've been asked to look as these projects and give 14:58:27
3 evidence. 14:58:30
4 PRESIDENT: So looking at all of 14:58:32
5 these, how would the current project compare in 14:58:33
6 terms of size, in terms of the megawatts that the 14:58:42
7 project would produce, and the number of -- 14:58:47
8 I believe, one expert used the term "Bicycle" -- and 14:58:53
9 the number of bicycles to be set up? 14:58:56
10 THE WITNESS: It's smaller at 14:59:00
11 300 megawatts. The sort of block size that we're 14:59:01
12 looking at in terms of these projects are in excess 14:59:06
13 of 500 megawatts. London Array, for example, is in 14:59:09
14 excess of 700 megawatts. It is one of the biggest 14:59:14
15 offshore wind farm in the world. So, this is what 14:59:18
16 I'm saying about taking data and trying to normalize 14:59:23
17 it a manner that gives you a direct comparison. 14:59:27
18 PRESIDENT: And in terms the number of 14:59:31
19 130 turbines in this project, I understand, how 14:59:32
20 would that compare with the ones that you have 14:59:36
21 listed on these three pages? 14:59:39
22 THE WITNESS: Well, again, typically 14:59:41
23 there is reduced number of turbines in larger sites. 14:59:43
24 They're now using 6 megawatts machines, 7 megawatts 14:59:48
25 machines, so there are fewer turbines than many of 14:59:53

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1 MR. BISHOP: Okay. Thank you. 14:57:01
2 THE WITNESS: Thanks. 14:57:01
3 PRESIDENT: Mr. Irvine, if I could 14:57:06
4 take you to your presentation pages -- let me see, 14:57:07
5 do we have page numbers here? So, starting with the 14:57:14
6 project specific SgurrEnergy experience, probably 14:57:23
7 page 8, 9, I suppose. You have listed on three 14:57:28
8 pages, you have listed your experience. You have -- 14:57:43
9 THE WITNESS: Yes. 14:57:47
10 PRESIDENT: First as lender's 14:57:48
11 engineer. Then as independent engineer or advisor 14:57:50
12 in the -- in acquisition. 14:57:54
13 THE WITNESS: Yes. 14:57:56
14 PRESIDENT: And then as owner's 14:57:58
15 engineer. 14:57:59
16 THE WITNESS: Yes. 14:58:00
17 PRESIDENT: So you have looked at this 14:58:00
18 from different angles. 14:58:01
19 THE WITNESS: That's correct. 14:58:03
20 PRESIDENT: And the one that would 14:58:04
21 probably be closest to what you are doing here would 14:58:09
22 be which one of these poles? Perhaps, well, as 14:58:13
23 an expert you would probably be an independent 14:58:19
24 expert engineer. 14:58:21
25 THE WITNESS: I would call myself 14:58:22

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1 these projects. London array has 3.6 megawatt 14:59:57
2 turbines for example. 15:00:01
3 PRESIDENT: So what would determine 15:00:08
4 whether you use 6 or 3 megawatts, for instance? Is 15:00:09
5 it the wind resource? 15:00:12
6 THE WITNESS: Well, the purpose of 15:00:14
7 going bigger is designed to reduce the levelized 15:00:16
8 cost of energy. 15:00:20
9 So, the bigger you make the turbines, 15:00:22
10 the fewer foundations you need. The fewer 15:00:24
11 deployment operations you need. You are typically 15:00:29
12 fishing the turbine up into the higher atmosphere 15:00:32
13 where you're able to capture more energy, so going 15:00:35
14 bigger is designed to make the project more cost 15:00:39
15 effective to... 15:00:42
16 PRESIDENT: So in this instance where 15:00:44
17 you have -- where the plan was to build around 130 15:00:45
18 bicycles or turbines, why would it -- would it not 15:00:53
19 have been cost efficient to use more efficient 15:00:58
20 turbines, 6 megawatts? 15:01:01
21 THE WITNESS: Yes. And that could be 15:01:05
22 another scenario that we could have run. We were 15:01:05
23 basing this on the information that was available 15:01:08
24 with regards to a single scenario. 15:01:11
25 PRESIDENT: That was the scenario that 15:01:14

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1 you were given, that there would be 3.2 megawatts. 15:01:15
2 THE WITNESS: 2.3. 15:01:19
3 PRESIDENT: 2.3. 15:01:21
4 THE WITNESS: Yes. So that's the 15:01:22
5 scenario, and as I've said on several occasions, you 15:01:24
6 would keep refining the situation. 15:01:28
7 We've seen projects that start with 15:01:31
8 2 megawatts turbine that could end up with 15:01:33
9 a 4 megawatts turbine in fewer locations. 15:01:36
10 It is a development process that's 15:01:40
11 continually refined as we move through the 15:01:42
12 development phase, and there is always 15:01:46
13 an opportunity to capture the best available 15:01:49
14 technology at a given time. 15:01:52
15 PRESIDENT: Were you involved in the 15:01:58
16 project in Sweden, in Lake Vänern? 15:01:59
17 THE WITNESS: Personally? No. 15:02:03
18 PRESIDENT: Do you know how big that 15:02:06
19 project is in terms of the number of turbines and 15:02:07
20 the size? 15:02:09
21 THE WITNESS: It's in a report. 15:02:12
22 PRESIDENT: It's not on this -- on 15:02:15
23 the -- 15:02:17
24 THE WITNESS: It is not on the 15:02:18
25 presentation? 15:02:19

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1 project? So we have taken an engineering view upon 15:03:36
2 that development, so, the work we have done, 15:03:39
3 I guess, it's useful, but it's based on this 15:03:48
4 theoretical situation which is designed to get 15:03:53
5 answers for this Tribunal. 15:03:58
6 DR. CREMADES: Well, I want to be more 15:04:02
7 concrete. The fees you were paid, did you think 15:04:03
8 should be considered costs of the project or costs 15:04:06
9 of this arbitration? 15:04:08
10 THE WITNESS: Well, I believe our work 15:04:12
11 stands and can be utilized with regards to the 15:04:14
12 development of the project. So it could be, if the 15:04:16
13 project was to be progressed. 15:04:20
14 DR. CREMADES: Uh-hmm. 15:04:23
15 THE WITNESS: It would be a cost to 15:04:24
16 the project. We have used information from the 15:04:25
17 relevant and best experts to build into this 15:04:31
18 project, to build into our reports, so this would 15:04:35
19 all stand very good stead with regards to 15:04:39
20 progressing the report -- the project if that was 15:04:44
21 the desire. 15:04:47
22 DR. CREMADES: Thank you. 15:04:49
23 THE WITNESS: Thank you. 15:04:50
24 PRESIDENT: Thank you, Mr. Irvine. 15:04:53
25 Any questions as a result of the 15:04:54

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1 PRESIDENT: Okay, we'll find out. 15:02:20
2 Yes, I think that's all I have. 15:02:26
3 DR. CREMADES: I have a small 15:02:28
4 question. I have a small question is the following: 15:02:29
5 Your company was engaged in February 2011, for this 15:02:34
6 project. You started working for this project in 15:02:42
7 February, 2011. 15:02:45
8 THE WITNESS: No, that's not my 15:02:48
9 understanding. No, I think we started later than 15:02:50
10 that. This is a hypothetical situation that I've 15:02:53
11 looked at. 15:02:57
12 DR. CREMADES: We did you -- when were 15:02:59
13 you contracted by Windstream to work on this 15:03:00
14 project? 15:03:02
15 THE WITNESS: Prior to the first 15:03:03
16 report, which I'm assuming is roundabout 2012. 15:03:04
17 DR. CREMADES: '12, so after the 15:03:11
18 moratorium? 15:03:13
19 THE WITNESS: Yes. 15:03:13
20 DR. CREMADES: In order to understand, 15:03:15
21 do you think that your work was done for the project 15:03:18
22 or in preparation of this arbitration? 15:03:23
23 THE WITNESS: Well, I was asked to 15:03:26
24 look at a theoretical situation, the question being: 15:03:28
25 Would it be theoretically possible to build this 15:03:32

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1 questions from the Tribunal? 15:04:57
2 MS. SQUIRES: Yes, just one brief 15:05:02
3 question. 15:05:03
4 PRESIDENT: Yes, please. 15:05:04
5 FURTHER CROSS-EXAMINATION BY MS. SQUIRES: 15:05:10
6 Q. Mr. Irvine, you mentioned Nysted as 15:05:12
7 an appropriate project when Mr. Bishop asked for 15:05:16
8 a comparator; do you recall that? 15:05:19
9 A. I recall that, yes. 15:05:22
10 Q. Now that project is built in water 15:05:22
11 about 6 to 9 metres in depth; correct? 15:05:25
12 A. Correct. 15:05:28
13 Q. And it has 72 turbines; correct? 15:05:29
14 A. Correct. 15:05:32
15 Q. And it is backed by Dong; is that 15:05:32
16 correct? 15:05:34
17 A. That's correct, yes. 15:05:35
18 Q. So if we're looking to compare 15:05:35
19 apples to apples, this would not be an appropriate 15:05:37
20 comparison; correct? 15:05:40
21 A. No, I disagree. I think it is 15:05:41
22 a relevant comparison. It is an evolution of the 15:05:43
23 process with regards to deployment of 2.3 megawatts 15:05:46
24 turbines in a relatively benign sea using 15:05:50
25 gravity-based foundation, so the learnings from that 15:05:56

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1 are comparable. 15:05:59
2 Q. So in spite of it being in 15:06:00
3 shallower with water with less turbines, and being 15:06:02
4 backed by the world leader in offshore wind 15:06:06
5 development, you consider it comparable? 15:06:07
6 A. I considered it comparable, yes. 15:06:10
7 There are useful learnings to be gained from that. 15:06:10
8 And Wolfe Shoals does have machines that are in the 15:06:13
9 same water depth, although some are deeper. 15:06:13
10 MS. SQUIRES: That's my only question. 15:06:21
11 Thank you. 15:06:22
12 PRESIDENT: Ms. Seers? 15:06:22
13 MS. SEERS: Yes, we have some 15:06:24
14 questions. 15:06:25
15 PRESIDENT: Please. 15:06:26
16 RE-EXAMINATION BY MS. SEERS: 15:06:26
17 Q. Mr. Irvine, Dr. Heiskanen asked 15:06:34
18 you a question about why you use a 2.3 megawatt 15:06:37
19 Siemens turbine as opposed to a 6 megawatt Siemens 15:06:39
20 turbine. Can you explain when the 6 megawatts 15:06:45
21 Siemens turbine became available on the marketplace 15:06:47
22 and how that would have fit or not fit within the 15:06:50
23 project schedule that you developed here? 15:06:52
24 A. Well, it was not available to the 15:06:54
25 marketplace in 2011, which was the theoretical 15:06:55

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1 utilization of gravity-based foundation in a more 15:08:22
2 benign environment. 15:08:25
3 Q. Thank you very much. 15:08:31
4 QUESTIONS BY THE TRIBUNAL: 15:08:32
5 PRESIDENT: Thank you. Actually, 15:08:32
6 I have one more question: You mentioned in your 15:08:32
7 presentation that you used radar to investigate wind 15:08:35
8 resource. 15:08:39
9 THE WITNESS: It is LiDAR. 15:08:40
10 PRESIDENT: Yes. Well, the question 15:08:42
11 is why are airlines so bad in detecting turbulence, 15:08:45
12 even if they have radar? 15:08:49
13 THE WITNESS: Well, they actually use 15:08:51
14 LiDAR to detect turbulence, and they avoid it. 15:08:52
15 Sometimes you can't fly over it or around it, but 15:08:56
16 that is deployed on aircraft. 15:09:00
17 PRESIDENT: Okay, so maybe we can 15:09:03
18 explore that during -- I trust this doesn't give any 15:09:05
19 rise to further questions? 15:09:08
20 MS. SQUIRES: Just curiosity. 15:09:11
21 PRESIDENT: Just curiosity. Thank you 15:09:12
22 very much. 15:09:14
23 THE WITNESS: Thank you. 15:09:15
24 MS. SEERS: Mr. Chair, if I may raise 15:09:37
25 a procedural issue. I see we're actually ahead of 15:09:40

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1 position we had to take. When precisely it came on 15:07:01
2 the market, we helped with the lender's engineering 15:07:05
3 assignment on that, so I think we're looking at, 15:07:11
4 perhaps, two years ago, three years ago, was the 15:07:14
5 first project that got through the project financing 15:07:16
6 phase. 15:07:21
7 Q. Okay, and Dr. Heiskanen also asked 15:07:24
8 you questions about the comparison between -- or it 15:07:28
9 may have been Mr. Bishop, I apologize, I'm not 15:07:30
10 sure -- about the comparison between the 15:07:33
11 Wolfe Island Shoals project and other projects 15:07:36
12 including, you mentioned projects in the Baltic sea. 15:07:38
13 Could you elaborate on why you would 15:07:44
14 consider projects in the Baltic sea, comparable to 15:07:46
15 this particular project? 15:07:49
16 A. Well, largely because of the more 15:07:50
17 benign sea state. 15:07:53
18 There is less risk associated with the 15:07:55
19 development of a project. There is likely to be 15:07:58
20 less downtime with regards to weather. If we go 15:08:01
21 into the more northerly parts of the Baltic sea, 15:08:05
22 they're far less saline compared to the Atlantic, 15:08:09
23 for example. 15:08:14
24 So we are moving into zones where 15:08:15
25 there is basically less weather risk and there is 15:08:17

