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**Ex-Ante Cost Review of Dudgeon Offshore Wind Farm
Transmission Assets**

**Report of Grant Thornton UK LLP
dated 14 December 2017**

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1 EXECUTIVE SUMMARY

- 1.1 This report relates to the Dudgeon Offshore Wind Farm (DOWL/the Wind Farm) which is owned by affiliates of Statoil ASA (Statoil) (35% shareholder), Abu Dhabi Future Energy Company PJSC (35% shareholder) and Statkraft AS (30% shareholder) (collectively the Developers). The development of the Wind Farm is being managed by Statoil.
- 1.2 Our review is based upon the Developers' cost template submitted to Ofgem dated 15 February 2017 and incorporates information and explanations provided regarding the costs in this version of the cost template, both in our site visit and in correspondence with the Developers, up to 5 April 2017.
- 1.3 The Wind Farm is situated 32km off the coast of Cromer in North Norfolk. It will consist of 67 6MW Wind Turbine Generators (WTGs) with a Transmission Entry Capacity (TEC) of 400MW¹, which will be connected to an offshore substation platform (OSP) located within the boundaries of the Wind Farm.
- 1.4 The Transmission Assets are under construction at present, and are expected to be fully operational by the end of 2017. The offshore substation and all other main elements are installed and the Wind Farm is currently undergoing testing, completion and commissioning work.
- 1.5 Grant Thornton UK LLP (Grant Thornton) has been instructed by The Office of Gas and Electricity Markets (Ofgem) to review the ex-ante cost assessments prepared by the Developers for the Transmission Assets of the Wind Farm (Ex-Ante Review).
- 1.6 The Ex-Ante Review has considered the accuracy, completeness and allocation of costs against the cost template prepared by the Developers for the Wind Farm Transmission Assets, based on supporting information and methodology provided by the Developers. Further detail on our work is set out in Sections 3 to 11 of this report. The purpose of a review at this stage is to:
- 1.6.1 determine if a developer cost estimate requires updating for the next stage of the transfer process, Enhanced Pre-Qualification (EPQ) and Invitation to Tender (ITT);
 - 1.6.2 aid technical evaluation by helping to identify areas where the cost information suggests that further technical review may be required to consider efficiency as part of determining the Indicative Transfer Value (ITV) for the ITT stage of the process; and

¹ The difference between installed and connected capacity is attributed to WTGT and array cable losses

1.6.3 assist determination of the ITV for ITT by reviewing accuracy, allocation and completeness of cost information.

1.7 The Developers' estimate of the cost of the Wind Farm Transmission Assets, included in the cost assessment template dated 15 February 2017 (the CAT), amounts to £[REDACTED] million (excluding interest during construction (IDC)). This represents a £[REDACTED] million decrease on the initial cost assessment by the Developers at 30 June 2016 as set out in version 1 of the cost template that projected the original cost to be £[REDACTED] million. The CAT presents the Developers' estimated costs of the Transmission Assets as follows:

Transmission Assets cost summary

	CAT Reference	Direct costs £	Developers' internal costs £	Contingency £	Total costs £	%
Project common costs	CR2	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]%
Offshore substation	CR3	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]%
Submarine cable supply and installation	CR4	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]%
Land cable supply and installation	CR5	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]%
Onshore substation connection	CR6	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]%
Other costs	CR9	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]%
Total capital costs		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]%
Interest during construction		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]%
		[REDACTED]	[REDACTED]	[REDACTED]	352,973,513	100.0%

SUMMARY OF FINDINGS

1.8 The Developers have provided us with supporting documentation and/or explanations for the majority of items² included within the cost template, which we have reviewed. We have found that all major items of capital expenditure for Transmission Assets have either been procured under contracts specific to the transmission business, or have been procured under contracts specific to the Wind Farm as a whole but have been allocated between the transmission and generation businesses on a reasonable basis.

² Being individual costs with a value in the CAT of more than £100,000

- 1.9 As part of our line-by-line review of the CAT, we have agreed the costs of the transmission business above £100,000 to supporting documentation. This included confirming costs in the CAT to underlying contracts between the Developers and the subcontractors, contract variation orders and to working schedules prepared by the Developers which set out how estimated costs within the CAT had been calculated. This also included gaining an understanding from the Developers about the determination of costs in the CAT, such as the approach to procurement of main items of expenditure, the allocation of shared costs between the transmission and generation businesses, and the treatment of costs incurred in foreign currencies.
- 1.10 In most cases, we were able to confirm that the costs included in the CAT were appropriately stated. However, we identified that some costs were incorrectly stated in the CAT, and as such, we propose adjustments for these costs at paragraph 1.28 below.
- 1.11 Furthermore, there were some costs where we were unable to get completely comfortable around their treatment in the CAT, and where this is the case, we recommend that Ofgem should discuss these areas with the Developers. These are set out below:

Allocation rates

- 1.12 The CAT included a number of costs common to the Wind Farm as a whole. Where costs are not directly attributable to either the transmission or generation (shared costs), the Developers have used two allocation rates; 50% and 20%. The rate of 50% is used for employees working on construction of both the transmission and generation businesses in relatively equal proportion, whilst the rate of 20% is used for employees who are contributing or performing supporting work on the Transmission Assets. The rates have been applied on a line-by-line basis using the judgment of the project management team.
- 1.13 The Developers have also applied the same allocation method used for resources costs in relation to other costs within the CAT, such as marine installation costs, studies and verifications and asset studies and other costs.

- 1.14 As set out in the table at paragraph 5.17 and summarised below, we have calculated an effective allocation rate for each category of shared costs where allocation rates have been applied:

Category	Ref	OFTO ³ %	Total OFTO costs included in CAT £	Shared costs		
				Total shared cost £	OFTO Effective Rate %	Total OFTO Cost £
Resources costs	5.9					
Other allocated costs						
Marine installation costs	7.36					
Studies and verifications	11.10					
Assets studies and other costs	11.10					
Total costs			46,667,245	67,232,134	38.5%	25,897,479

- 1.15 Whilst the effective allocation rates for other allocated costs is not dissimilar to the rates we have seen on other projects of around 25%, the effective allocation rate of 45.4% in relation to resources costs is significantly higher than what we have seen on other projects.
- 1.16 We have confirmed that the Developers have allocated shared costs in accordance with the two rates of 20% and 50% and have confirmed that the allocation calculations are correct. However, in light of the Developers' arbitrary basis for the allocation of resources costs, and the significant difference between the effective allocation rate and that seen on previous projects, we are unable to confirm whether the allocation rates are reasonable. As such, we recommend that Ofgem should discuss the allocation rates for resources costs with the Developers.

Resources costs

- 1.17 Following adjustments proposed by the Developers, the CAT includes approximately £ million relating to the time costs of Statoil and its affiliates employees spent in managing the project and in the construction of the Transmission Assets.
- 1.18 We have been provided with details of the hours spent by the employees on the Transmission Assets and have seen an extract of an internal guide prepared by the estimating team which sets out the hourly rate ranges used by the Developers on all projects. The Developers have confirmed that no profit element is included in the hourly rates.

³ Offshore Transmission Owner

- 1.19 However, we do not have the expertise to confirm whether the time spent by the Developers' own staff and the hourly rates used are economical compared to the market and therefore recommend that Ofgem's technical advisers should review both the time forecast to be spent by the Developers and the hourly rates used.

Contingencies

- 1.20 The CAT for the Transmission Assets includes a contingency provision amounting to £[REDACTED]. Ofgem has advised that the contingency amounts are to be removed from the ITV, and therefore an adjustment is proposed for the £[REDACTED]. As a result, we have not performed any detailed work on contingencies.

Foreign exchange

- 1.21 The CAT includes costs which are payable in foreign currencies (either Euros, Norwegian Krone, Danish Krone or Swedish Krone). The Developers have accounted for these costs by applying fixed exchange rates at the mid point of the investment, ie mid-2016. These rates are set out at paragraph 5.27 and we note that the rates used by the Developers are consistent with exchange rates during 2015 and 2016 when the majority of the costs were incurred.
- 1.22 We understand the Developers did not mitigate their exposure to foreign currencies by entering into foreign exchange hedging contracts until May 2016, by which point a large proportion ([REDACTED]%) of the cost of the Transmission Assets had already been incurred. As such, the impact on the Transmission Assets of the hedging contracts that were entered into is likely to be reduced.
- 1.23 The Developers have provided a schedule setting out the foreign currency impact on the CAT based upon the actual rates on the date that costs which had already been incurred were invoiced compared to the rates used in the CAT. This schedule demonstrates that foreign exchange gains of £[REDACTED] have been made on costs incurred up to 26 February 2017. As such, an adjustment to the CAT is proposed to decrease the value of the Transmission Assets in the CAT by this amount. However, as some of these exchange gains are based upon the cost allocation rates used, as described at paragraph 1.12 above, if the allocation rates were to be reduced, then there would be a corresponding reduction in the amount of some of these exchange gains.

Unsubstantiated costs

- 1.24 The CAT contains a number of estimates made by the Developers for expected variations on the key construction contracts. Whilst the Developers have provided information to support certain of these costs, there remain a number of individual variations with a value of over £100,000 for which insufficient information was available to substantiate the amount included in the CAT as follows:
- 1.24.1 Variations in relation to the Siemens contract for the electrical systems infrastructure totalling £[REDACTED] (paragraph 7.11);
- 1.24.2 Variations in relation to the ABB AB contract for the submarine export cable totalling £[REDACTED] (paragraph 8.8);
- 1.24.3 Variation in relation to the Visser & Smit Marine Contracting contract for the installation and burial of the subsea cable totalling £[REDACTED] (paragraph 8.17);
- 1.24.4 Variations in relation to the Carillon Utility Services Limited contract for the supply and installation of the onshore export cables totalling £[REDACTED] (paragraph 9.9); and
- 1.24.5 An estimate of potential purchase orders to finalise the work at Necton substation under the contract with Carillion totalling £[REDACTED] (paragraph 10.5).
- 1.25 We understand from our meeting with the Developers and Ofgem on 29 March 2017 that these unsubstantiated variations and estimates totalling £[REDACTED] will be discussed separately between the Developers and Ofgem.
- 1.26 Furthermore, the Developers have not provided sufficient documentation in order to support pre-investment decision costs above £100,000 (totalling £[REDACTED]), and as such, we are unable to substantiate these costs (paragraph 11.8).
- 1.27 We recommend that Ofgem should discuss these costs further with the Developers to determine whether these costs should be included within the Transmission Assets.

Conclusion

1.28 Following the Ex-Ante Review and the supporting information provided, based upon our line-by-line review of the CAT and discussions with the Developers and Ofgem, we have identified a number of items where the costs in the CAT were incorrect. As such, we consider that adjustments of £27,923,545 (9.0% of capital costs) are required to the CAT as summarised in the following table.

Impact of cost assessment

	Ref		£
Cost of Transmission Assets per CAT (excluding IDC and transaction costs)		1.7	310,655,154
Developers adjustments for revised estimates			
Increase in third party services costs	CR2	6.1	██████████
Increase in other marine installation costs	CR3	7.36	██████████
Decrease in onshore substation site preparation	CR6	10.3	██████████
Decrease in pre investment decision costs	CR9	11.2	██████████
Decrease in studies and verifications	CR9	11.11.1	██████████
Decrease in asset studies and other costs	CR9	11.11.2	██████████
Decrease in internal resources costs		5.8	██████████
Adjustments where the amount verified differs to the amount included in the CAT			
Decrease in offshore substation jacket original due to duplicated variations	CR3	7.21	██████████
Decrease in floatel during offshore hook-up and commissioning estimate	CR3	7.31	██████████
Decrease in rock installation estimate	CR3	7.34	██████████
Decrease in subsea cable supply contract	CR4	8.7	██████████
Decrease in subsea cable supply variations	CR4	8.9	██████████
Decrease in land cable variations	CR5	9.8	██████████
Increase in onshore substation site preparation	CR6	10.3	██████████
Decrease in asset studies and other costs	CR9	11.16	██████████
Reduction for foreign exchange gains in the CAT		5.26	██████████
Contingency provision		5.4	██████████
Total adjustments			(27,923,545)
Revised cost of Transmission Assets			282,731,609

Summary of cost movements and unsubstantiated costs

- 1.29 At **Appendix 1**, we set out a summary by CR category of the cost movements detailed in the table at paragraph 1.28 above, along with the unsubstantiated costs as detailed at paragraph 1.25 above.

Grant Thornton UK LLP

Grant Thornton UK LLP

London

14 December 2017

2 INTRODUCTION AND BACKGROUND

INSTRUCTIONS

- 2.1 Grant Thornton UK LLP has been instructed by Ofgem to prepare an Ex-Ante Review of the cost information and cost templates prepared for Ofgem by the Developers in relation to the DOWL Transmission Assets.
- 2.2 The review is to understand whether the costs provided in the Developers' cost template can be agreed to specific contracts or other supporting information, and whether appropriate metrics exist for cost allocation between transmission and generation. Our work involved tracing the amounts quoted in the cost assessment template to supporting contracts, schedules and other supporting information that indicate how costs have been derived. The review also involved a meeting with Statoil on behalf of the Developers in order to discuss the information provided, together with the basis for the cost allocation metrics used.
- 2.3 The purpose of a review at this stage is to:
 - 2.3.1 determine if a developer cost estimate requires updating for the next stage of the transfer process, EPQ and ITT;
 - 2.3.2 aid technical evaluation by helping to identify areas where the cost information suggests that further technical review may be required to consider efficiency as part of determining the ITV for the ITT stage of the process; and
 - 2.3.3 assist determination of ITV for ITT by reviewing accuracy, allocation and completeness of cost information.
- 2.4 The Ex-Ante Review is based upon the Developers' current estimates of the costs to be incurred in developing and constructing the Transmission Assets. Following construction of the Wind Farm, we expect to carry out a forensic review of the actual expenditure incurred by the transmission business (the Ex-Post Review).
- 2.5 Grant Thornton's review of the ex-ante cost information prepared by the Developers is limited to the scope as set out above and does not include detailed cost verification or any review of technical or legal issues.

- 2.6 Our review and this report is based upon the cost template submitted to Ofgem dated 15 February 2017 and incorporates information and explanations provided regarding the costs in this version of the cost template, both during our meeting with Statoil and in correspondence with the Developers' up to 5 April 2017.
- 2.7 If further information is produced and brought to our attention after service of this report, we reserve the right to revise our opinions as appropriate.
- 2.8 This work does not constitute an audit performed in accordance with Auditing Standards.
- 2.9 Except to the extent set out in this report, we have relied upon the documents and information provided to us as being accurate and genuine. To the extent that any statements we have relied upon are not established as accurate, it may be necessary to review our conclusions.
- 2.10 The report has been prepared using Microsoft Word and Microsoft Excel. The report may contain minor rounding adjustments due to the use of computers for preparing certain calculations.
- 2.11 No responsibility is accepted to anyone other than Ofgem.

RESTRICTION ON CIRCULATION

- 2.12 Grant Thornton does not accept or assume responsibility, duty of care, liability or other obligation to any third party other than Ofgem who, as a result, either directly or indirectly, of disclosure of the whole or any part of this report by Ofgem, receives, reads or otherwise obtains access to this document. Any party relying on this report does so entirely at their own risk.
- 2.13 In the preparation of our report, Grant Thornton has been provided with material by Ofgem (and by third parties at Ofgem's request) relating to third parties. We have relied upon warranties and representations provided by Ofgem that it is fully entitled to disclose such information to us for inclusion within our report, free of any third party rights or obligations, and that Ofgem will only permit circulation of this report in accordance with any rights to confidentiality on the part of any third party. Any objections to the inclusion of material should be addressed to Ofgem. Accordingly, Grant Thornton acknowledges no duty or obligation to any party in connection to the inclusion in the report of any material referring to any third party material or the accuracy of such material.

DISCLOSURES OF INTEREST

- 2.14 To the best of our knowledge, we have no connections with any of the parties or advisors involved in this matter, beyond normal commercial relationships, which would influence our report in any way.

FORMS OF REPORT

- 2.15 For your convenience, this report may have been made available to recipients in electronic as well as hard copy format. Multiple copies and versions of this report may therefore exist in different media and in the case of any discrepancy the final signed electronic copy should be regarded as definitive.