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1 schedule -- uncharacteristically perhaps ahead of 15:09:42
2 schedule. 15:09:42
3 PRESIDENT: That is entirely 15:09:46
4 unintended. 15:09:46
5 MS. SEERS: It must be because it's 15:09:48
6 Sunday. We had Mr. Clarke scheduled to start today 15:09:49
7 and continue tomorrow, and I'm certainly prepared to 15:09:54
8 proceed, however, I had contemplated further time 15:09:56
9 tomorrow and so I would ask for the Tribunal's 15:09:59
10 indulgence, if possible, to get as far as we can 15:10:02
11 today and then continue tomorrow morning, if 15:10:05
12 possible. 15:10:07
13 PRESIDENT: Certainly. The idea was 15:10:08
14 to start today, and I don't see any reason why we 15:10:10
15 should change the program. 15:10:16
16 MS. SEERS: No, and certainly I'm 15:10:18
17 prepared to start today. I just had contemplated 15:10:20
18 also continuing tomorrow morning. 15:10:22
19 PRESIDENT: You were planning to 15:10:24
20 continue anyway tomorrow so, we may finish earlier 15:10:25
21 today. 15:10:30
22 MS. SEERS: If possible, that would be 15:10:32
23 appreciated. 15:10:33
24 PRESIDENT: I doubt that will be many 15:10:34
25 objections to that, but I'd like to hear the 15:10:35

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1 Respondent's comments. 15:10:37
2 MS. SQUIRES: I am sure Mr. Clarke 15:10:40
3 would like to be like to be free of this process. 15:10:42
4 He is available tomorrow morning. 15:10:45
5 PRESIDENT: Yes. Okay, but let's have 15:10:45
6 a break. We will continue at 3:25 with Mr. Clarke. 15:10:45
7 Thank you. 15:10:50
8 --- Recess taken at 3:10 p.m. 15:10:53
9 --- Upon resuming at 3:30 p.m. 15:10:53
10 PRESIDENT: Good afternoon, 15:30:06
11 Mr. Clarke. So you have been here so you know how 15:30:07
12 it works. So if you could please state your name 15:30:11
13 for the record and read the declaration for expert 15:30:14
14 witness. 15:30:15
15 THE WITNESS: Yes, good afternoon. My 15:30:16
16 name is Gareth De Villiers Clarke. 15:30:17
17 I solemnly declare upon my honour and 15:30:21
18 conscience that my evidence and my opinions will be 15:30:25
19 in accordance with my sincere belief. 15:30:28
20 AFFIRMED: GARETH DE VILLIERS CLARKE 15:30:30
21 PRESIDENT: Thank you very much. 15:30:31
22 The URS report has already been 15:30:34
23 subject to cross-examination in part earlier in this 15:30:39
24 proceeding last week. So this is now the 15:30:42
25 engineering aspect of it. We understand you have 15:30:54

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1 prepared a presentation which we look forward to 15:30:57
2 hearing, but before we start, will there be any 15:30:59
3 questions on direct also from the Respondent? 15:31:02
4 MS SQUIRES: Yeah, after the 15:31:09
5 presentation there will be 15:31:10
6 PRESIDENT: After the presentation 15:31:12
7 Thank you very much 15:31:13
8 Please go ahead, Mr Clarke 15:31:13
9 PRESENTATION BY GARETH D CLARKE, AECOM UK 15:31:13
10 THE WITNESS: Good afternoon 15:31:27
11 MS WATES: Mr President, if I could 15:31:46
12 just ask for a few moments so we can advance the 15:31:47
13 slides to the start of 15:31:48
14 PRESIDENT: Yes, of course 15:31:48
15 THE WITNESS: Thank you 15:31:49
16 Good afternoon, my name is Gareth 15:31:49
17 Clarke I am a Chartered Engineer, which is the UK 15:31:51
18 designation I think it's equivalent to 15:31:55
19 a Professional Engineer in other jurisdictions 15:31:59
20 I have 35 years of experience, of 15:32:02
21 which two years were in the mining industry I then 15:32:07
22 spent four years with a transmission utility where 15:32:11
23 primarily I was involved in project management of 15:32:15
24 a major project, and I've now been a consulting 15:32:19
25 engineer for 29 years 15:32:22

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1 In that time, I've been in both 15:32:26
2 a technical leadership and project management roles 15:32:28
3 with direct involvement in projects throughout that 15:32:35
4 time. 15:32:39
5 I'm currently a technical director in 15:32:42
6 the AECOM UK Power & Energy business unit where 15:32:46
7 I have been involved in a wide range of projects in 15:32:53
8 the power sector covering thermal generation, 15:32:57
9 renewable energy generation and transmission and 15:33:05
10 distribution. 15:33:08
11 I have personal direct involvement in 15:33:09
12 one offshore wind project and numerous on-shore wind 15:33:14
13 projects. 15:33:18
14 For this particular assignment, my 15:33:24
15 role was the leadership and management of the 15:33:27
16 technical team in the UK, particularly the 15:33:33
17 environmental work was done from our Canadian 15:33:39
18 office, but I was leading the technical team in the 15:33:42
19 UK. 15:33:45
20 I assembled a team of experts for this 15:33:47
21 project from both within URS as we were at the time 15:33:50
22 of appointment and specialist sub-consultants, all 15:33:58
23 of whom we have, in fact, worked with for a number 15:34:02
24 of years prior to this appointment. 15:34:06
25 During the project, I've coordinated 15:34:08

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1 the activities of the team, and I've also been 15:34:10
2 responsible for directly reviewing the technical 15:34:17
3 parts of the -- both URS reports. 15:34:19
4 As Mr. Rose indicated last week, the 15:34:31
5 URS approach to this project covered three key 15:34:35
6 issues: Recognizing the time constraints imposed by 15:34:40
7 the FIT contract, clearly one of the key issues was 15:34:47
8 the project schedule. 15:34:51
9 We also then looked at the project 15:34:55
10 risks, and the risks facing the project during both 15:34:58
11 its development and construction phase, and we also 15:35:02
12 looked at the cost and commercial implications 15:35:09
13 insofar as they were influenced by the technical 15:35:15
14 aspects of the project. 15:35:20
15 Effectively, what we were doing was 15:35:23
16 looking to provide assumptions or review of the 15:35:26
17 assumptions made by Deloitte. 15:35:32
18 The methodology we applied in our 15:35:40
19 analysis is we analyzed the documents and 15:35:43
20 submissions made by Windstream. It was specifically 15:35:51
21 not our intent or object or objective to consider 15:35:57
22 the design or develop the design or other aspects of 15:36:02
23 the project. 15:36:06
24 In this respect, I guess you could say 15:36:08
25 we were more like lenders' engineers as described by 15:36:10

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1 Mr. Guillet last week where he said a lender's 15:36:17
2 engineer role was to challenge the project and the 15:36:21
3 risks facing it, and how those might impact the 15:36:26
4 project. 15:36:29
5 In assessing the risks facing the 15:36:37
6 project, we recognise that risks can have both 15:36:39
7 direct cost and schedule impacts or implications. 15:36:43
8 And in undertaking our work, we identified 15:36:50
9 a significant number of risks. 15:36:55
10 We fully acknowledge that not all of 15:36:57
11 those risks would have materialized, and that some 15:37:00
12 of them that did materialize could have been 15:37:05
13 mitigated. But we also considered -- considered it 15:37:08
14 unrealistic that in a project of this size and 15:37:12
15 complexity, that no risks would materialize that 15:37:15
16 would have an impact on project -- on schedule 15:37:21
17 and/or costs. 15:37:26
18 The other thing that is important is 15:37:33
19 our analysis is based on the status of the project 15:37:35
20 and the industry, as at the -- effectively the 15:37:39
21 11th of February, 2011. 15:37:47
22 In other words, looking at the project 15:37:51
23 as if it had continued under the scenario that is 15:37:53
24 being dealt with in this hearing. Essentially, we 15:38:00
25 found that the project had a significant risk 15:38:10

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1 information, develop solutions and therefore reduce 15:39:52
2 the risks facing the project. 15:39:56
3 If we -- right, we're there now. 15:40:10
4 Confusing me -- we also concluded that the project 15:40:21
5 was the first of a kind. I think it is essentially 15:40:31
6 obvious that the project would have been the first 15:40:34
7 offshore wind project permitted in North America and 15:40:36
8 particularly under the REA process. 15:40:40
9 That inherently would have meant the 15:40:42
10 project would have been subject to more scrutiny 15:40:46
11 since the different agencies involved would have 15:40:49
12 wanted to make sure that they weren't setting any 15:40:54
13 unintended precedence by accepting certain 15:40:58
14 processes, approvals or solutions. 15:41:04
15 In terms of technology, we've already 15:41:07
16 heard today from COWI that the use of semi-floating 15:41:09
17 gravity-based foundation for offshore wind farms is 15:41:20
18 an innovative -- it is the new solution. So this 15:41:23
19 would have been at that time the first project to 15:41:26
20 employ this particular technology in the offshore 15:41:30
21 wind sector. 15:41:33
22 Finally, in terms of construction, as 15:41:38
23 the first offshore wind project to be constructed in 15:41:40
24 North America, the supply chain would have been 15:41:45
25 doing the project -- this type of project for the 15:41:48

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1 profile. 15:38:13
2 The FIT contract imposed a fixed time 15:38:15
3 or fixed milestones for the project. And those, 15:38:20
4 when taken into consideration that this was a first 15:38:27
5 of a kind project, and that it was in the early 15:38:30
6 stages of development, meant or led to our 15:38:39
7 conclusion that it had a significant risk profile. 15:38:41
8 If we just look at each of those in 15:38:49
9 turn, we considered that the project was in early 15:38:54
10 stage of development, because if I summarize those 15:38:56
11 points there, it still had a number of studies, both 15:39:03
12 technical, environmental and other work to do to 15:39:08
13 develop the project. 15:39:12
14 In addition, it still was in the 15:39:17
15 process of securing sponsors and funding. And we 15:39:19
16 considered that this is the definition of a project 15:39:23
17 in the early stage of development. 15:39:27
18 Implicit in a project being in the 15:39:30
19 early stage of development is that it has a higher 15:39:32
20 risk profile than in later stages. The purpose of 15:39:34
21 the development process is to reduce the risk 15:39:38
22 profile of the project as has been mentioned many 15:39:41
23 times. 15:39:45
24 You iteratively work through the 15:39:45
25 solutions, identify more -- you obtain more 15:39:50

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1 first time associated with the inevitable learning 15:41:50
2 curve that they would have to go through, 15:41:56
3 notwithstanding their experience in all other 15:41:58
4 similar or analogous types of technology and 15:42:02
5 projects. 15:42:06
6 If we now move onto the schedule, 15:42:13
7 clearly we looked -- we considered the schedule 15:42:20
8 presented by Windstream in both their initial -- 15:42:22
9 their claim memorial and their second submission. 15:42:29
10 And one of the things we did was to compare that 15:42:35
11 against experience internationally with offshore 15:42:40
12 wind projects. 15:42:44
13 We used the 4C database for this 15:42:46
14 analysis. And in order to provide a consistent 15:42:53
15 measure, because there are many different measures 15:42:57
16 of dates, but the one which is normally reasonably 15:43:01
17 consistently available is the date when the permits 15:43:05
18 were obtained or the permitting process was 15:43:11
19 completed to the date of commercial operation. 15:43:13
20 What this graphic shows is that the 15:43:16
21 Windstream project would have achieved at that -- 15:43:21
22 what's effectively construction period, if you 15:43:26
23 like -- faster than any other project 15:43:29
24 internationally to date. 15:43:35
25 I would stress that we heard earlier 15:43:36

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1 that Sgurr's representative indicated that we maybe 15:43:38
2 cherry-picked our projects for this graphic. I'd 15:43:44
3 emphasise that this represents all the projects for 15:43:48
4 which this information was available in the 4C 15:43:51
5 database. 15:43:54
6 Windstream, in their first submission, 15:44:07
7 submitted a schedule, which I believe was included 15:44:11
8 as appendix B of the first Sgurr report, which, in 15:44:18
9 many respects, as was again, Ms. Squires took Sgurr 15:44:25
10 through earlier, was very similar to the schedules 15:44:31
11 in use in earliest documents referenced by the 15:44:34
12 Claimant, including schedules in use by Windstream 15:44:42
13 back in late 2010. 15:44:52
14 In our first report, we identified 15:44:53
15 a number of concerns, discrepancies, errors, if you 15:44:55
16 like, in that schedule included in the Windstream 15:45:01
17 submission. 15:45:07
18 As a result of that, we analyzed and 15:45:08
19 developed our own schedule which we found led to 15:45:12
20 a commercial operation date of July 2020. I believe 15:45:18
21 that's approximately four years after -- or three 15:45:23
22 years after supply and default date. 15:45:26
23 As a result of our first report in 15:45:30
24 this second submission, Windstream submitted -- or 15:45:32
25 through SgurrEnergy they submitted a revised 15:45:37