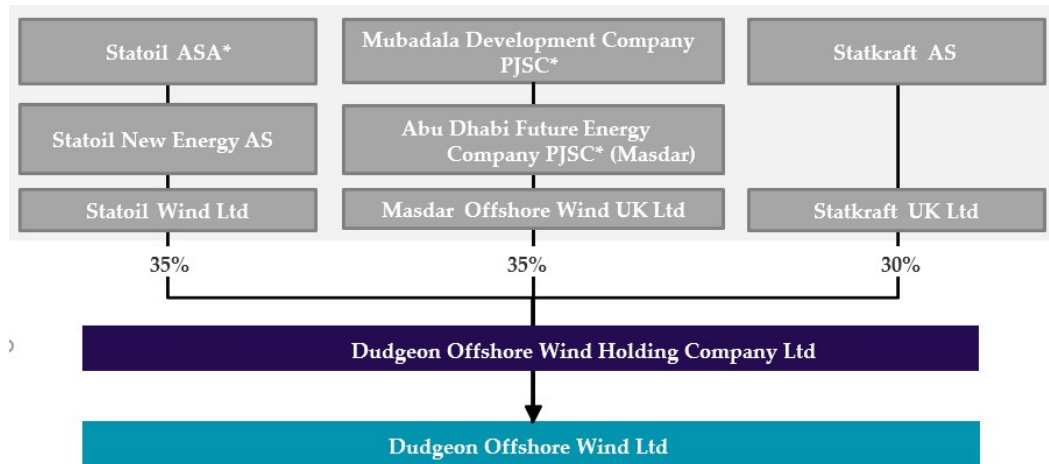
BACKGROUND TO THE WIND FARM

- 2.16 The Wind Farm is situated 32km off the coast of Cromer in North Norfolk. The onshore licensing body is National Grid Electricity Transmission plc (NGET) and the Wind Farm's Transmission Assets will connect to the 400kV NGET via a new onshore substation in Necton, Norfolk.
- 2.17 The Wind Farm will consist of 67 6MW Siemens WTGs with a TEC of 400MW, which will be connected to an OSP located within the boundaries of the Wind Farm.
- 2.18 The DOWL Transmission Assets are currently under construction and are due to be fully operational and commissioned by the end of 2017. They will include an offshore substation, two 42km subsea export cables, two 47km onshore export cables, an onshore substation and a Transmission Assets dedicated Supervisory Control and Data Acquisition (SCADA) system.
- 2.19 The DOWL Transmission Assets are expected to deliver an availability of 98%, taking into account both planned and unplanned maintenance.

OWNERSHIP STRUCTURE

- 2.20 The Wind Farm is owned by affiliates of Statoil, Abu Dhabi Future Energy Company PJSC and Statkraft AS.
- 2.21 Statoil is the Manager of DOWL and performs the general management for the company both in the construction and the operational phase and has the role as manager for the facility project during the construction phase.

2.22 The current ownership structure⁴ of the Wind Farm is set out below:



2.23 The ownership structure of these entities have been simplified as additional intermediate entities exist between the parent companies and the shareholder entities of DOWL.

⁴ Information Memorandum, Dudgeon, October 2016

3 THE DOWL EX-ANTE REVIEW

- 3.1 The main purpose of the Ex-Ante Review of the Wind Farm's Transmission Assets is to determine whether the costs as set out in the Developers' cost template for the Transmission Assets are appropriately stated to use in Ofgem's cost assessment and whether costs not directly attributable to either the Generation or Transmission Assets have been allocated between the two on a reasonable basis.
- 3.2 The starting point in our review of the cost information provided was the CAT dated 15 February 2017, which was based upon the Developers' estimates of the costs of the Transmission Assets at 30 June 2016.
- 3.3 Our review has considered confirmation that costs included in the CAT relate to contracts that either are for the Transmission Assets or are for the Wind Farm in a broader sense but have a reasonable basis for allocation between Transmission Assets and other elements of the Wind Farm. The basis of allocation differs depending upon:
- 3.3.1 whether the costs can be directly attributed to either the transmission or generation businesses (as in the case of the main capital contracts); or
 - 3.3.2 what is considered the main driver behind the relevant development or project management cost (this is usually capital cost or the degree of time/activity required in relation to different components of the Wind Farm development).
- 3.4 In each case where an allocation is involved we have considered if the proposed method and rate of allocation are appropriate for that particular cost. We have not at this stage sought to verify that any expenditure has been incurred by tracing to actual payments, as that will be done for selected contracts as part of the Ex-Post Review.

- 3.5 The cost assessment for the Transmission Assets of the Wind Farm as per the CAT is summarised below:

Transmission Assets cost summary

	CAT Reference	Direct costs £	Developers' internal costs £	Contingency £	Total costs £	%
Project common costs	CR2	████████	████████	████████	████████	██████%
Offshore substation	CR3	████████	████████	████████	████████	██████%
Submarine cable supply and installation	CR4	████████	████████	████████	████████	██████%
Land cable supply and installation	CR5	████████	████████	████████	████████	██████%
Onshore substation connection	CR6	████████	████████	████████	████████	██████%
Other costs	CR9	████████	████████	████████	████████	██████%
Total capital costs		████████	████████	████████	████████	██████%
Interest during construction		████████	████████	████████	████████	██████%
		████████	████████	████████	352,973,513	100.0%

- 3.6 Our findings in respect of the Ex-Ante Review are set out as follows:
- 3.6.1 The overview of the Developers' processes for accounting and procurement of the Wind Farm are set out in **Section 4**;
- 3.6.2 Our work in relation to costs and procurement matters which are common to the CAT as a whole are set out in **Section 5**;
- 3.6.3 Our work in relation to project common costs summarised on the CAT under CR2 is set out in **Section 6**;
- 3.6.4 Our work in relation to costs specific to each component of the Transmission Assets, summarised on the CAT under CR3, CR4, CR5, CR6 and CR9, is set out in **Sections 7 to Section 11**;
- 3.6.5 A summary of the issues identified as part of our review are set out in the executive summary (**Section 1**).

INFORMATION PROVIDED

- 3.7 We have relied upon the following information in reviewing the cost assessment for the Wind Farm:
- 3.7.1 Preliminary Information Memorandum dated September 2016 and Information Memorandum dated October 2016⁵;
 - 3.7.2 information contained in the Ofgem developer data room for the Wind Farm Project; and
 - 3.7.3 information and explanations provided to us by the Developers. This included a meeting with the Developers on 29 March 2017 to discuss the Transmission Assets and telephone calls and email correspondence with the Developers.

⁵ Actual dates not specified

4 DOWL PROCESSES

INTRODUCTION

- 4.1 In this section, we set out the processes which have been used by the Developers in relation to the procurement of and the accounting for the Wind Farm, and in particular, the Transmission Assets.
- 4.2 From our discussions with the Developers and our review of the cost information prepared by them in respect of the Transmission Assets, it is evident that there are systems in place which will help to ensure that the cost of the Wind Farm Transmission Assets represents value for money including:
- 4.2.1 competitive tendering;
 - 4.2.2 specific planning and budgeting tools, including building on experience obtained from similar projects; and
 - 4.2.3 controls over variation orders and large expenditure items.

DECISION MAKING PROCESSES

- 4.3 Decision making in the DOWL programme is based on project specific authorisation levels⁶. The different tasks for which authorisation is required, include:
- 4.3.1 creating requisitions;
 - 4.3.2 establishing specific strategies;
 - 4.3.3 preparing evaluations; and
 - 4.3.4 entering commitments ie to sign contracts.

⁶ Set out in the Statoil FR09 – Appendix B – Procurement authorisation limits and the Development and execution services agreement for Dudgeon Offshore Wind Farm

- 4.4 The following authorisation limits have been set at Statoil⁷ for the approval to enter commitments:

Dudgeon – Approval of Commitment

Agreement Award	
Options / Amendments	
Variation Orders	
Disputed Variation Orders (1)	
Cancellation (1)	
Termination (1)	

[Redacted content]

- 4.5 The following authorisation limits (as set out in the above table) are specific to the DOWL project:

4.5.1 [Redacted]
[Redacted]; and

4.5.2 [Redacted]
[Redacted].

ACCOUNTING AND BUDGETING PROCESS

- 4.6 Statoil, as project manager of the Wind Farm, provides the accounting team that supports the Wind Farm project and undertakes the budgeting process.
- 4.7 It uses the SAP accounting system for the Wind Farm. This is used to book invoiced costs, resources costs (timesheets) and travel costs.

⁷ PowerPoint presentation “Dudgeon – Project Procurement & Tendering Processes” presented at onsite visit on 29 March 2017

- 4.8 Statoil also uses the PIMS cost control system. This is a tailor made access database used to add up all of the costs based on fixed project exchange rates, for the following:
- 4.8.1 contract management;
 - 4.8.2 estimates;
 - 4.8.3 cost phasing and reporting;
 - 4.8.4 monthly reporting including currency impact;
 - 4.8.5 risk management; and
 - 4.8.6 contingency management.

- 4.9 The PIMS cost control system is used to calculate the expected final cost of a contract as follows:

Current contract value = current contract value + amendments + variation orders + adjustments

Contract forecast = current contract value + variation order requests + potential variation orders + growth + allowance

- 4.10 The estimates of the costs of the Transmission Assets included in the CAT are extracted directly from the PIMS system.

Invoice and purchase order approval

- 4.11 The Developers operates a rigid invoice and purchase order approval process, as set out in the Developers' governing document FR09 Procurement/Supply Chain Management.
- 4.12 For each contract, purchase orders are prepared for the costs expected to be incurred, along with a cash flow profile (using the PIMS cost control system). Following the posting of a purchase order to the SAP system, approval is required by both the 'first approver', ie the procurement manager, and then the 'second' approver, subject to the size and type of invoice.

Budget changes

- 4.13 The contract / package managers add potential variation orders into the PIMS cost control system whenever a change in cost is expected from the budgeted amount.

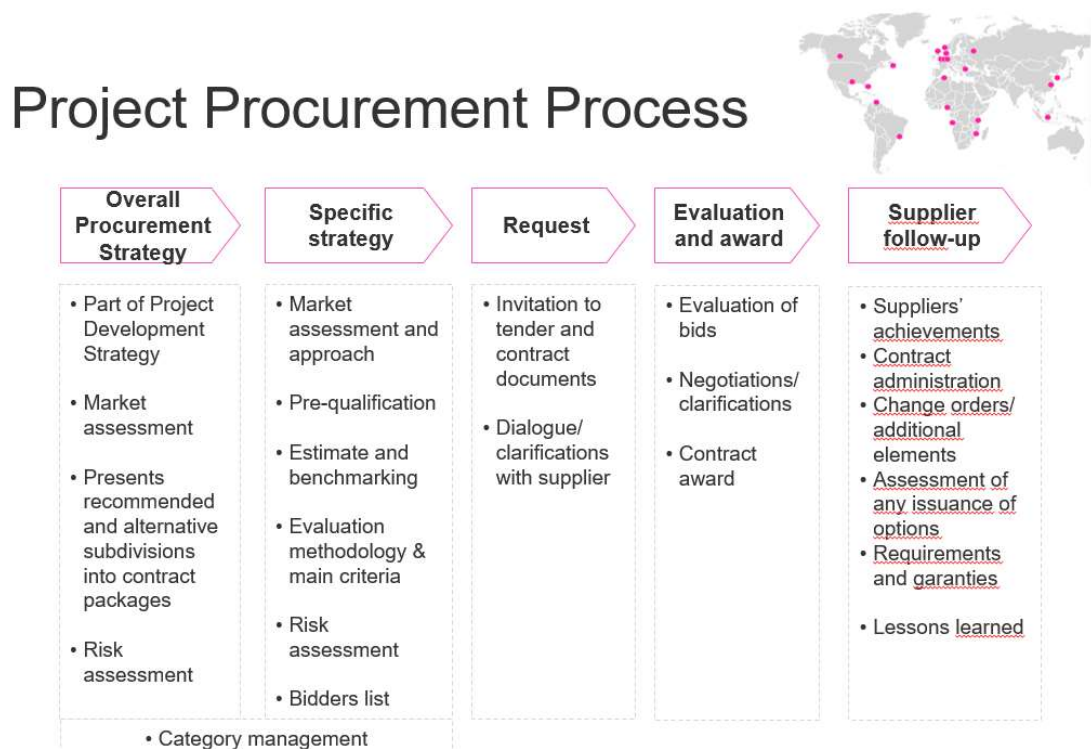
- 4.14 The review and approval of budget changes are performed on a monthly basis. Only the project manager and the PRO⁸ line organisation are authorised to approve contractual commitments, ie the budget responsibility lies with the project manager and the PRO line.

Controlling costs

- 4.15 Capital expenditure, budgets and forecasts are updated on a half yearly basis. Budgets are made up of actual costs incurred, committed costs and remaining expenditure. Remaining costs are inspected on a monthly basis, with the responsible manager being asked to provide rationale for those costs.

PROCUREMENT PROCESS

- 4.16 The project procurement process is set out in the below diagram⁹:



- 4.17 There is a dedicated contract team for each contract. Contract Managers are responsible for sourcing, tendering and managing a contract throughout the whole process.

⁸ PRO is a Statoil organisation responsible for the execution of all construction projects.

⁹ Statoil PowerPoint presentation 'Dudgeon – Project Procurement & Tendering Processes'

Multi-contract strategy

- 4.18 DOWL has adopted a multi-contract strategy as the most suitable, cost effective and efficient procurement and construction approach, with [REDACTED] primary contractors under [REDACTED] main contracts covering both the Generation and the Transmission Assets of the entire Dudgeon project. The construction contracts have all been negotiated and executed with market-leading providers, experienced in the offshore wind sector.
- 4.19 The multi-contract strategy allows the Developers to retain control and responsibility over all aspects of the DOWL project, including over the management of key interfaces between contractors and the resulting impact on the project and underlying budget.

Competitive tendering

- 4.20 One of the main tools used by the Developers in achieving value for money and highest compliance to requirements is the use of a competitive tendering process for the main elements of construction of the Wind Farm.
- 4.21 The majority of contracts were put out to tender, with the Developers inviting specialist companies in each area to tender for the work.
- 4.22 The final selection of preferred bidders was based upon an evaluation model, typically focussing on costs, terms and conditions, technical solutions, time schedules and QHSE (Quality, Health, Safety & Environment). This model is adapted for each contract on a case by case basis. This means that in respect of the detailed weighting that is given to certain criteria (for example, costs), adjustments made are dependent on the profile of the package up for tender and are based upon the experience from former tenders, executed contracts and the market situation.
- 4.23 The following limits have been set for the signature of contracts:

Signature of new contracts

- 4.23.1 < £[REDACTED] – Contract coordinator
- 4.23.2 < £[REDACTED] – Dudgeon Procurement manager

Signature of awarded contracts

- 4.23.3 < £[REDACTED] – CR minor contracts
- 4.23.4 < £[REDACTED] – CR major contracts (Nine major contracts for DOWL)
- 4.23.5 < £[REDACTED] - Dudgeon Procurement manager

COST ACCOUNTING AND ALLOCATION METHODOLOGY

- 4.24 All costs of the Wind Farm are posted to a Work Breakdown Structure (WBS) code in the accounting and cost control¹⁰ systems. Costs have been grouped by the cost activity to which they relate and also on whether they relate entirely to Transmission or Generation Assets, or to the Wind Farm as a whole (shared costs).
- 4.25 Shared costs are typically indirect costs which are for the general benefit of the overall project and include:
- 4.25.1 general project management and administration;
 - 4.25.2 project support functions eg procurement, cost control, health and safety, planner, contract coordinator and IT coordinator
 - 4.25.3 general consultants eg legal/environment, and consent;
 - 4.25.4 technical and engineering disciplines eg studies and surveys;
 - 4.25.5 marine coordination and vessel representatives;
 - 4.25.6 offices; and
 - 4.25.7 SCADA equipment benefitting both the Transmission and Generating Assets.
- 4.26 Further detail on cost allocations is set out in Section 5.