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1 possibly unlikely to be achieved for a first of 15:47:35
2 a kind project, arguably unlikely to be achieved. 15:47:38
3 We identified some bottlenecks in the 15:47:43
4 gravity-based foundation' manufacturing schedule. 15:47:47
5 Those have been discussed with COWI today who 15:47:51
6 indicated that perhaps we had not understood or the 15:47:58
7 process that would be involved. 15:48:03
8 However, we believed that the 15:48:05
9 submission or description of the process provided in 15:48:06
10 the document was very clear, that the project went 15:48:11
11 through certain stages, in which case, those 15:48:14
12 bottlenecks would occur. 15:48:17
13 Finally, as has also been discussed, 15:48:20
14 the delivery time for the wind turbines was assumed 15:48:22
15 to be shorter than that provided by the TSA. 15:48:26
16 We tried to analyse using the Sgurr 15:48:40
17 schedule. We had that in MS project format. We 15:48:43
18 tried to use that to analyse the impact of those. 15:48:48
19 We found that because the schedule was 15:48:51
20 not robustly linked in its activities, that wasn't 15:48:53
21 practical. So we produced our own high-level 15:48:57
22 schedule which was deliberately focused on the 15:49:01
23 critical path items, the Sgurr schedule as I think, 15:49:06
24 approximately 400 lines long. 15:49:11
25 We reduced that significantly and took 15:49:15

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1 schedule which had significant changes from the 15:45:41
2 original Windstream schedule. 15:45:45
3 Notwithstanding those significant 15:45:52
4 changes when we looked at that schedule, we 15:45:54
5 identified a number of areas where we still had 15:45:58
6 concerns as to the schedule being proposed by 15:46:02
7 Windstream. Specifically, they were proposing that 15:46:09
8 construction would be -- start before receipt of the 15:46:16
9 REA, and the notice to proceed from OPA. 15:46:21
10 Alternatively, if they were wanting to 15:46:26
11 start construction ahead of receiving that, they 15:46:30
12 would have needed significant self financing ahead 15:46:34
13 of -- because that would have been ahead of 15:46:38
14 financial close. 15:46:40
15 Secondly, as has been discussed 15:46:44
16 actually on a couple of occasions already in various 15:46:47
17 witness statements, the time to obtain the REA in 15:46:53
18 that schedule was shorter than that proposed by 15:46:58
19 Windstream's own experts and the time -- and within 15:47:02
20 that, the time for -- allowed for environmental 15:47:06
21 field studies had been reduced, without explanation. 15:47:10
22 The schedule also showed that 15:47:19
23 financial close would be achieved concurrently with 15:47:21
24 completion of the ERT process. 15:47:28
25 In our experience, this is unusual and 15:47:33

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1 into account the concerns we had. I'm not going to 15:49:17
2 go into those in detail, but they are available on 15:49:24
3 the record if necessary. 15:49:28
4 The impact of that was that when we 15:49:29
5 analysed the schedule, our schedule showed that the 15:49:32
6 earliest date that commercial operation could be 15:49:40
7 achieved would have been August 2018. That's 15:49:43
8 approximately 13 months after the supplier default 15:49:48
9 date which, again, arguably could have rendered the 15:49:53
10 project not viable. 15:49:58
11 This next page is simply graphical 15:50:06
12 representation of that previous slide. You might 15:50:08
13 find that easier to understand. 15:50:14
14 One point which I should have made and 15:50:17
15 I omitted from what I've just said, is that we had 15:50:19
16 assumed -- or in preparing our schedule, we used the 15:50:23
17 same timeframes as proposed in the Windstream 15:50:30
18 schedule in all aspects, in all elements except 15:50:33
19 those five or six points where we had concerns. 15:50:37
20 In all other respects, we had accepted 15:50:44
21 the specific durations and timeframes imposed by 15:50:46
22 Windstream. 15:50:51
23 So finally, I just say that we believe 15:50:57
24 our schedule depicts the earliest possible 15:51:01
25 commercial operation date based on the assumptions 15:51:04

1 and the evidence submitted by Windstream in their 15:51:08
2 second submission. 15:51:12
3 I've spoken extensively about the 15:51:14
4 risks that the -- I've spoken about the risks that 15:51:16
5 the project faced and we referred to these 15:51:20
6 extensively in our reports, and we note that in our 15:51:22
7 schedule, apart from whether a mechanical breakdown 15:51:28
8 delays that have been used in respect of the marine 15:51:34
9 operations, we have not made any provision for 15:51:37
10 delays arising from risks being realised. 15:51:44
11 And therefore, we would normally 15:51:47
12 consider it prudent at these early stages in 15:51:49
13 a project and in early development stages, that some 15:51:51
14 form of contingency is provided within the schedule. 15:51:55
15 That's all I have to say. 15:52:02
16 PRESIDENT: Thank you very much. And 15:52:08
17 will there be questions. 15:52:11
18 MS. SQUIRES: Yes, just two very brief 15:52:14
19 questions. 15:52:16
20 EXAMINATION-IN-CHIEF BY MS. SQUIRES: 15:52:17
21 Q. Mr. Clarke, you would have heard 15:52:27
22 earlier when Mr. Irvine responded to my questions 15:52:28
23 with respect to possibly delaying the renewable 15:52:32
24 energy approval based on Ms. Powell's testimony by 15:52:35
25 six months. 15:52:38

1 the bottleneck in production that you had identified 15:54:10
2 in your report could be fixed. 15:54:13
3 Can you tell me -- can you tell the 15:54:15
4 Tribunal what this means for the schedule and for 15:54:18
5 other items that might arise on the critical path? 15:54:21
6 A. Assuming that it could be fixed, 15:54:25
7 and the 120 days schedule -- period for fabrication 15:54:28
8 of each turbine -- sorry, each foundation could 15:54:37
9 be -- or was achieved, the impact of that would be 15:54:40
10 that instead of, as per our schedule, the 15:54:47
11 gravity-based foundation being on the critical path, 15:54:51
12 the turbine delivery would have been on the critical 15:54:54
13 path. 15:54:58
14 And again, if you look at our 15:54:58
15 schedule, you will see that the impact of that is 15:55:02
16 maybe one or two months. I can't give you the exact 15:55:05
17 figure offhand, but it's a short period. 15:55:08
18 Because the two were quite closely 15:55:10
19 linked time-wise, and therefore, even if that was 15:55:14
20 fixed in the gravity-based manufacturing process, 15:55:19
21 and the time could have been achieved, the overall 15:55:24
22 time to commercial operation in our assessment would 15:55:28
23 have not been significantly different. 15:55:30
24 It might have been reduced by one or 15:55:32
25 two months, but it would have still meant that the 15:55:35

1 Can you explain briefly for the 15:52:40
2 Tribunal what impact this would have on the Sgurr 15:52:41
3 schedule? 15:52:45
4 A. I have had a brief look at that. 15:52:48
5 It's unfortunately not a very straightforward 15:52:52
6 analysis because of the difficulties I referred to 15:52:55
7 earlier, that the Sgurr schedule has not got 15:52:58
8 a complete set of links between different 15:53:03
9 activities. 15:53:06
10 However, I did try to run it and 15:53:08
11 I found that what it was likely to do -- but I can't 15:53:11
12 be certain right now -- is it was likely to delay 15:53:16
13 the installation of the turbines by a full season, 15:53:19
14 because it would have shifted the delivery of the -- 15:53:22
15 moving the REA process out by six months, 15:53:29
16 effectively extended the time for financial close by 15:53:35
17 six months or the notice to proceed by six months, 15:53:38
18 at which time the project -- the -- allowing the 14 15:53:40
19 months for delivery of the first turbine, assumed by 15:53:46
20 Windstream, or that would have possibly shifted the 15:53:51
21 installation of the turbines into the next summer. 15:53:57
22 So, effectively a whole construction 15:54:00
23 season might have been lost. 15:54:02
24 Q. All right. And you would have 15:54:05
25 heard Mr. Cooper this morning from COWI explain that 15:54:06

1 supply default date would have been missed by 15:55:38
2 a considerable period. 15:55:41
3 Q. And lastly, can you briefly 15:55:42
4 explain for all of our benefits, how the scheduling 15:55:43
5 links work in that type of program? 15:55:46
6 A. Oh, now that is a challenging 15:55:50
7 thing to do briefly. 15:55:52
8 Effectively how this type of software 15:55:57
9 works is that you link activities by a -- 15:55:59
10 essentially one of four types of linkage. 15:56:06
11 The most common one is what's called a 15:56:11
12 "finish-to-start" relationship where the first 15:56:13
13 activity finishes, and then the next activity 15:56:17
14 starts. 15:56:20
15 You can modify that or extend that by 15:56:23
16 putting either positive or negative lags on that. 15:56:30
17 So, if, for example, you needed 15:56:34
18 a two-week delay while something was processed, 15:56:37
19 after one activity finished and the next activity 15:56:40
20 started, you would put in a positive lag of two 15:56:43
21 weeks. 15:56:46
22 So that's the most commonly used 15:56:48
23 relationship. 15:56:50
24 The next most commonly used one is 15:56:52
25 called a "start to start" relationship where 15:56:55

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1 an activity -- one activity can start as soon as or 15:56:59
2 at the same time as another activity starts. 15:57:03
3 And again, you can -- you would 15:57:06
4 normally only use positive lags on that, but there 15:57:08
5 is no hard and fast rule on that. 15:57:13
6 The third type of relationship is 15:57:16
7 a finish to finish, and that is where an activity 15:57:17
8 can only finish when another activity has finished. 15:57:24
9 And again, you would normally put in 15:57:28
10 some sort of lag on that. 15:57:30
11 The final one is not commonly used, 15:57:32
12 which is a start-to-finish relationship, which is 15:57:35
13 the reverse of the finish to start relationship. 15:57:40
14 In fact, the Sgurr program was one of 15:57:44
15 the first times I've seen that relationship used in 15:57:48
16 over 20 years of developing these types of projects, 15:57:52
17 but it was perfectly valid. How they used it, I was 15:57:56
18 quite happy with it. 15:58:01
19 I'm sorry if that was too -- it is 15:58:03
20 quite a technical process. 15:58:05
21 MS. SQUIRES: Thank you. Those are my 15:58:09
22 questions. 15:58:10
23 PRESIDENT: Thank you, Ms. Squires. 15:58:11
24 Q. I have what I think should be 15:58:53
25 approximately one hour's worth of questions so we'll 15:58:55

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1 see where we go, but that will take us to the end of 15:58:58
2 my notes, and then I would be grateful to start 15:59:00
3 again tomorrow. 15:59:02
4 PRESIDENT: That will be fine. 15:59:03
5 CROSS-EXAMINATION BY MS. SEERS: 15:59:04
6 Q. Good afternoon, Mr. Clarke. 15:59:04
7 If you could have in front of you, 15:59:09
8 yes, this large schedule and the binder there, the 15:59:10
9 black binder and your two reports. And then if we 15:59:14
10 need to pull up anything else, I'll let you know. 15:59:17
11 Okay. 15:59:20
12 Q. Just get myself organized here 15:59:21
13 with the binders, the constant challenge around 15:59:24
14 here, with the constrained space. 15:59:27
15 Mr. Clarke, I don't know if you were 15:59:58
16 here on Thursday of last week. You were -- 16:00:01
17 A. I was, yes. 16:00:04
18 Q. So you will recall that we heard 16:00:05
19 from Canada's other expert, Mr. Guillet? 16:00:06
20 A. I was there for that, yes. 16:00:12
21 Q. Okay. So I've included 16:00:13
22 a transcript from his evidence at Tab 1 of your 16:00:14
23 binder. 16:00:19
24 If you look at page 187 -- I suppose 16:00:20
25 the pages are not numbered. 16:00:35

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1 Yes, it's right at the top where he 16:00:37
2 says: 16:00:39
3 "I mean, if you want me to attest 16:00:39
4 that Sgurr is one of the top 16:00:41
5 technical experts in the field" -- 16:00:44
6 PRESIDENT: You're looking at Tab 1? 16:00:45
7 BY MS. SEERS: 16:00:48
8 Q. Right at the top. The original 16:00:48
9 I was working from had numbering. Unfortunately, 16:00:49
10 this one doesn't. It is for the record, I believe 16:00:51
11 to be page 187 in the version of the transcript that 16:00:55
12 does have numbers. 16:00:58
13 So, Mr. Guillet testified: 16:01:00
14 "I mean, if you want me to attest 16:01:03
15 that Sgurr is one of the top -- 16:01:05
16 top technical experts in the 16:01:06
17 field, I'm happy to stipulate to 16:01:07
18 that. They're one of the two 16:01:09
19 companies (to) do that. It's 16:01:11
20 either Mott or Sgurr. And half of 16:01:13
21 the Sgurr team has gone over to 16:01:15
22 K2. K2 is the third one, but they 16:01:18
23 are amongst the key technical 16:01:22
24 experts in offshore wind. 16:01:23
25 I am happy to stipulate that 16:01:25