¹⁰ We note that WBS codes are used in the PIMS system however these are more at a more detailed level than in SAP. The PIMS system only the last letters and digits of the whole WBS code are used. As an example, for ESI contracts in PIMS a separate WBS code is specified for engineering, procurement, construction, electrical installations and commissioning however in SAP these costs are all booked under one common WBS code.

5 COSTS COMMON TO THE TRANSMISSION ASSETS AS A WHOLE

INTRODUCTION

- 5.1 Whilst the CAT has broken down the costs of the Transmission Assets into distinct areas, largely based upon the separate components which make up the Transmission Assets, there are certain costs and cost principles which are common to the Transmission Assets as a whole.
- 5.2 As such, we have summarised the work that we have undertaken in relation to these costs and cost principles in this section, and we cross refer to our findings in relation to such costs and cost principles in the later sections of this report.

CONTINGENCIES

- 5.3 The contingency provision included within the CAT is set out in the table below:

Contingencies		
	CAT Reference	Total per CAT £
Offshore substation	CR3	████████
Submarine cable	CR4	████████
Land cable	CR5	████████
Onshore substation	CR6	████████
Other	CR9	████████
		████████

- 5.4 Following its discussions with the Developers, Ofgem has advised that the contingency provisions should be removed from the ITV. As such, an adjustment for the full value of the contingency provisions in the CAT of £████████ has been included on the schedule of adjustments.
- 5.5 As a result, we have not performed any detailed work on contingencies.

INTEREST DURING CONSTRUCTION

- 5.6 The CAT includes the Developers' nominal pre-tax interest charge of 8.0% from March 2013 to the end of construction, estimated at March 2017, after which the project is expected to be generating power and thus beyond this time the Developers will cease to earn interest. The Developers' interest cost for the Transmission Assets included in the CAT amounts to £42,318,359, although we understand that the Developers' have subsequently provided updated calculations for IDC to Ofgem. For the avoidance of doubt, we have not verified the Developers' assessment of IDC, as this is outside the scope of our review.

DEVELOPERS' INTERNAL COSTS

Internal resources costs included in the CAT

- 5.7 The CAT includes £ [REDACTED] of the Developers' internal costs relating to time spent by Statoil employees on the Transmission Assets as follows:

Developers' internal costs

	CR3 £	CR4 £	CR5 £	CR6 £	CR9 £	Total £
Offshore topside	[REDACTED]	-	-	-	-	[REDACTED]
Offshore jacket	[REDACTED]	-	-	-	-	[REDACTED]
Offshore installation	[REDACTED]	-	-	-	-	[REDACTED]
Floatel jack-up	[REDACTED]	-	-	-	-	[REDACTED]
Rock installation	[REDACTED]	-	-	-	-	[REDACTED]
Personal transfer vessels	[REDACTED]	-	-	-	-	[REDACTED]
Other marine installation	[REDACTED]	-	-	-	-	[REDACTED]
Offshore cable procurement	-	[REDACTED]	[REDACTED]	-	-	[REDACTED]
Offshore cable installation	-	[REDACTED]	[REDACTED]	-	-	[REDACTED]
Site preparation	-	-	-	[REDACTED]	-	[REDACTED]
Onshore substation	-	-	-	[REDACTED]	-	[REDACTED]
Development	-	-	-	-	[REDACTED]	[REDACTED]
Asset team	-	-	-	-	[REDACTED]	[REDACTED]
Total	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Developers' current estimate of internal costs	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Difference	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

- 5.8 Since submitting the CAT, the Developers have revised their estimate of internal resources costs to £ [REDACTED]. As such, an adjustment to the CAT of £ [REDACTED] is proposed.

- 5.9 The table below summarises the capitalised internal costs and proposed adjustments in relation to each area of the Transmission Assets:

Developers' internal costs

	CAT Reference	Currently projected costs £	Adjustments £	Revised projected costs £
Offshore substation				
- Offshore topside		████████	████████	████████
- Offshore jacket - technical team		████████	████████	████████
- Floatel jack-up		████████	████████	████████
- Rock installation		████████	████████	████████
- Personal transfer vessels		████████	████████	████████
- Other marine installation cost		████████	████████	████████
	CR3	████████	████████	████████
Submarine cable				
- Offshore cable procurement		████████	████████	████████
- Offshore cable installation		████████	████████	████████
	CR4	████████	████████	████████
Land cable				
- Onshore cable procurement		████████	████████	████████
- Onshore cable installation		████████	████████	████████
	CR5	████████	████████	████████
Onshore substation				
- Site preparation at Necton		████████	████████	████████
- Onshore substation		████████	████████	████████
	CR6	████████	████████	████████
Other costs				
Development cost		████████	████████	████████
Asset team cost		████████	████████	████████
	CR9	████████	████████	████████
Total		████████	████████	████████

Verification Work

- 5.10 The Developers have provided detailed calculations of estimated hours by employee for each package within the Transmission Assets. The Developers have also provided estimated hours that employees who work on the Wind Farm as a whole will spend on the Transmission Assets.
- 5.11 These hours have been multiplied by hourly rates, and Transmission Assets allocation rates applied where appropriate, to derive total expected resources costs for the Transmission Assets.

- 5.12 We have agreed the underlying calculations of total resources costs. In response to our request for information to verify how the hourly rates have been determined, the Developers provided the hourly rates set out in an internal manual prepared in 2014. These rates have been slightly uplifted to reflect the 2016 cost position. The rates used in the internal resources costs appear similar to those included in the internal manual and therefore appear to be reasonable. In addition, the Developers confirmed that the rates do not include any element of profit.
- 5.13 We have recommend that Ofgem's technical advisers should review the breakdowns provided of the number of hours by activity and the hourly rates used in order to assess whether the number of hours spent and the hourly rates are efficiently incurred.

COST PRINCIPLES

Cost allocation

- 5.14 The Developers have used four allocation rates; 100%, 50%, 20% and 0%; to assign shared resource costs to the Transmission Assets. The rates are applied based upon the judgment of project managers as follows:
- 5.14.1 the rate of 100% is used for employees only working on Transmission Assets;
- 5.14.2 the rate of 50% is used for employees working on both Transmission and Generation Assets in relatively equal proportions;
- 5.14.3 the rate of 20% is used for employees who are contributing partly or performing supporting work on Transmission Assets; and
- 5.14.4 the rate of 0% is used for employees who do not work on Transmission Assets.
- 5.15 The Developers have applied these Transmission Assets rates to shared costs on an employee-by-employee basis.

5.16 In addition to resources costs, the Developers have also applied the same allocation methodology for other costs within the CAT, such as marine installation costs, studies and verifications, and asset studies and other costs.

5.17 We set out below the effective allocation rate for each category of cost:

Position	Category	Including 100% 'allocations'		Excluding 100% 'allocations'		Total OFTO Cost £
		OFTO %	Total OFTO Cost £	Total unallocated cost £	OFTO Effective Rate %	
Resources costs						
A01	Project management	█%	████████	████████	█%	████████
A02	Project control	█%	████████	████████	█%	████████
A03	Procurement	█%	████████	████████	█%	████████
A04	Project support	█%	████████	████████	█%	████████
B01	Technical and engineering disciplines	█%	████████	████████	█%	████████
B011	Foundation	█%	████████	████████	█%	████████
B012	ESI	█%	████████	████████	█%	████████
B013	WTG site representatives	█%	████████	████████	█%	████████
B014	HSE	█%	████████	████████	█%	████████
B015	Marine operations	█%	████████	████████	█%	████████
B016	Offshore completion	█%	████████	████████	█%	████████
B017	Marine coordination and vessel representatives	█%	████████	████████	█%	████████
B017	Vessel reps	█%	████████	████████	█%	████████
B018	Onshore completion	█%	████████	████████	█%	████████
C01	Asset	█%	████████	████████	█%	████████
Other allocated costs						
	Marine installation costs	█%	████████	████████	█%	████████
	Studies and verifications	█%	████████	████████	█%	████████
	Assets studies and other costs	█%	████████	████████	█%	████████
Total costs			46,667,245	67,232,134	38.5%	25,897,479

5.18 We note that the effective rate of allocation for the total shared costs allocated to the Transmission Assets on this basis (excluding '0%' and '100%' costs as essentially this are not an allocation) is 38.5%. This is largely a result of an effective allocation rate of 45.4% in relation to shared resources costs, which is significantly higher than we have seen on other projects. The rates in relation to the other allocated costs are consistent with those seen on other Wind Farm projects. Our conclusion in relation to cost allocations are set out in the executive summary.

5.19 In relation to the development costs which were incurred by the Wind Farm before the final investment decision (FID) was made, the Developers have used two allocation rates:

5.19.1 Costs incurred by the previous developers of the Wind Farm and included with the completion accounts on closing of that transaction in 2012 have been allocated to the Transmission Assets at a rate of 23%. This is based upon the estimated costs of the Transmission Assets at a percentage of total estimated costs for the entire Wind Farm.

5.19.2 Costs incurred by the Developers following the acquisition of the Wind Farm and prior to FID have been allocated to the Transmission Assets based upon the effective allocation rates used for equivalent resources categories.

Verification of allocation rates

5.20 We have confirmed that the Developers have applied allocated costs in accordance with the methodology set out at paragraphs 5.14 above, and have confirmed that the allocation calculations are correct. However, in light of the Developers' arbitrary basis for the allocation of resources costs (which also impacts upon the pre-FID development costs), and the significant difference between the effective allocation rate for resources costs to that seen on previous projects, we are unable to confirm whether the allocation rates used are reasonable. As such, we recommend that Ofgem should discuss allocation rates with the Developers.

FOREIGN EXCHANGE

Accounting for foreign exchange in the CAT

5.21 During the development of the Transmission Assets, costs are payable in foreign currencies; either Euros, Sterling (GBP), Danish Krone (DKK) or Swedish Krone (SEK). Furthermore, as Statoil is based in Norway, a number of project management costs, as well as a large proportion of resources costs and travel costs, are likely to be paid in the local currency of Norwegian Krone (NOK). As such, a significant proportion of the Transmission Assets costs are expected to be payable in currencies other than Sterling.

5.22 The Transmission Assets cost estimate applied in the CAT is based on the documented currency for each of the underlying contracts, for resources, travel, etc. The Developers have converted costs, where applicable, into Sterling based upon fixed project exchange rates set at the mid point of the total investment, ie mid 2016.

- 5.23 We understand the Developers did not hedge their exposure to foreign currencies (GBP:NOK, EUR:GBP and GBP:DKK) until May 2016 (with effect from June 2016), by which point a large proportion (█%) of the cost of the Transmission Assets had already been incurred. As such, the Wind Farm did not mitigate the risk of foreign exchange losses on a large proportion of its costs, and the impact on the Transmission Assets of the hedging contracts which the Developers' entered into is likely to be lower than if the exposure had been hedged around the time of FID.
- 5.24 However, the Developers have provided a separate schedule of the foreign currency impact on the actual costs incurred to date based upon the difference between the project rates used in the CAT and the actual exchange rates¹¹ on the date that invoiced costs are booked onto the SAP system. This calculation includes costs incurred up to 26 February 2017, and will be updated to reflect actual payments at the time of the ex-post review.
- 5.25 The schedule demonstrates that foreign exchange gains of £█ have been made on the project to date as follows:

	Foreign exchange gains £
Common costs	█
Offshore substation	█
Submarine cable	█
Land cable	█
Onshore substation	█
Other costs	█
Total	█

- 5.26 As such, the Developers have identified that an adjustment to the CAT to reduce the value of the Transmission Assets of £█ is required. However, we would highlight that some of these exchange gains are based upon the current cost allocation rates used. As such, if the allocation rates were to be reduced, then there would be a corresponding reduction in some of these exchange gains.

¹¹ The source of the exchange rate being the Norwegian central bank, Norges Bank.

Rates used

- 5.27 As explained above, the Developers have used fixed project exchange rates to translate amounts payable in foreign currencies into Sterling. The fixed foreign exchange rates used in the CAT are as follows:

	Rate
GBP / SEK	■
GBP / DKK	■
GBP / USD	■
GBP / EUR	■
GBP / NOK	■

- 5.28 Whilst we have not been provided with supporting documentation to show how the Developers established the fixed project rates (at the midpoint of the investment), we have compared the rates used to exchange rates during 2015 and 2016 when the bulk of the project expenditure was incurred and consider these consistent with the rates used by the Developers.
- 5.29 Whilst the fluctuation in exchange rates following Brexit would be expected to result in a higher cost of construction, as the Developers entered into foreign currency hedges prior to Brexit this is likely to have been mitigated.

APPLICATION OF OVERRIDING GLOBAL DISCOUNTS

- 5.30 The Developers have confirmed that no global discounts have been obtained in the course of the project.

RELATED PARTY TRANSACTIONS

- 5.31 The Developers have confirmed that there have been no related party transactions, other than project management and personnel.

BOUNDARIES USED FOR PURPOSES OF COST ALLOCATION

5.32 The Information Memorandum confirms the boundary points of the Transmission Assets proposed by the Developers, as follows:

- offshore – the grid entry point will be where the Pfisterer connection connects the 33kV bus ducts (owned by the OFTO) to the 33kV GIS switchgear (owned by the Developers) on the DOWL offshore 132/33 kV substation. The male part of the Pfisterer connection belonging to the OFTO and the female part to the Developers
- onshore – the transmission interface point is located at the busbar clamp on the busbar side of the busbar isolators on the OFTO onshore substation transformer circuit at the new Necton 400 kV substation.

5.33 The details that we have seen reflect costs between these two boundary points.

6 PROJECT COMMON COSTS

THIRD PARTY SERVICES

6.1 The CAT includes third party services costs of £775,499. However, since submitting the CAT, the Developers revised the estimate of costs for studies increasing third party services costs to £1,231,989, ie an increase of £456,490. As such, an adjustment is proposed for this amount.

6.2 Included within the third party services costs of £1,231,989 are the following:

6.2.1

[REDACTED]

[REDACTED]; and

6.2.2

[REDACTED]

[REDACTED].

Cost allocation rates

6.3 The revised CAT amount of £1,231,989 relates to the Transmission Assets element of committed purchase orders. These have been reviewed on a line by line basis, applying the Transmission Assets rates, as described in paragraph 5.14.

6.4 Third party services costs are fully attributable (100%) to the transmission assets.

Verification

6.5 A breakdown of the committed purchase orders have been reviewed and amounts above £100,000 (totalling £1,177,069¹²) have been agreed to supporting documentation.

¹² Total costs of £1,231,989 include one purchase order below £100,000 for £54,920.

7.3 Following initial negotiations and clarifications, the tender from the [REDACTED] [REDACTED] was deemed not to comply with technical requirements. Furthermore, [REDACTED] was deemed not to have delivered a valid tender as it was unwilling to combine contracts and suggested sourcing topside and jacket separately. As such, two contractors ([REDACTED] and STDL) were shortlisted, with the net present value of the normalised tender price for Alstom being £[REDACTED], compared to £[REDACTED] for STDL.

7.4 The basis for recommendation was based upon an evaluation model focusing on costs, terms and conditions, technical solution, time schedule and QHSE, with the weighting for this tender being [REDACTED].

7.5 Weighting criteria used for technical evaluation were:

- Schedule [REDACTED]%
- Technical safety [REDACTED]%
- System responsibility [REDACTED]%
- Electrical [REDACTED]%
- Structural layout offshore topside [REDACTED]%
- Jacket [REDACTED]%
- Civil layout onshore [REDACTED]%
- Automation telecom [REDACTED]%
- IT LCI DM [REDACTED]%
- HSE [REDACTED]%
- QRM [REDACTED]%
- Completion [REDACTED]%

7.6 A recommendation was made to award the work to STDL after it achieved an overall weighting of [REDACTED]¹³, compared to [REDACTED]¹⁴ for [REDACTED].