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1 SgurrEnergy is among the top 16:01:28
2 technical experts in the sector 16:01:29
3 and highly credible, if that's 16:01:31
4 what you want to get at." 16:01:33
5 And then on what I understand to be 16:01:34
6 page 189, which would be two pages later, Mr. Terry 16:01:35
7 took Mr. Guillet to an article that Mr. Guillet had 16:01:45
8 written about the Veja Mate project off the coast of 16:01:50
9 Germany, and Mr. Guillet said he describes Sgurr as: 16:01:55
10 "Having brought credibility to the 16:01:57
11 project and comfort to the 16:01:59
12 lenders." 16:02:01
13 And Mr. Guillet stood by that 16:02:01
14 statement. 16:02:03
15 So, my question, Mr. Clarke, I take it 16:02:05
16 that you have no reason to disagree with Mr. Guillet 16:02:08
17 that Sgurr is one of the top technical advisors in 16:02:12
18 offshore wind? 16:02:16
19 A. I agree with that. I have no 16:02:17
20 difficulty in agreeing with that at all. 16:02:21
21 Q. Okay. And then still on page 189, 16:02:23
22 Mr. Terry asked Mr. Guillet: 16:02:26
23 "Question: Has URS been involved 16:02:32
24 in any of your offshore wind 16:02:34
25 projects?" 16:02:36

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1 And Mr. Guillet answered on the next 16:02:36
2 page. He said: 16:02:38
3 "Answer: I've been in contact 16:02:39
4 with them recently over this 16:02:41
5 project, but I'm not very familiar 16:02:42
6 with them. If they were involved, 16:02:44
7 it would be more in the early 16:02:46
8 stages, early engineering, which 16:02:48
9 we don't usually touch, so I don't 16:02:49
10 know them that well." 16:02:50
11 And then Mr. Terry asked: 16:02:54
12 "Question: Have they been 16:02:57
13 involved in any of your projects 16:02:57
14 that you've worked on? 16:02:59
15 "Answer: No." 16:03:01
16 So is it fair to say, Mr. Clarke, that 16:03:02
17 unlike Sgurr, URS is not known amongst the offshore 16:03:05
18 wind facility development industry as having 16:03:10
19 expertise in this area? 16:03:14
20 A. That would only be partially 16:03:16
21 correct. If you -- there's two things there. 16:03:18
22 Certainly, the project I had mentioned that I had 16:03:24
23 specific involvement in one offshore wind, and that 16:03:27
24 was an early stage development project where 16:03:29
25 a company was looking to understand whether it was 16:03:34

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1 a technical director in the US power unit with 16:05:07
2 responsibility for the transmission and distribution 16:05:10
3 sector? 16:05:11
4 A. That's my current role, yes. 16:05:13
5 Q. And you are based in Bristol, UK? 16:05:15
6 A. That's correct. 16:05:17
7 Q. I see you've recently worked on 16:05:17
8 a number of projects, and I see from this involving 16:05:19
9 electricity grid transmission and connection issues 16:05:23
10 for various clients? 16:05:25
11 A. That's correct, yeah. 16:05:27
12 Q. And I take it, then, that you 16:05:28
13 specialize in that topic, electricity transmission? 16:05:30
14 A. I didn't actually state in my -- 16:05:33
15 I realize in my presentation that I'm an Electrical 16:05:35
16 Engineer by background. 16:05:40
17 Q. Okay. 16:05:41
18 A. So, yes, I've tended to personally 16:05:42
19 be involved in grid connections associated with wind 16:05:46
20 farms. 16:05:49
21 Q. So I take it grid connection, 16:05:49
22 transmission lines, distribution lines, that kind of 16:05:51
23 thing? 16:05:53
24 A. I don't do a lot on distribution. 16:05:54
25 We tend to work mainly on transmission, in other 16:05:56

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1 worth bidding for one of the round 3 licenses in the 16:03:38
2 UK. 16:03:42
3 The other aspect that -- or two 16:03:45
4 aspects where we've actually done significant work 16:03:48
5 in the offshore wind industry is in foundation 16:03:51
6 design, and specifically the design of, I would say, 16:03:55
7 foundations in more difficult -- under more 16:04:06
8 difficult technical conditions. 16:04:11
9 And, in fact, I understand that we 16:04:12
10 were involved in the design of the foundations for 16:04:16
11 the first offshore wind farm in the UK waters 16:04:19
12 undertaken by GE at that time. 16:04:24
13 Q. Well, we'll go through the CVs of 16:04:27
14 your project team and you can elaborate that on that 16:04:31
15 in a moment. 16:04:34
16 But let's start with yours since 16:04:36
17 you're the one here testifying. And I'm sure I'm 16:04:38
18 going to be accused with being too enamoured by 16:04:40
19 resués, but I'm of the view that when it comes to 16:04:45
20 experts, it is important to start there. So I've 16:04:49
21 included yours at Tab 2 of your binder, if it 16:04:53
22 assists you. 16:04:56
23 Of course, it is in appendix to your 16:04:57
24 first report. 16:04:59
25 So I understand that you are 16:05:07

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1 words, at the higher voltages. 16:05:59
2 Q. So these are the lines that 16:06:02
3 connect power projects to the grid? 16:06:03
4 A. Would be a typical -- one of the 16:06:04
5 typical areas I work, yeah. 16:06:07
6 Q. What are some of the other areas, 16:06:08
7 transmission -- 16:06:10
8 A. We are significantly involved in 16:06:11
9 substation design -- 16:06:15
10 Q. Right. 16:06:17
11 A. -- for all the major utilities -- 16:06:17
12 well, almost all the major utilities in the UK and 16:06:19
13 Ireland. We have done transmission line design, 16:06:22
14 overhead transmission line design. 16:06:28
15 Q. Mostly in the UK? 16:06:33
16 A. In -- actually in Ireland, and 16:06:35
17 then elsewhere in the world. Actually, not in the 16:06:37
18 UK specifically. 16:06:43
19 Q. Would it be fair to say, 16:06:47
20 Mr. Clarke, that when you work on electricity 16:06:48
21 transmission projects for clients, you work under 16:06:52
22 deadlines imposed by your clients? 16:06:57
23 A. That would be fair, yeah. 16:07:00
24 Q. Right. When you have an external 16:07:02
25 deadline imposed by a client, I take it that you try 16:07:04

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1 to meet it? 16:07:07
2 A. Yes, we do. 16:07:08
3 Q. Of course that's all -- 16:07:09
4 I understand that that doesn't always happen in the 16:07:11
5 real world, but I take it to be the general 16:07:12
6 objective that engineers have when they work on 16:07:14
7 projects? 16:07:18
8 A. That's the general objective, yes. 16:07:19
9 Q. Lawyers too, by the way, when we 16:07:21
10 work on... 16:07:23
11 A. That's also why you have 16:07:25
12 variations and early warning notices in contracts. 16:07:26
13 Q. Certainly. Certainly. And so 16:07:30
14 I take it if engineers work like I work, you start 16:07:32
15 from your deadline and you come up with a project 16:07:38
16 plan to achieve that deadline so you can -- 16:07:42
17 A. If that deadline is achievable. 16:07:45
18 Q. Yes. 16:07:48
19 A. And there are many occasions when 16:07:48
20 it turns out not to be and we have to break the bad 16:07:55
21 news -- 16:07:58
22 Q. Right. 16:07:59
23 A. -- to our clients, that actually 16:07:59
24 the schedule they would like to achieve is not 16:08:02
25 achievable. 16:08:05

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1 of the electrical and mechanical engineering 16:09:20
2 department at Scott Wilson Railways? 16:09:24
3 A. I should actually clarify that 16:09:26
4 Scott Wilson was acquired by URS. 16:09:28
5 Q. Okay. 16:09:31
6 A. So actually -- 16:09:31
7 Q. Same company? 16:09:32
8 A. Same company. In fact what I can 16:09:33
9 state is that I have been with the same company for 16:09:34
10 29 years. 16:09:37
11 Q. Railway division then? 16:09:38
12 A. No, prior to joining -- when 16:09:40
13 I moved to the UK in 2001, I joined the railway 16:09:44
14 team. 16:09:47
15 Q. Right. 16:09:48
16 A. Prior to that, I was actually in 16:09:49
17 Africa in Zimbabwe where I was essentially running 16:09:51
18 an electrical engineering consultancy for Scott 16:09:57
19 Wilson. 16:10:02
20 Q. And we'll come to that employer 16:10:02
21 experience, but now we're focusing on your 16:10:03
22 experience with what's described in your resumé as 16:10:06
23 Scott Wilson Railways, which I take it to be 16:10:10
24 a predecessor of URS in the UK? 16:10:13
25 A. It was. In fact, Scott Wilson, in 16:10:15

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1 Q. So sometimes you might tell your 16:08:06
2 clients, "I'm sorry, we can't do this." 16:08:07
3 But generally your objective would be 16:08:12
4 to try to meet a deadline? 16:08:14
5 A. Clearly, that's what you would try 16:08:17
6 to do if it's possible, but I can also state that 16:08:18
7 there have been times, obviously, when we've gone in 16:08:22
8 and told them a deadline was not achievable. 16:08:26
9 And there has also been times when we 16:08:28
10 have not been prepared to bid for work because the 16:08:34
11 deadlines were unachievable, in our opinion, and we 16:08:36
12 made that clear to our client that that was the 16:08:39
13 reason we were not prepared to bid for the project. 16:08:42
14 Q. I take it that one way to achieve 16:08:44
15 a tight deadline if you have a client that is 16:08:46
16 insisting that it be achieved is sometimes you can 16:08:52
17 do tasks in parallel, for example, or certain tasks. 16:08:54
18 Certainly not all tasks can be done in -- 16:08:57
19 A. I think that's inherent in the 16:09:00
20 scheduling process. And as you say, some tasks can 16:09:01
21 be done in parallel, but some tasks have to be done 16:09:05
22 sequentially, and those are the ones that cause the 16:09:10
23 difficulties with the deadlines. 16:09:13
24 Q. Certainly. Certainly. Before 16:09:15
25 joining URS in 2005, I understand you were the head 16:09:17

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1 the UK was a much larger company than URS. 16:10:18
2 Q. Okay. 16:10:21
3 A. But obviously internationally, URS 16:10:21
4 was much larger. 16:10:23
5 Q. Right. And so it's described 16:10:24
6 though as Scott Wilson Railways. So, do 16:10:26
7 I understand that you were responsible or worked 16:10:28
8 within the railway division? 16:10:31
9 A. Within the railway division of 16:10:32
10 Scott Wilson, that's correct, yes. 16:10:33
11 Q. So you worked, I take it, in 16:10:35
12 transmission and distribution of power issues within 16:10:37
13 the railways? 16:10:42
14 A. Within the railways dealing with, 16:10:43
15 primarily, electrical aspects of requirements for 16:10:45
16 the railway network. 16:10:48
17 Q. I see. Okay. And then moving 16:10:49
18 then to your experience in Africa. 16:10:52
19 So you were based in Harare, Zimbabwe 16:10:56
20 for a number of years, I take it doing mechanical 16:11:00
21 and electrical engineering work? 16:11:04
22 A. That's correct, yes. 16:11:07
23 Q. And I take it you were working on 16:11:08
24 developing the Zimbabwe transmission infrastructure? 16:11:10
25 A. Actually, with Scott Wilson 16:11:14

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1 I didn't do very much of that. At the time when 16:11:15
2 I was with -- prior to that I was with the grid 16:11:19
3 operator in Zimbabwe. 16:11:24
4 Q. So developing country, obviously, 16:11:27
5 you were working on, I assume, issues surrounding 16:11:29
6 that in the transmission grid, presumably 16:11:34
7 under-developed transmission grid? 16:11:37
8 A. Yes, although it was at that time 16:11:39
9 -- although it needed modernization, it was 16:11:40
10 appropriate for the size of the country. 16:11:45
11 Q. And I take it that you weren't 16:11:47
12 involved in any offshore wind in Zimbabwe? 16:11:48
13 A. Well, that was back in the 1980s 16:11:52
14 and as we heard earlier, the first offshore wind 16:11:55
15 farm was only done in 1991. 16:11:59
16 Q. So, that brings me to the one 16:12:05
17 reference in your resumé about offshore wind that 16:12:06
18 you mentioned. 16:12:09
19 So it's four years ago in 2012, I take 16:12:09
20 it that you acted was project director and quality 16:12:12
21 assurance for a pre-feasibility study to support 16:12:14
22 a licensed bid for a 600 megawatts wind farm in the 16:12:19
23 Irish Sea? 16:12:23
24 Q. That's correct? 16:12:25
25 A. Correct. 16:12:26

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1 MR. SPELLISCY: I generally suggest 16:13:27
2 that credibility is determinations for the Tribunal 16:13:28
3 to make, but not for the Claimant to suggest to 16:13:30
4 a witness. 16:13:33
5 PRESIDENT: Yes, please, rephrase the 16:13:34
6 question. 16:13:35
7 BY MS. SEERS: 16:13:36
8 Q. Well, perhaps it's a question for 16:13:50
9 submissions to the Tribunal separately. 16:13:51
10 You don't personally, sir, have 16:13:58
11 experience with the fabrication of gravity-based 16:14:01
12 foundation? 16:14:05
13 A. No, I just might point out the 16:14:06
14 statement I made in my presentation that my role in 16:14:09
15 this was to coordinate the activities of a group of 16:14:13
16 experts from within our organization, to manage 16:14:17
17 those activities, and to -- yeah, effectively to 16:14:21
18 coordinate the multi-disciplinary aspect. 16:14:27
19 That's a feature of all the work I do 16:14:30
20 right now is that although I'm an electrical 16:14:33
21 engineer by training, almost without exception, all 16:14:36
22 the projects I'm involved with are 16:14:41
23 multi-disciplinary projects involving civil 16:14:42
24 engineering, geotechnical engineering, very often 16:14:46
25 environmental elements, so I'm very familiar with 16:14:50