¹³ Being a commercial score of [REDACTED] and a technical score of [REDACTED]

¹⁴ Being a commercial score of [REDACTED] and a technical score of [REDACTED]

7.7 Subsequently, the Developers entered into a contract with STDL for the supply of the Electrical System Infrastructure for the Wind Farm (the STDL contract), for the amount of £ [REDACTED] which we have agreed to the underlying contract, stated in both GBP and EUR, as follows:

Item	WBS	Description	Multi currency Provisional sum £	Multi currency Lump Sum £	Multi currency Lump Sum €	Total per Contract £	OFTO Cost ([REDACTED]) £
3.1	11D02A	Common cost	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
3.2	11D02B	Onshore substation	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
3.3	11D02C	Offshore substation topside	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
3.4	11D02D	Substation jacket	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
3.5	11D02E	WTG switchgear and patch panel	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Contract Price			[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]

7.8 Contract costs have been allocated to the Transmission Assets on a line-by-line basis, save for common contract costs that have been allocated at a rate of [REDACTED]%. The Developers have calculated the Transmission Assets percentage of [REDACTED]% by dividing the directly attributable Transmission Asset costs by the total directly attributable contract costs.

Contract variations

7.9 Total variations in relation to the STDL contract amount to £ [REDACTED]¹⁵ of which £ [REDACTED] ([REDACTED]%) relate to the Transmission Assets and are included in the CAT as follows:

Item	WBS	Description	Cost 100% OFTO (a) £	Cost partly ([REDACTED]%) OFTO (b) £	Total OFTO a + (b x [REDACTED]%) £	Allocation of common cost %	TOTAL Cost OFTO £
3.1	11D02A	Sum common cost	[REDACTED]	[REDACTED]	[REDACTED]	n/a	[REDACTED]
3.2	11D02B	Sum onshore substation	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]%	[REDACTED] ¹⁶
3.3	11D02C	Sum offshore substation	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]%	[REDACTED] ¹⁷
3.4	11D02D	Sum substation jacket	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]%	[REDACTED] ¹⁸
3.5	11D02E	Sum WTG switchgear and patch panel	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Contract Price			[REDACTED]	[REDACTED]	[REDACTED]		[REDACTED]

15 [REDACTED]
 16 [REDACTED]
 17 [REDACTED]
 18 [REDACTED]

- 7.10 As shown in the table above, the Transmission Assets element of the common costs (totalling £[REDACTED]) have been allocated across the cost categories for the onshore substation, offshore substation and substation jacket. Costs in respect of WTG Switchgear and Patch Panel do not relate to the Transmission Assets related and therefore are not included in the CAT.

Verification of variations

- 7.11 We requested supporting documentation for all variations above £100,000, and have been able to verify £[REDACTED] ([REDACTED]%) of the total variations of £[REDACTED]. The aggregate of individual variations below £100,000 is £[REDACTED]. We have not been able to substantiate the remaining variations of £[REDACTED] as the Developers did not provide adequate information.
- 7.12 We have recommended that Ofgem should discuss the unsubstantiated variations with the Developers.

Inclusion of costs in the CAT

- 7.13 Included within the CAT are costs totalling £[REDACTED] in respect of the STDL contract. These are as follows:

	CAT reference	Ref	£
Preliminaries and system engineering	CR3	7.17	[REDACTED]
Offshore substation and platform - original	CR3	7.18	[REDACTED]
Offshore substation and platform - variations	CR3	7.19	[REDACTED]
Offshore substation jacket - original	CR3	7.21	[REDACTED]
Offshore substation jacket - variations	CR3	7.22	[REDACTED]
Preliminaries and system engineering	CR6	7.17	[REDACTED]
Onshore substation – original	CR6	7.23	[REDACTED]
Onshore substation – variations	CR6	7.24	[REDACTED]
Total			[REDACTED]

- 7.14 We note that the total contract value of £[REDACTED] (paragraph 7.7 above) and variations totalling £[REDACTED] (paragraph 7.9 above) give rise to total STDL costs of £[REDACTED], ie £[REDACTED] less than the amount included in the CAT. This difference, relating to the offshore substation jacket, is discussed at paragraph 7.21 below.
- 7.15 We summarise below each of the STDL costs (as set out in the table above), and cross refer where relevant in Section 10 of this report.

Preliminaries and system engineering

- 7.16 We have agreed common costs, relating to preliminaries and system engineering, of £ [REDACTED] to the underlying contract, £ [REDACTED] ([REDACTED]%) of which are related to the Transmission Assets. The Developers have allocated these common costs between the offshore substation, substation jacket and onshore substation, as set out in the table below.
- 7.17 There have been variations totalling £ [REDACTED], leading to total preliminaries and system engineering costs include in the CAT of £ [REDACTED]¹⁹. As set out in the below table, £ [REDACTED] of these costs have been included in CR3 and £ [REDACTED] have been included in CR6.

	Allocation of common cost £	OFTO Common Costs £	Variations £	Total £	Split in CAT £	CAT reference £
Onshore substation	[REDACTED]%	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	CR6
Offshore substation topside	[REDACTED]%	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	
Substation jacket	[REDACTED]%	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	CR3
Common Cost		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	

Offshore substation and platform

- 7.18 The contract costs in respect of offshore substation topside are £ [REDACTED], which we have agreed to the underlying contract. The Developers have carried out an exercise on a line-by-line basis to assess the costs related to the Transmission Assets. We have reviewed this line-by-line breakdown to confirm that appropriate allocations between transmission and generation have been made. This shows that £ [REDACTED] of the total relates to the Transmission Assets and has been included in the CAT.
- 7.19 There were further variations of £ [REDACTED], leading to a total amount in the CAT in relation to the offshore substation and platform of £ [REDACTED].

¹⁹ [REDACTED]

Offshore substation jacket

- 7.20 The contract costs in respect of substation jacket are £ [REDACTED], which we have agreed to the underlying contract. The Developers have carried out an exercise on a line-by-line basis to assess the costs related to the Transmission Assets and allocated costs at either 100% or 14.29%. The allocation rate of 14.29% has been used for the costs of J Tubes of which only 2 out of 14²⁰ relate to the Transmission Assets.
- 7.21 We have reviewed the line-by-line breakdown of the costs related to the Transmission Assets which amount to £ [REDACTED] to confirm that costs were appropriately categorised. The costs relating to the substation jacket included within the CAT is £ [REDACTED]. The Developers have confirmed that the difference of £ [REDACTED] is an error due to the variations (as per below paragraph) being included in the CAT twice. As such, an adjustment to the CAT is proposed for the difference of £ [REDACTED].
- 7.22 There were further variations to the contract of £ [REDACTED], leading to a total amount in the CAT in relation to the offshore substation jacket of £ [REDACTED] (£ [REDACTED] after adjusting for the double counting of the variations as noted in the paragraph above).

Onshore substation

- 7.23 We have agreed costs in respect of the onshore substation amounting to £ [REDACTED] to the underlying contract.
- 7.24 There were further variations to the contract of £ [REDACTED], leading to a total amount in the CAT in relation to the onshore substation of £ [REDACTED].

SUBSTATION TOPSIDE AND JACKET INSTALLATION

- 7.25 The Developers entered into contracts with SHL Offshore Contractors B.V. (SHL) for the provision of installation of foundations and substructure for the whole Wind Farm contract totalling € [REDACTED] (£ [REDACTED]), which we have agreed to the underlying contract, of which € [REDACTED] (£ [REDACTED]) of costs relate directly to the Transmission Assets²¹.

²⁰ 2/14 = 14.29%

²¹ Direct cost allocation of the management, engineering, transport and installation costs for the substation

7.26 Furthermore, the Developers paid additional pre-award fee payment to SHL upon signing the contract to secure the vessel of € [REDACTED] (£ [REDACTED]), of which € [REDACTED] (£ [REDACTED]) has been allocated to the Transmission Assets leading to total costs of € [REDACTED] (£ [REDACTED]). The allocation of the pre-award fee was based upon the proportion of costs directly attributable to the Transmission Assets.

7.27 There were subsequent variations to the contract amounting to £ [REDACTED]. We have agreed all variations above £100,000, totalling £ [REDACTED] ([REDACTED]%) to the underlying variation orders. The variation orders are in Euros and have been translated to GBP using the exchange rate of [REDACTED] as stated in the CAT.

OTHER COSTS

7.28 The CAT includes the following other costs:

Other costs	Ref	Currently projected costs £
Floatel during offshore hook-up and commissioning	7.30	[REDACTED]
Rock installation around jacket's legs/buckets	7.32	[REDACTED]
Personnel transfer vessels	7.35	[REDACTED]
Other marine installation costs	7.36	[REDACTED]
Total		[REDACTED]

Floatel during offshore hook-up and commissioning

7.29 The Developers entered into a contract with A2SEA for Vessel Time Charter Party costs of € [REDACTED] (£ [REDACTED]), which we have agreed to the underlying contract.