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1 Q. So as I understand it, it sounds 16:12:27
2 like a preliminary study of some kind to support 16:12:28
3 a bid? 16:12:30
4 A. It was a preliminary study, 16:12:31
5 effectively for them to pass -- to make 16:12:33
6 a recommendation to their board as to whether or not 16:12:36
7 to make a bid for that project. 16:12:38
8 Q. Right. So you, I take it, were 16:12:40
9 not involved in any of the detailed design and 16:12:44
10 engineering work in connection with that project? 16:12:46
11 A. No. 16:12:48
12 Q. And you were not involved in any 16:12:49
13 of the construction or procurement in connection 16:12:51
14 with that project? 16:12:55
15 A. No. In fact, on the basis of our 16:12:56
16 report, they decided not to proceed -- 16:12:58
17 Q. So the project did not -- 16:13:00
18 A. -- with the project. 16:13:01
19 Q. So, sir, I suggest to you, based 16:13:04
20 on your experience which does sound impressive in 16:13:09
21 electricity transmission, but I'm going to suggest 16:13:13
22 to you that you're not, in fact, qualified to 16:13:16
23 testify as an expert witness with respect to the 16:13:19
24 design and construction of an offshore wind 16:13:23
25 facility? 16:13:26

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1 working in the broader project environment. 16:14:53
2 Q. Okay. I appreciate that but my 16:14:56
3 question was, was narrow. 16:14:58
4 It was just -- I think you confirmed 16:15:00
5 that you don't have personal experience in 16:15:02
6 fabricating gravity-based foundation; right? 16:15:05
7 A. Correct. 16:15:07
8 Q. And you don't have personal 16:15:07
9 experience regarding transportation and installation 16:15:09
10 of gravity-based foundations? 16:15:13
11 A. No. 16:15:15
12 Q. Have you been to Ontario outside 16:15:23
13 the context of this proceeding? 16:15:24
14 A. No. 16:15:25
15 Q. And do you have any personal 16:15:26
16 experience regarding chartering vessels in Lake 16:15:27
17 Ontario? 16:15:32
18 A. No, as I said, this is where we 16:15:32
19 rely on the experts in our panel. 16:15:35
20 Q. Okay. 16:15:39
21 A. And my role was to coordinate 16:15:39
22 them. 16:15:41
23 Q. I understand that, and we'll come 16:15:42
24 to the other experts, and I'm just trying to 16:15:43
25 understand what the scope of your experience is and 16:15:45

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1 isn't, so I appreciate the confirmation. 16:15:49
2 So I take it that to that extent you 16:15:55
3 also don't have personal experience regarding 16:15:57
4 chartering vessels in the Great Lakes or the St. 16:15:59
5 Lawrence Seaway? 16:16:01
6 A. No. 16:16:01
7 Q. Do you have any personal 16:16:09
8 experience with respect to permitting under the 16:16:11
9 Canadian Navigation Protection Act? 16:16:11
10 A. No. 16:16:15
11 Q. Do you have any personal 16:16:15
12 experience regarding ice conditions in Lake Ontario? 16:16:16
13 A. No. 16:16:19
14 Q. Personal experience regarding wave 16:16:19
15 conditions in Lake Ontario? 16:16:21
16 A. No. 16:16:22
17 Q. Do you have any personal 16:16:26
18 experience regarding sediment disbursement from in-lake 16:16:27
19 construction in Lake Ontario? 16:16:31
20 A. No. 16:16:33
21 Q. Do you have any personal 16:16:33
22 experience with the protection of drinking water 16:16:34
23 under Ontario's Clean Water Act? 16:16:36
24 A. No. 16:16:38
25 Q. Turn up, please, sir, the CV of 16:16:47

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1 Q. I understand. 16:18:04
2 A. -- not to develop them ourselves. 16:18:04
3 Q. I understand. I'm just exploring 16:18:08
4 your experience. And so, I take it, and you may not 16:18:10
5 know, but I take it that the questions I asked you 16:18:15
6 about experience with Lake Ontario, ice and waves 16:18:17
7 and other issues, drinking water in Lake Ontario, 16:18:20
8 I take it that Mr. Norton also doesn't have 16:18:22
9 experience with those matters? 16:18:25
10 A. Not to my knowledge, no. 16:18:31
11 Q. And in the next tab you have the 16:18:33
12 CV of Mr. Adrian Wright, Tab 4. 16:18:34
13 And those are appended to the first 16:18:43
14 URS report, but they don't have exhibit numbers. 16:18:44
15 And I take it Mr. Wright works on 16:18:49
16 projects for modeling oil spills for BP and Shell 16:18:53
17 and the like? 16:18:57
18 A. That's some of the work he does. 16:18:58
19 Q. And I also don't see any North 16:19:00
20 America, Lake Ontario or Great Lakes experience on 16:19:03
21 his resumé; is that right? 16:19:06
22 A. That's correct. But I might point 16:19:10
23 out that the modeling process as bid states use 16:19:15
24 standard processes and procedures, so therefore the 16:19:18
25 ability to analyse submissions made by bid, they are 16:19:20

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1 Paul Norton of your team, which I've included at 16:16:49
2 Tab 3. 16:16:52
3 So I take it that Mr. Norton is 16:16:56
4 a coastal engineer, so did he prepare -- I take it 16:16:58
5 he prepared the sections of the reports that deal 16:17:01
6 with coastal engineering issues? 16:17:03
7 A. He and his team, yeah. 16:17:06
8 Q. And his team. It says on his 16:17:08
9 record that he appears to be quite well-traveled? 16:17:12
10 A. He certainly worked 16:17:15
11 internationally. 16:17:17
12 Q. I'm jealous. So it looks like 16:17:18
13 he's worked on projects in a number of countries, 16:17:20
14 including the UK and several countries in Africa and 16:17:23
15 the Middle East, Europe, with a lot of experience in 16:17:26
16 those places; right? 16:17:34
17 A. Right. 16:17:42
18 Q. But what I don't see, sir, on his 16:17:42
19 resumé is experience, experience with Lake Ontario 16:17:45
20 or even with North America. 16:17:48
21 Can you point me to any that he has? 16:17:49
22 A. I'm not aware of any, but, again, 16:17:53
23 if you come back to what I said our role was in 16:17:55
24 this, it was to analyze the submissions made by 16:17:59
25 Windstream -- 16:18:03

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1 technically qualified and experienced to do that. 16:19:28
2 Q. But he wouldn't have any 16:19:31
3 experience with Ontario's Clean Water Act, for 16:19:32
4 example? 16:19:35
5 A. I couldn't answer that 16:19:37
6 specifically. 16:19:38
7 Q. And I take it he wouldn't have any 16:19:39
8 experience -- 16:19:40
9 A. I don't have any myself, no. 16:19:42
10 Q. And I take it he wouldn't have any 16:19:44
11 experience at the location, for example, drinking 16:19:45
12 water intakes in eastern Lake Ontario? 16:19:48
13 A. No, not prior to this study, 16:19:50
14 anyway. 16:19:52
15 Q. And I take it he wouldn't have any 16:19:56
16 experience with modeling sediment disbursement in the 16:19:57
17 particular conditions present in Lake Ontario, 16:20:02
18 personally, he wouldn't have done that before, 16:20:05
19 I take it? 16:20:07
20 A. Not to my knowledge. 16:20:08
21 Q. Tabs 5 and 6 of your binder, you 16:20:13
22 have the CVs of Mr. Chris Sturgeon of Red Penguin 16:20:16
23 Associates, and Mr. Douglas Percy of Red Penguin 16:20:22
24 Associates. 16:20:25
25 So I take it Red Penguin is a 16:20:25

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1 subcontractor of URS? 16:20:31
2 A. That's correct. 16:20:33
3 Q. And I take they are based in the 16:20:33
4 UK as well and have experience with underwater 16:20:36
5 cables? 16:20:40
6 A. That's their experience. 16:20:40
7 Q. But, again, I don't see any 16:20:43
8 experience listed with underwater cables in Lake 16:20:44
9 Ontario? 16:20:47
10 A. Again, I'm not aware of that. 16:20:48
11 Certainly Mr. Sturgeon is very experienced in most 16:20:51
12 parts of the world but not -- 16:20:55
13 Q. But not in Lake Ontario? 16:20:57
14 A. But I didn't say "yes" or "no" 16:20:59
15 specifically. 16:21:01
16 Q. You are not aware of him having 16:21:01
17 any experience with Lake Ontario? 16:21:03
18 A. No, no. 16:21:04
19 Q. And you are not aware of him 16:21:05
20 having any experience with the underwater cable that 16:21:06
21 was laid for the Wolfe Island on-shore project? 16:21:10
22 A. I think that's reasonably obvious. 16:21:14
23 Q. It may also be reasonably obvious 16:21:16
24 that you are not aware of him having any experience 16:21:18
25 with the proposed underwater cable to connect the 16:21:21

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1 proposed Amherst Island on-shore wind project to the 16:21:26
2 mainland near the project site? 16:21:31
3 A. To my knowledge, he is not 16:21:32
4 a consultant on that project. 16:21:33
5 Q. And you are not aware of him 16:21:35
6 having any experience or of either of them having 16:21:36
7 any experience in the permitting of such cables in 16:21:39
8 Ontario; right? 16:21:42
9 A. No. 16:21:43
10 Q. At Tab 7 I've included the CV of 16:21:51
11 Ben Gowers, and apart from the one pre-feasibility 16:21:53
12 study for an offshore project that you were involved 16:21:59
13 with, he appears to be the only person on your team 16:22:01
14 who has some experience with offshore wind 16:22:04
15 facilities; is that correct? 16:22:06
16 A. No, that's not correct. 16:22:07
17 Q. Would you point me to the CV of 16:22:08
18 the other person? 16:22:10
19 A. Certainly Mr. David Webb has 16:22:11
20 experience of the design of offshore wind 16:22:14
21 foundations. 16:22:20
22 Q. So we'll go to Mr. Webb's CV 16:22:20
23 afterward. 16:22:23
24 Anyone else? 16:22:24
25 A. Not that I'm aware of 16:22:25

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1 specifically, no. 16:22:26
2 Q. Okay. So you've included, by my 16:22:27
3 count, 111 pages of resumés with your two reports. 16:22:33
4 But again, the only one that I have seen that 16:22:37
5 disclosed experience with offshore wind facilities 16:22:41
6 was that of Mr. Gowers. 16:22:44
7 And I suppose we can look at 16:22:46
8 Mr. Webb's separately, but do you disagree with 16:22:47
9 that, of the 111 pages of resumés that's the only 16:22:51
10 experience? 16:22:54
11 A. I would agree that specifically 16:22:55
12 that is the case; however, where I -- what I would 16:22:57
13 state is that if you add up the experience of those 16:23:05
14 people, in fact, the ten people that I listed in my 16:23:09
15 presentation, the total there comes to over 16:23:12
16 250 years of experience, all in areas directly 16:23:20
17 related to the technologies and techniques used in 16:23:26
18 offshore wind. 16:23:29
19 Q. So they have experience, then, in 16:23:31
20 the various components, you would say, that go into 16:23:32
21 an offshore wind -- 16:23:35
22 A. That's correct. 16:23:37
23 Q. -- facility? So foundations on 16:23:37
24 the one hand, cablings, turbines, maybe various 16:23:43
25 different things, shipping vessels. 16:23:47

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1 So when you put them all together in 16:23:48
2 your -- in your -- I guess in your view, that gives 16:23:51
3 you the adequate experience to be giving expert 16:23:56
4 evidence about an offshore wind facility? 16:24:00
5 A. As the -- in the role that we were 16:24:04
6 playing or we were providing for this project. 16:24:09
7 Q. In the role that you were 16:24:14
8 providing for this project, so... 16:24:15
9 I looked through Mr. Gowers' resumé. 16:24:21
10 I didn't see, and you will point me to it if 16:24:28
11 I missed it, but I didn't see any experience with 16:24:30
12 actually building an offshore wind facility. 16:24:33
13 Did I miss it? 16:24:37
14 A. I believe you did. I'm trying to 16:24:44
15 find it because he was actually construction manager 16:24:44
16 on one offshore -- it's my understanding -- 16:24:45
17 Q. You're right. I do see that. 16:24:48
18 A. He was offshore manager for 16:24:50
19 an offshore wind project. 16:24:53
20 Q. So he was offshore manager for one 16:24:58
21 offshore wind project? 16:25:02
22 A. That's correct. 16:25:03
23 Q. And for other projects, he seems 16:25:04
24 to have been involved in a much more limited 16:25:05
25 capacity? 16:25:08

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1 A. Yes, in a variety of capacities 16:25:09
2 for offshore wind projects. 16:25:11
3 Q. So a lot of the entities are 16:25:12
4 listed as him having done tenders or providing 16:25:13
5 strategic support? 16:25:21
6 A. That's true, yeah. 16:25:22
7 Q. And based on -- he's not here to 16:25:25
8 tell us what his experience is obviously, so based 16:25:27
9 on this resumé, it seems to me, anyway, I would 16:25:29
10 suggest that his experience is perhaps limited; 16:25:36
11 would you disagree? 16:25:47
12 A. I would not fully agree with that. 16:25:48
13 He certainly demonstrated a very complete 16:25:50
14 understanding of the construction requirements for 16:25:53
15 an offshore wind farm. 16:25:58
16 Q. Okay. And he's not here, of 16:25:59
17 course, to testify so we can't ask him about his 16:26:01
18 experience? 16:26:04
19 A. Right. 16:26:05
20 Q. At Tabs 8 and 9 of your report -- 16:26:07
21 pardon me -- of your binder, you have the CVs of 16:26:09
22 Ms. Eleanor Hadland and Mr. Chris Frith, which were 16:26:13
23 included with your second report, the AECOM report? 16:26:19
24 A. Correct. 16:26:23
25 Q. And they appear to be, as 16:26:24

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1 I understand it, experienced in ports design. 16:26:25
2 And again, I see a lot of 16:26:30
3 international experience on their resumes, but what 16:26:32
4 I don't see is Lake Ontario experience or even North 16:26:34
5 American experience? 16:26:37
6 A. I would point out that we are a UK 16:26:39
7 consultancy, and it is quite unusual for offices in 16:26:41
8 the UK to work in North America actually. 16:26:44
9 Q. Certainly. Certainly. And they 16:26:50
10 are experienced in UK and elsewhere. 16:27:00
11 But just for the record, there doesn't 16:27:03
12 appear to be any experience with Lake Ontario? 16:27:06
13 A. That's correct. 16:27:08
14 Q. So, I take it that they too don't 16:27:11
15 have any experience, for example, with the 16:27:13
16 Navigation Protection Act? 16:27:15
17 A. I'm not sure why, as ports experts 16:27:18
18 they would necessarily have that experience, even if 16:27:21
19 they did have experience in Lake Ontario. 16:27:24
20 Q. So the contribution that they made 16:27:26
21 to the report, I take it then, was with respect to 16:27:29
22 chartering vessels and not with respect to shipping 16:27:32
23 lanes? 16:27:35
24 A. No, their contribution to the 16:27:36
25 report was in respect of, particularly, the on-shore 16:27:38

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1 manufacturing facility. 16:27:41
2 Q. I see. 16:27:42
3 A. And to an extent the use of 16:27:43
4 precast or prefabricated concrete structures which 16:27:52
5 has been evidenced on a number of occasions in this 16:27:56
6 hearing. 16:27:58
7 Q. I see. 16:27:59
8 A. Are analogous or have been used as 16:28:00
9 a basis for justifying that this wasn't -- although 16:28:04
10 this might not have been -- this is common 16:28:08
11 technology. 16:28:12
12 Q. Right. So they're responding, 16:28:12
13 I take it, to Mr. Cooper's report primarily? 16:28:14
14 A. Primarily they were looking at the 16:28:17
15 offshore foundations, yes. 16:28:18
16 Q. And something -- but Mr. Cooper, 16:28:20
17 you'll agree with me, has substantial experience in 16:28:21
18 the Great Lakes and in Lake Ontario, and they do 16:28:24
19 not, right? 16:28:27
20 A. I am not clear on that, I have to 16:28:30
21 say. 16:28:34
22 Q. Okay. 16:28:36
23 A. It was clear from Mr. Cooper's 16:28:36
24 presentation that he's been involved in a lot of -- 16:28:38
25 I think if I recall, it was the last nine years -- 16:28:41

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1 with offshore wind, but I'm not sure exactly how 16:28:44
2 much of that was in Great Lakes. 16:28:48
3 Q. Okay. In several instances in 16:28:49
4 both of your reports, and you mentioned this a bit 16:28:54
5 in your presentation as well, you identify risks 16:28:56
6 associated with the project in terms of the 16:29:01
7 magnitude of the risk as you see it. 16:29:04
8 But you don't express a conclusion 16:29:07
9 flowing from your risk assessment. So my question 16:29:12
10 to you is: Your report, to me, reads like a list of 16:29:14
11 risks without any real conclusion and so I take 16:29:20
12 it -- I take it -- and you will at the me if I've 16:29:24
13 got it wrong -- but I take it from the way your 16:29:29
14 reports are structured, that you were asked by 16:29:31
15 Canada to identify the potential risks of the -- 16:29:34
16 that the project might face regardless of their 16:29:36
17 magnitude; you were just asked too identify the 16:29:40
18 risks; is it that fair? 16:29:43
19 A. We were actually asked by Canada 16:29:45
20 to analyze the project from a technical and 16:29:46
21 environmental perspective. And in analyzing the 16:29:51
22 technical aspects, which is what we were asked to 16:29:59
23 do, we obviously went through and identified the 16:30:01
24 risks that the project faced. 16:30:05
25 Q. So you identified the risks and 16:30:10

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1 you applied a label as to whether, in your view, it 16:30:12
2 is a low risk, a medium risk or a high-risk? 16:30:14
3 A. That's correct. 16:30:17
4 Q. But as I read your reports and as 16:30:23
5 I understand your presentation, you don't actually 16:30:25
6 conclude that the risks that you outlined will 16:30:27
7 likely materialize or not likely materialize; is 16:30:29
8 that right? 16:30:33
9 A. We don't specifically speculate on 16:30:34
10 which risks will materialize. That's why they are 16:30:35
11 risks; they're not certainties. 16:30:39
12 We wouldn't describe them as risks if 16:30:42
13 they were going to materialize. 16:30:44
14 Q. Right. 16:30:45
15 A. I think what is reasonably clear 16:30:46
16 from both our reports and my presentation was that 16:30:48
17 we assess that this project had a high-risk profile. 16:30:53
18 Q. I understand you assessed the risk 16:30:58
19 profile, but my question is whether you assessed 16:31:00
20 whether the risks were likely to materialize or not 16:31:01
21 likely to materialize? 16:31:06
22 A. I think if you look at our 16:31:08
23 assessment, the one criteria that we used was the 16:31:09
24 like likelihood of the risk occurring or developing 16:31:17
25 and then the impact of that risk so... 16:31:23

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1 you or Mr. Barillaro; is that correct? 16:33:03
2 A. That's correct. 16:33:08
3 Q. So do I have it right that 16:33:09
4 Mr. Barillaro will be speaking about financing? 16:33:11
5 A. Yeah, finance and costs. 16:33:13
6 Q. And costs? 16:33:16
7 A. And, specifically, aspects -- 16:33:18
8 I might defer to him on aspects relating to 16:33:19
9 commercial implications as well because he's more 16:33:24
10 knowledgeable in that area than I am. 16:33:27
11 Q. Certainly, so if I'm asking you 16:33:30
12 questions then I'll ask questions of you, and if 16:33:32
13 we're treading into territory that I should be 16:33:34
14 asking Mr. Barillaro or my colleague should be 16:33:37
15 asking Mr. Barillaro tomorrow, I think you'll let us 16:33:39
16 know, okay? 16:33:43
17 A. I'll let you know. 16:33:44
18 Q. Okay. Now I believe you said in 16:33:45
19 your presentation -- and this may be one example 16:33:48
20 that's for Mr. Barillaro, but you mention it in your 16:33:51
21 presentation so I thought I would give it a try. 16:33:56
22 Regarding the Environment Review 16:33:59
23 Tribunal proceeding and the fact that in the 16:34:02
24 schedule prepared by Windstream's experts, financial 16:34:06
25 close occurs right at the end of the Environment 16:34:08

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1 Q. I don't see that, sir -- I don't 16:31:26
2 see a likelihood assessment in your report, so 16:31:28
3 perhaps you can point us to it. 16:31:30
4 A. Just as an example, I'll take you 16:31:44
5 to Appendix 9 of our second report in which we 16:31:46
6 summarize the risks that we'd identified in our 16:31:54
7 first report. 16:31:56
8 And in that you'll see we had three 16:32:03
9 columns. We had the first column was the 16:32:05
10 likelihood, and then we identified the potential 16:32:07
11 impact on schedule and on cost. 16:32:10
12 Q. I see. So, in this appendix 16:32:14
13 you've set out likelihoods? 16:32:16
14 A. And that, if you went back into 16:32:19
15 our first report, you would find that at the end of 16:32:21
16 each risk, that analysis. 16:32:25
17 Q. Okay. We heard from Mr. Rose on 16:32:27
18 Friday about certain permitting issues, and I don't 16:32:33
19 think you'll disagree with me that there is a bit of 16:32:37
20 confusion about who was responsible for what. You 16:32:39
21 were pointing at each other a little bit. And so 16:32:43
22 just to be clear, I just want to confirm that the 16:32:46
23 responsibility for the accuracy of the information 16:32:51
24 contained in the rest of the two reports that 16:32:56
25 Mr. Rose did not testify to, is -- either lies with 16:32:58

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1 Review Tribunal proceeding, and we have -- I don't 16:34:13
2 know if you were here to hear the testimony of 16:34:16
3 Ms. Powell about that. But I think you said in your 16:34:19
4 experience, in your presentation I think you said in 16:34:24
5 your experience that this would be unusual; did 16:34:28
6 I have that right? 16:34:32
7 A. When I used the word "It was your 16:34:33
8 are our experience" that's collectively the team as 16:34:37
9 opposed to my personal experience. It is a question 16:34:41
10 probably better directed to Mr. Barillaro because he 16:34:44
11 has the direct experience on that. 16:34:47
12 Q. He has the direct -- 16:34:49
13 A. He has personal experience. 16:34:50
14 Q. He has personal experience with 16:34:52
15 the FIT program? 16:34:53
16 A. Not with the FIT program, no. 16:34:55
17 Q. Does he have experience with the 16:34:56
18 Environment Review Tribunal proceedings? 16:34:59
19 A. No. 16:35:00
20 Q. Does he have personal experience 16:35:00
21 with arranging financing of a FIT project in 16:35:01
22 Ontario? 16:35:04
23 A. No. 16:35:04
24 Q. Well, we'll ask him anyway. 16:35:05
25 Ms. Squires, in her 16:35:14

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1 examination-in-chief, asked you about shifting the 16:35:18
2 Environment Review Tribunal process by six months so 16:35:20
3 what would happen -- I think the question was: If it 16:35:24
4 took six months longer, what would that do the 16:35:27
5 schedule; right? 16:35:29
6 A. That's correct. 16:35:30
7 Q. And you answered, I understand you 16:35:31
8 answered it would just shift the rest of the 16:35:33
9 schedule back by six months? 16:35:36
10 A. I assessed the -- on a very 16:35:38
11 preliminary estimate or assessment, it could 16:35:41
12 actually be more than that because of the shift into 16:35:43
13 the next construction season. So, you potentially 16:35:46
14 lose the winter period as well. 16:35:51
15 Q. And we've already established 16:35:53
16 though, sir, that you don't have experience with the 16:35:54
17 FIT program or FIT contracts; right? 16:35:57
18 A. Sorry, I don't understand the 16:35:59
19 relevance of the link there, except insofar as I was 16:36:00
20 asked to comment on what would happen if we extended 16:36:03
21 it by six months. 16:36:07
22 Q. No, I understand, and you're not 16:36:09
23 being faulted for answering a question, of course. 16:36:10
24 I just want, for the clarity of the record, there's 16:36:14
25 no confusion that you don't have experience with the 16:36:18

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1 that as to whether a goodwill arrangement would be 16:37:44
2 acceptable to lenders. 16:37:51
3 Q. Sir, you just gave evidence about 16:37:58
4 the FIT program, the FIT contract. So do you 16:38:00
5 consider yourself to be qualified to give that 16:38:03
6 evidence? 16:38:05
7 A. I think I explained quite clearly 16:38:05
8 what my position was on that. 16:38:07
9 Q. Okay. We'll ask Mr. Barillaro for 16:38:13
10 his, as well. 16:38:16
11 Of course, you would have also heard 16:38:17
12 testimony from Mr. Cecchini of the OPA regarding 16:38:18
13 some of these matters, as well? 16:38:21
14 A. I did not hear that because I was 16:38:24
15 excluded from the room. 16:38:26
16 Q. Oh, that's correct. So 16:38:27
17 I understand from Mr. Rose then, that you were the 16:38:30
18 person responsible here, for the purpose of this 16:38:33
19 proceeding, for the comments in the URS report about 16:38:39
20 sediment disbursal and drinking water; right? 16:38:43
21 A. In terms of my role in this, yes, 16:38:49
22 in that I -- obviously, that information or that 16:38:53
23 input into our report was provided by Mr. Norton, as 16:38:55
24 we've discussed. 16:38:58
25 Q. But Mr. Norton is not here and you 16:38:59

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1 FIT contract or the FIT program; right? 16:36:20
2 A. No, I wasn't commenting on whether 16:36:22
3 or not there was a six-month extension out there. 16:36:24
4 Q. I understand. I understand. You 16:36:29
5 would have heard, I think, though, testimony on 16:36:31
6 Friday from your colleague, Mr. Rose, that projects 16:36:33
7 got built, of course, even though they were facing 16:36:36
8 permitting delays and that was because the OPA was 16:36:39
9 pragmatic in dealing with the issue of permitting 16:36:43
10 delays; do you recall that? 16:36:46
11 A. I heard that, yes. 16:36:47
12 Q. And so just to be clear on the 16:36:49
13 record, while what you are saying about the schedule 16:36:51
14 may be true, I put it to you that that doesn't 16:36:56
15 necessarily have implications under the contract and 16:37:00
16 you are not here testifying about what the 16:37:04
17 implications under the contract might be; right? 16:37:06
18 A. I think the issue there is that 16:37:10
19 the FIT contract is specific on its deadlines. 16:37:16
20 Should Ontario -- should they decide 16:37:20
21 to exhibit leniency and work collaboratively as was 16:37:25
22 suggested, currently that's speculation. And 16:37:31
23 I think one of the issues which might need to be 16:37:33
24 considered, and again you might ask Mr. Barillaro 16:37:39
25 his opinion on this is, how the lenders would view 16:37:41

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1 are the URS person here who is responsible for the 16:39:02
2 accuracy of that information; correct? 16:39:06
3 A. That's correct, yeah. 16:39:11
4 Q. Starting at paragraph 319 of your 16:39:18
5 second report, could you pull that up? 16:39:20
6 You purport to apply the proposed five 16:39:42
7 kilometre exclusion zone, assuming -- to this 16:39:45
8 project -- assuming that the exclusion zone applies 16:39:48
9 from uninhabited islands, uninhabited spits and 16:39:52
10 uninhabited peninsulas; do I have that right? 16:39:57
11 A. That's correct. I -- I -- yes, 16:40:05
12 that's correct. 16:40:07
13 Q. Are you aware or were you aware, 16:40:07
14 sir, when this was drafted, that no five kilometre 16:40:08
15 exclusion zone had, in fact, been adopted by the 16:40:12
16 Ontario Government? 16:40:16
17 A. I'm unaware that it had not been 16:40:17
18 confirmed, but I think we had evidence in both the 16:40:20
19 first submission from Windstream, and the second 16:40:23
20 submission that they were working to the basis that 16:40:26
21 a five kilometre exclusion zone would be applied. 16:40:29
22 Q. I believe you had evidence of 16:40:34
23 a discussion paper to that effect, but that no 16:40:36
24 decision had been made? 16:40:39
25 A. I agree, no decision had been 16:40:40

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1 made, but the layouts presented in both their 16:40:42
2 submissions showed a five-kilometre exclusion zone. 16:40:46
3 Q. I'm simply asking for your 16:40:50
4 confirmation, sir, that no decision had been made on 16:40:52
5 that topic, as to whether there would be 16:40:54
6 a five-kilometre exclusion zone? 16:40:57
7 A. That is my understanding. 16:41:00
8 Q. And certainly no decision had been 16:41:01
9 made as to the definition of that exclusion zone; 16:41:02
10 correct? 16:41:06
11 A. Sorry, you'll need to rephrase 16:41:08
12 that question. I don't understand. 16:41:09
13 Q. So, you understand there had been 16:41:12
14 a definition of the exclusion zone in terms of 16:41:14
15 what -- what the exclusion zone covered or how the 16:41:16
16 waters' edge would be defined? 16:41:19
17 A. My understanding was that the -- 16:41:23
18 call it the discussion paper -- I'm not sure exactly 16:41:26
19 what form it took, simply stated that five 16:41:29
20 kilometres from the shore. 16:41:32
21 Q. Right. And so you interpreted 16:41:35
22 that to mean five kilometres from uninhabited 16:41:36
23 island, uninhabited peninsulas, uninhabited spits; 16:41:40
24 correct? 16:41:45
25 A. That is the shore. 16:41:45

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1 saying, and I'm really not asking about what 16:42:59
2 Windstream did. I'm asking about what you did. So 16:43:01
3 do I have that right? You took the discussion 16:43:03
4 paper, you interpreted it and you applied it in this 16:43:07
5 manner; right? 16:43:11
6 MR. SPELLISCY: I think he's given 16:43:12
7 an answer to this question about three times. 16:43:13
8 MS. SEERS: Okay. 16:43:14
9 PRESIDENT: I think so. Please go 16:43:15
10 ahead. 16:43:16
11 BY MS. SEERS: 16:43:18
12 Q. So I take it, sir, that you are 16:43:18
13 not aware of any reason relating to the protection 16:43:20
14 of drinking water, why an offshore wind facility 16:43:24
15 should be sited more than five kilometres from 16:43:30
16 an uninhabited island that does not contain 16:43:33
17 a drinking water intake; correct? 16:43:36
18 A. That's correct, yeah, without 16:43:38
19 studies. 16:43:41
20 Q. Okay, but you are in the aware, 16:43:42
21 sitting here today, why there would be any reason 16:43:44
22 that would be the case? 16:43:47
23 A. No, although you could speculate 16:43:48
24 instances where that might be the case. 16:43:50
25 Q. Instances where there would be 16:43:52

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1 Q. That is your -- 16:41:48
2 A. That is our interpretation, which 16:41:48
3 I might add is consistent with the layout presented 16:41:50
4 by Windstream in their first -- in their original 16:41:55
5 claim. 16:41:58
6 Q. I understand, but I'm just trying 16:41:58
7 to understand what you did -- what you were aware of 16:42:00
8 and what you did when you put together this 16:42:02
9 paragraph or this section of your report, is you 16:42:05
10 interpreted -- I take it what you did is you took 16:42:08
11 a guideline or -- not even a guideline, a discussion 16:42:11
12 paper. It's a discussion paper that's Exhibit 16:42:14
13 R-0119, you have a citation there and you 16:42:18
14 interpreted that discussion paper and you applied it 16:42:23
15 in the way that you have; is that correct? 16:42:26
16 A. That's partly correct. I think 16:42:29
17 that was the -- if you like -- a background, but 16:42:30
18 what I also point out is that in their first 16:42:37
19 submission, Windstream had applied the same 16:42:40
20 exclusions zone that we adopted. 16:42:43
21 They subsequently changed it. Again, 16:42:47
22 I don't believe they had any further information 16:42:51
23 which differed from -- I'm not aware of any 16:42:53
24 different information. 16:42:56
25 Q. No, I understand what you're 16:42:58

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1 a requirement to have a setback from an uninhabited 16:43:54
2 island that does not create -- does not contain 16:44:00
3 a drinking water intake? 16:44:03
4 A. No, that would -- I wouldn't 16:44:05
5 anticipate that, no. 16:44:06
6 Q. Right. And I take it, sir, that 16:44:08
7 you are not aware of any reason relating to the 16:44:11
8 protection of drinking water, why an offshore wind 16:44:14
9 facility should be sited more than five kilometres 16:44:18
10 from an uninhabited spit or peninsula that does not 16:44:22
11 contain a drinking water intake; correct? 16:44:26
12 A. That's correct. I think it's more 16:44:29
13 or less exactly the same question. 16:44:30
14 Q. So there's no -- you're right 16:44:32
15 about that. So same question again, shoreline. 16:44:34
16 Shoreline that does not contain a drinking water 16:44:39
17 intake? 16:44:42
18 A. No. 16:44:45
19 Q. Okay. And if I were to suggest to 16:44:46
20 you, sir, that the only relevant set back to protect 16:44:49
21 drinking water would be one measured, not from the 16:44:53
22 shoreline or a spit or an island or a peninsula but 16:44:58
23 from a drinking water intake, would you agree with 16:45:02
24 that? 16:45:05
25 A. If that was the only purpose of 16:45:06

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1 the five-kilometre exclusion zone, I would. 16:45:07
2 Q. Right. 16:45:10
3 A. But my understanding -- 16:45:10
4 Q. Certainly. 16:45:14
5 A. -- is that's not the only reason 16:45:14
6 a five-kilometre exclusion zone was introduced. 16:45:17
7 Q. Okay, but if the purpose of the 16:45:19
8 five-kilometre exclusion zone was to protect 16:45:21
9 drinking water, you would agree there would be no 16:45:24
10 reason relating to drinking water to site it -- to 16:45:26
11 have the definition of the exclusion zone sited away 16:45:30
12 from those elements that we've mentioned? 16:45:33
13 A. If it was only drinking water, as 16:45:39
14 you've postulated, I would agree. 16:45:41
15 Q. Okay. At paragraph 320 you state 16:45:43
16 that MOECC -- that's the new -- we've been referring 16:45:54
17 to the Ministry of the Environment as the MOE, but 16:45:58
18 it's name has changed to include climate change as 16:45:59
19 well, so it is MOECC, but they're the same entity. 16:46:06
20 You state that MOECC's definition of 16:46:08
21 the five-kilometre setback distance is an absolute 16:46:10
22 distance from the shoreline, not a mean distance; 16:46:13
23 right? 16:46:15
24 A. That's what's stated. 16:46:19
25 Q. And you cite to MOE's discussion 16:46:20

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1 paper and to the second witness statement of 16:46:23
2 Ms. Doris Dumais; right? 16:46:25
3 A. That's correct. 16:46:31
4 Q. But I take it you won't disagree 16:46:32
5 with me that neither the discussion paper nor 16:46:34
6 Ms. Dumais' statement reflect an actual regulatory 16:46:38
7 requirement that's been adopted by the government of 16:46:43
8 Ontario; right? 16:46:47
9 A. I think we've discussed already 16:46:48
10 that that hasn't yet been formalized -- 16:46:49
11 Q. So that was -- pardon me? 16:46:52
12 A. That was the basis on which we 16:46:54
13 made our assessment. 16:46:55
14 Q. Right. So that's also the case in 16:46:56
15 your discussion of averaging here? 16:47:00
16 A. That's correct, but again, 16:47:02
17 I believe that the discussion paper is clear in that 16:47:03
18 it states from the shoreline; it doesn't talk about 16:47:06
19 averaging. 16:47:09
20 Q. All right. And we've already 16:47:10
21 established that you interpreted the discussion 16:47:11
22 paper. 16:47:13
23 At paragraph 279 of your report. You 16:47:15
24 assert that Baird's analysis regarding drinking 16:47:30
25 water "Could be misleading." Do you see that? It's 16:47:34

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1 in the second paragraph under 279? 16:47:40
2 A. Yes. 16:47:43
3 Q. And then on the next page, just to 16:47:43
4 summarize, my understanding of these paragraphs here 16:47:45
5 that you have, you criticize, as I understand it, 16:47:47
6 Baird's application of its model, and you note that 16:47:51
7 based on your calculations, three times more 16:47:54
8 sediment would be disbursed; is that correct? 16:47:57
9 A. I think what we state is that 16:48:02
10 given -- and as Baird have already said, as well, 16:48:06
11 that those were preliminary studies and needed to be 16:48:10
12 followed up with detailed studies. 16:48:13
13 Q. Right. 16:48:16
14 A. And taking into account that we 16:48:17
15 considered -- our calculations showed that over 16:48:20
16 three and a half times the volume of dredging was 16:48:24
17 needed, and, therefore, it's reasonable to assume 16:48:27
18 there will be a significant increase in the quantity 16:48:32
19 of sediment disbursed into the water as a result. 16:48:35
20 Therefore, further study is necessary. 16:48:40
21 Q. Further study is necessary? 16:48:43
22 A. I would point out that this is 16:48:44
23 a -- we've identified this is as a risk. 16:48:45
24 Q. Right. 16:48:48
25 A. We are not saying that it was 16:48:48

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1 certain. 16:48:49
2 Q. Okay. 16:48:50
3 A. But it is a risk that was present 16:48:51
4 until the further studies are done. 16:48:53
5 Q. Okay, and I take that you were -- 16:48:55
6 I think you were here on Friday, Mr. Clarke, when 16:48:57
7 Mr. Kolberg testified in his presentation that even 16:49:01
8 an increased level of sediment, even a three-fold or 16:49:06
9 even greater fold increase in the level of sediment 16:49:10
10 would not make a difference to his analysis; were 16:49:13
11 you here when he testified to that? 16:49:16
12 A. I heard them say that. He also -- 16:49:17
13 though, I note as I've just said, indicated that 16:49:21
14 further studies, detailed studies would be needed to 16:49:24
15 confirm that. 16:49:28
16 Q. Certainly. Certainly there is no 16:49:29
17 disagreement that this is information in this 16:49:30
18 proceeding is being prepared on the basis that no 16:49:36
19 further detailed studies were able to be conducted 16:49:38
20 because of the moratorium. 16:49:42
21 But I take it, though, that you don't 16:49:42
22 have any -- other than the fact that detailed 16:49:46
23 studies will be required in the future, based on 16:49:48
24 available information you don't have any reason to 16:49:51
25 disagree, I take it with Mr. Kolberg's analysis, 16:49:54

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1 sitting here today? 16:49:58
2 A. I don't have any reason to 16:50:00
3 disagree with it, but equally I'm not in a position 16:50:01
4 to -- collaborate -- corroborate or validate it, and 16:50:05
5 that's what the purpose of the additional studies 16:50:13
6 would be. 16:50:15
7 Q. Okay. 16:50:16
8 A. I think you would find -- and I'm 16:50:16
9 not sure exactly where we would find it, but we did 16:50:18
10 indicate that this was a low risk to the project, 16:50:22
11 with actually probably a low impact. 16:50:26
12 Q. So drinking water, then, is a low 16:50:29
13 risk to the project with a low impact. 16:50:30
14 I think we've already established that 16:50:40
15 you're not an expert in navigation on the 16:50:42
16 Great Lakes, but you're here, and your reports 16:50:44
17 discuss this topic so let's give it a try. 16:50:46
18 Your discussion of the shipping lane 16:50:50
19 starts at paragraph 309. 16:50:54
20 Pardon me, my colleague informs me 16:51:09
21 that in response to my last question, you nodded 16:51:10
22 your head instead of answering in the affirmative; 16:51:13
23 would you please clarify that for the record? 16:51:16
24 A. Sorry, can we just go back over 16:51:18
25 that? 16:51:19

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1 in support of that statement. I take it there isn't 16:52:18
2 one? 16:52:20
3 A. No, that's an opinion based on 16:52:20
4 experience which is cited elsewhere, for example, 16:52:23
5 the UK offshore wind industry and also the Cape Wind 16:52:30
6 project which was also cited. 16:52:36
7 Q. An opinion from whom, in the URS 16:52:39
8 team, sir, who has experience dealing with the 16:52:44
9 Seaway Development Corporation? 16:52:46
10 A. I would suggest that was a -- it 16:52:47
11 came from the Red Penguin personnel. 16:52:50
12 Q. Do they have experience dealing 16:52:53
13 with the St. Lawrence Seaway Development 16:52:55
14 Corporation, sir? 16:52:55
15 A. Not directly, no, to my knowledge. 16:52:58
16 Q. Indirectly? 16:53:01
17 A. Yes. 16:53:02
18 Q. They don't have any direct 16:53:02
19 experience dealing with that organization. And you 16:53:03
20 heard, I take it on Friday, that Mr. Kolberg has 16:53:05
21 substantial experience dealing with that 16:53:11
22 corporation? 16:53:12
23 A. I did not hear that, no. 16:53:13
24 MR. SPELLISCY: I think the record is 16:53:14
25 clear that -- I believe his testimony was that he 16:53:16

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1 MS. SEERS: Madam Court Reporter, can 16:51:20
2 you read back the last question? 16:51:20
3 COURT REPORTER: (Reading testimony): 16:51:21
4 "So drinking water, then, is a low 16:51:21
5 risk to the project with a low impact." 16:51:21
6 THE WITNESS: I'm sorry. Drinking 16:51:34
7 water we identified as a low risk, yes, but that was 16:51:34
8 our conclusion. 16:51:39
9 BY MS. SEERS: 16:51:40
10 Q. Okay. Thank you. And so now 16:51:40
11 we're at paragraph 309 of your report which 16:51:45
12 discusses the shipping lane risk. 16:51:49
13 And you state at paragraph 311: 16:51:55
14 "Local Maritime organizations such 16:51:59
15 as the St. Lawrence Seaway 16:52:01
16 Development Corporation are likely 16:52:04
17 to view this is a causing 16:52:05
18 unnecessary additional risk to 16:52:07
19 shipping, and, therefore, argue 16:52:09
20 for the greatest possible buffer 16:52:10
21 zone." 16:52:13
22 [As read] 16:52:14
23 Do you see that? 16:52:14
24 A. Yes. 16:52:15
25 Q. And I don't see a reference, sir, 16:52:16

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1 wasn't familiar with that organization. 16:53:17
2 BY MS. SEERS: 16:53:19
3 Q. I believe the record is that he 16:53:21
4 wasn't familiar with its corporate bylaws, but we 16:53:23
5 can check the transcript. 16:53:23
6 PRESIDENT: I was asking him about his 16:53:25
7 report and not the reports of others. 16:53:26
8 MS. SEERS: Certainly. 16:53:29
9 BY MS. SEERS 16:53:29
10 Q. You site at paragraph 312 you say: 16:53:29
11 "The Canadian navigation 16:53:46
12 authorities will review this 16:53:47
13 safety issue closely at the time 16:53:49
14 of permitting to minimize shipping 16:53:50
15 risks created by manmade hazards, 16:53:50
16 and since Canada has no previous 16:53:53
17 experience on this matter, it may 16:53:55
18 well consult agencies from other 16:53:57
19 companies where wind turbine 16:54:00
20 generators have been located 16:54:01
21 offshore." 16:54:02
22 [as read] 16:54:04
23 So I take it, sir, that statement has 16:54:05
24 not been made by anyone who had experience dealing 16:54:08
25 with Canadian navigation authorities; is that right? 16:54:11

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1 A. That's correct. But I would 16:54:14
2 suggest that that is a reasonably logical conclusion 16:54:15
3 or implication to draw from the situation. 16:54:18
4 Q. Okay. 16:54:20
5 A. Again, based on the experience 16:54:20
6 elsewhere such as the UK and Cape Wind. 16:54:24
7 Q. And you cite in the next paragraph 16:54:28
8 the UK guidelines and the world shipping council's 16:54:32
9 advocacy piece regarding buffers; right? 16:54:37
10 A. That's correct. 16:54:40
11 Q. And you heard, I take it, 16:54:41
12 Mr. Kolberg's evidence on Friday in response to 16:54:44
13 questions by Ms. Squires that in his view, anyway, 16:54:48
14 those documents are not particularly relevant to the 16:54:52
15 determination of the appropriate buffer for the 16:54:54
16 particular shipping channel in question. 16:54:57
17 I take it that you don't have any 16:55:00
18 better information to disagree with Mr. Kolberg's 16:55:03
19 opinion on that matter? 16:55:07
20 A. I don't have any better 16:55:09
21 information to agree or disagree with his opinion. 16:55:12
22 I think the conclusions he drew on Friday still 16:55:22
23 present some risk to this project. 16:55:25
24 Q. Okay. And then at paragraph 314 16:55:27
25 you make a statement that: 16:55:35

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1 paragraph 393, Your reports states there: 16:57:01
2 "The Great Lakes environment is 16:57:15
3 known to create conditions not 16:57:17
4 often found at sea with 16:57:18
5 a frequency and buildup of wave 16:57:20
6 peaks often resulting in confusing 16:57:22
7 seas with rogue waves frequently 16:57:25
8 recorded." 16:57:28
9 [As read] 16:57:28
10 Do you see that? 16:57:32
11 A. I see that. 16:57:33
12 Q. So I don't see a reference, sir, 16:57:34
13 in this section to establish what is known or not 16:57:37
14 known according to URS about the wave conditions in 16:57:40
15 the Great Lakes, or about any so-called rogue waves 16:57:42
16 being recorded at all, let alone frequently. 16:57:47
17 Do you have such a reference? 16:57:49
18 A. I accept that the reference behind 16:57:52
19 that was, it came from Mr. Sturgeon. 16:57:55
20 If you actually consulted with 16:58:02
21 a friend of his and I accept that that's only -- ITS 16:58:04
22 probably not admissible evidence, but a friend of 16:58:08
23 his who is a captain on the Great Lakes. 16:58:19
24 Q. So Mr. Sturgeon, who doesn't have 16:58:20
25 Great Lakes experience himself, consulted with 16:58:23

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1 "A wind farm located in the 16:55:37
2 Great Lakes may require a smaller 16:55:39
3 separation zone." 16:55:41
4 [As read] 16:55:44
5 And I take it you mean than one 16:55:44
6 located in the UK or on the open ocean; is that the 16:55:47
7 intent of that paragraph? 16:55:53
8 A. That's correct, yeah. 16:55:54
9 Q. And so this, I guess, sir, is 16:55:56
10 an example of a statement amongst many I've seen in 16:56:00
11 your report that does not reach a conclusion about 16:56:03
12 likelihoods based on available information. 16:56:07
13 So, can you clarify for us in your 16:56:09
14 opinion, sitting here today, whether the risk -- 16:56:13
15 whether you are saying -- whether URS is saying that 16:56:18
16 the risk posed by the shipping lane is high or low? 16:56:20
17 A. We would suggest that the risk, 16:56:25
18 certainly with the layout proposed in the second 16:56:29
19 Sgurr report, presents a high-risk still to the 16:56:34
20 project. 16:56:36
21 Q. Okay. 16:56:37
22 A. Because the turbines are located 16:56:38
23 directly adjacent to the shipping lane. There is no 16:56:41
24 buffer zone provided in that layout. 16:56:46
25 Q. Your report states in at 16:57:00

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1 a captain who he knew that was familiar with the 16:58:26
2 Great Lakes, but he didn't conduct wave modeling or 16:58:29
3 anything of the sort -- 16:58:33
4 A. That wouldn't have been Mr. 16:58:34
5 Sturgeon's role. 16:58:35
6 Q. And you heard, I take it from the 16:58:37
7 evidence from Mr. Kolberg on Friday, in connection 16:58:39
8 with this paragraph that it is, quote, "absolutely 16:58:41
9 false"? 16:58:47
10 A. I heard that. 16:58:48
11 Q. And I take it you don't have any 16:58:49
12 information sitting here today to contradict 16:58:50
13 Mr. Kolberg's evidence on that point? 16:58:54
14 A. No, I don't. 16:58:56
15 MS. SEERS: I think that pretty much 16:58:58
16 brings us to the end of today. It's five o'clock 16:58:59
17 and perhaps we could adjourn until tomorrow. 16:59:02
18 PRESIDENT: Thank you very much 16:59:05
19 Ms. Seers. 16:59:06
20 This is a bit inconvenient but 16:59:07
21 Mr. Clarke, I should ask you not to speak with 16:59:09
22 anybody about your testimony until we continue 16:59:12
23 tomorrow. We don't have a special room in the 16:59:15
24 Arbitration Place for you to spend your night. 16:59:17
25 THE WITNESS: I was worried I was 16:59:24

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1 going to be sleeping in that little room there. 16:59:25
2 PRESIDENT: Okay. So that's fine. 16:59:30
3 Thank you very much. 16:59:31
4 MR. TERRY: And Mr. President, just 16:59:32
5 one small procedural note. I just wanted to give 16:59:33
6 the Tribunal a heads-up that my friend and I are 16:59:37
7 trying to work out a basis for taking some of the 16:59:39
8 information that Mr. Cecchini provided you. 16:59:43
9 You will remember the session, I think 16:59:46
10 it was last Friday, and put it into a form that we 16:59:49
11 can use for the purpose of examining the experts in 16:59:51
12 a setting that won't require the use of restricted 16:59:54
13 access information. 16:59:59
14 So I just wanted to let you know that 17:00:00
15 because it may result potentially if we can't reach 17:00:02
16 an appropriate way to do it, just for me wanting to 17:00:05
17 get some public record information into the record. 17:00:09
18 So I give you that heads-up and hopefully we will be 17:00:11
19 able to resolve the issue. 17:00:14
20 PRESIDENT: So is this something that 17:00:16
21 might come up tomorrow or... 17:00:18
22 MR. TERRY: It might come up tomorrow. 17:00:20
23 It won't be necessary, I don't think to be used in 17:00:21
24 examining anyone tomorrow, but just potentially to 17:00:25
25 resolve the issue if it can't be resolved. 17:00:27

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1 immediately when you said this is on the basis of 17:01:31
2 the transcript. And it seems no, it's not. 17:01:33
3 So, anyway, we'll have our 17:01:35
4 discussions, and then we will revert to the Tribunal 17:01:37
5 once we've... 17:01:39
6 PRESIDENT: Very good. So we will 17:01:41
7 continue tomorrow morning at 9:00 o'clock with 17:01:43
8 Mr. Clarke. Thank you. 17:01:45
9 MS. SEERS: Yes. Thank you. 17:01:48
10 --- Whereupon the proceedings concluded 17:01:49
11 at 5:01 p m. 17:01:49
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1 PRESIDENT: As to whether there might 17:00:29
2 be any confidential information in that... 17:00:30
3 MR. TERRY: Yes, the idea essentially 17:00:34
4 is to try to sanitize the information and make it 17:00:36
5 useful, so it can be put to the damages experts 17:00:40
6 since they weren't able to be in the room when that 17:00:42
7 was used, and I'm fairly confident that can be done. 17:00:45
8 I know my friends have to check about 17:00:48
9 the appropriate OPA personnel to -- as to that being 17:00:50
10 done, but I just wanted to give that heads-up to the 17:00:54
11 Tribunal in case we have to discuss that. 17:00:58
12 PRESIDENT: It will be something that 17:01:01
13 is prepared on the basis of the transcript. 17:01:01
14 MR. TERRY: Yes. On the basis of the 17:01:04
15 transcript, informed by additional 17:01:07
16 publicly-available information, and that's 17:01:09
17 consistent with what our discussions had been when 17:01:12
18 this was dealt with last Friday, as well. 17:01:16
19 PRESIDENT: So, hopefully that can be 17:01:18
20 sorted out. 17:01:20
21 Mr. Neufeld? 17:01:20
22 MR. NEUFELD: We'll do our best to 17:01:23
23 sort something out. Now, just to mention, this is 17:01:24
24 highly preliminary as presented to us this morning, 17:01:26
25 that I think you probably put your finger on it 17:01:28

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