7.30 The Developers estimated an additional amount of £ [REDACTED] for floatel costs from Norside Supply II AS for commissioning personnel for topside works, being approximately 10% of estimated contract value. This was added to Transmission Assets cost, leading to total costs included in the CAT of £ [REDACTED].

7.31 The Developers have since updated the estimate of additional costs to £ [REDACTED], ie a reduction of £ [REDACTED], which we have agreed to the underlying calculations. As such, an adjustment is proposed to decrease the amount stated in the CAT by £ [REDACTED].

Rock installation

7.32 The Developers entered into an agreement with Boskalis Offshore AS – Tideway JV for rock installation. The contract amount is € [REDACTED] (£ [REDACTED]) and NOK [REDACTED] (£ [REDACTED]) amounting to £ [REDACTED], using the exchange rates in the CAT.

- 7.33 The Developers have explained that the amount included in the CAT of £[REDACTED] was based on Baseline Estimate 4 from August 2016. Since the work for rock installation has been performed and invoiced, it is appropriate to update the CAT to reflect the actual cost incurred of £[REDACTED].
- 7.34 An adjustment has been proposed to decrease the amount included in the CAT for rock installation by the difference of £[REDACTED].

Personnel transfer vessels

- 7.35 The CAT includes personnel transfer vessels (PTV) amounting to £[REDACTED]²². This is calculated based on the estimate for two PTVs to be used for the Transmission Assets for a period of 150 days from 1 September 2016. We have agreed the day rate for Vessel One of £[REDACTED] and the day rate for Vessel Two of £[REDACTED] to the underlying contract. An additional [REDACTED]% has been added to the day rate for fuel costs.

Other marine installation cost

- 7.36 The Developers have included in the CAT estimated costs of £[REDACTED] in relation to other marine costs. The Developers have since updated their estimated costs to £[REDACTED], and therefore have proposed an adjustment to increase the costs included in the CAT by the difference of £[REDACTED].
- 7.37 The Developers have provided us with a breakdown of the estimated costs, and we have agreed costs above £100,000, amounting to £[REDACTED] ([REDACTED]%) to the underlying purchase orders²³. The Developers have applied the allocation rates stated in paragraph 5.14 on a line by line basis to each purchase order to arrive at the Transmission Assets amount of £[REDACTED] (with an effective allocation rate for shared costs of [REDACTED]% as set out in the table at paragraph 5.17).

²² [REDACTED]

²³ Some differences between the costs included in the CAT and the purchase orders were identified however, the Developers have provided explanations that appear reasonable.

8 SUBMARINE CABLE SUPPLY AND INSTALLATION

8.1 The submarine cable supply and installation costs are comprised as follows:

CR4 – SUBMARINE CABLE SUPPLY AND INSTALLATION COSTS

Contract overview	Ref	Currently projected costs £
Subsea cable supply		
ABB AB - Subsea cable supply – original	8.7	██████████
ABB AB - Subsea cable supply – variations	8.8	██████████
Subsea Cable Installation		
VBMS - Subsea cable installation – original	8.16	██████████
VBMS - Subsea cable installation – variations	8.17	██████████
Developers' internal costs		
Developers' internal costs	5.7	██████████
Contingencies	5.3	██████████
Total		██████████

SUBSEA CABLE SUPPLY

8.2 Competitive tendering was used for the supply of the submarine export cable. For the supply, five companies applied for pre-qualification, all meeting the criteria, leading to five submitted tenders:

- ██████████ ██████████
- ██████████ ██████████
- ██████████ ██████████
- ██████████ ██████████
- ██████████ ██████████

8.3 The basis for recommendation was based upon an evaluation model focusing on costs, terms and conditions, technical solution, time schedule and QHSE, with the weighting for this tender being ██████% commercial (price), ██████% technical solution.

8.4 Weighting criteria used for technical evaluation were:

- Capacity and capability [REDACTED]%
- Technical quality [REDACTED]%
- HSE [REDACTED]%
- Quality Risk Management [REDACTED]%

8.5 [REDACTED]
[REDACTED].

8.6 Subsequently, the Developers entered into a contract with ABB AB to engineer, design, procure and construct the submarine export cable. The contract is stated in US Dollars (USD) and Swedish Krona (SEK) as follows:

ABB Contract Overview	USD	SEK
Preliminaries	[REDACTED]	[REDACTED]
Engineering	[REDACTED]	[REDACTED]
Procurement	[REDACTED]	[REDACTED]
Fabrication	[REDACTED]	[REDACTED]
Installation and commissioning of DTS and DRS/RTTR systems	[REDACTED]	[REDACTED]
Total	[REDACTED]	[REDACTED]

8.7 We have agreed the total cost in foreign currency to the underlying contract. Using the exchange rates stated in the CAT, this translates to £[REDACTED], being £[REDACTED] less than the CAT amount of £[REDACTED]. The Developers have noted that this is an error, with the correct price showing in the PIMS system, and therefore an adjustment to the CAT of £[REDACTED] is proposed.

8.8 There were subsequent variations to the cable supply contract totalling (£[REDACTED]), ie a decrease to the original contract cost. We requested supporting documentation for variations above £100,000. Individual variations below £100,000 amount to £[REDACTED]. We have agreed variations of (£[REDACTED]) to supporting documentation leading to an approved amount of (£[REDACTED]²⁴). The unsubstantiated variation orders amount to £[REDACTED]. We understand that Ofgem will discuss these separately with the Developers.

24 [REDACTED]

- 8.9 The Developers have confirmed an additional decrease of £[REDACTED] is required to the estimated costs due to an error in the calculations leading to total costs (after both adjustments) for the submarine cable supply of £[REDACTED]²⁵.

SUBSEA CABLE INSTALLATION

- 8.10 Competitive tendering was used for the installation of the submarine and array cables. Seven companies applied for pre-qualification, of which three did not meet pre-qualification requirements, leading to four submitted tenders:

- [REDACTED] [REDACTED]
- [REDACTED] [REDACTED]
- [REDACTED] [REDACTED]
- [REDACTED] [REDACTED]

- 8.11 The basis for recommendation was based upon an evaluation model focusing on costs, terms and conditions, technical solution, time schedule and QHSE, with the weighting for this tender being [REDACTED]% price and [REDACTED]% technical solution. Weighting criteria for technical evaluation are:

- Tenders ability to execute the work [REDACTED]%
- Technical solution [REDACTED]%
- Tenders knowledge and experience [REDACTED]%
- Schedule [REDACTED]%
- HSE/QRM [REDACTED]%

- 8.12 Following further evaluation, two companies, [REDACTED] and Visser & Smit Marine Contracting, were shortlisted. The other bidders did not meet the requirements.

- 8.13 The technical evaluation was based on an equal proportion between the installation of submarine export cable ([REDACTED]%) and inter array EPCI ([REDACTED]%). In relation to this evaluation:

8.13.1 [REDACTED] achieved scores of [REDACTED] and [REDACTED] respectively leading to an overall technical score of [REDACTED]

8.13.2 Visser & Smit Marine Contracting achieved scores of [REDACTED] and [REDACTED] respectively leading to an overall technical score of [REDACTED].

²⁵ £[REDACTED] less variations of £[REDACTED] and the further adjustment of £[REDACTED].

8.14 A recommendation was made to award the work to Visser & Smit Marine Contracting after it achieved an overall weighting of [REDACTED]²⁶, compared to [REDACTED]²⁷ for [REDACTED].

8.15 Subsequently, the Developers entered into a contract with Visser & Smit Marine Contracting (VBMS) for the installation and burial of the subsea cable, which we have agreed to the underlying contract:

VBMS Contract Overview		£
Preliminaries	[REDACTED]	[REDACTED]
Engineering	[REDACTED]	[REDACTED]
Horizontal Directional Drilling	[REDACTED]	[REDACTED]
Mobilisation / Demobilisation	[REDACTED]	[REDACTED]
Installation	[REDACTED]	[REDACTED]
Survey	[REDACTED]	[REDACTED]
Cable protection	[REDACTED]	[REDACTED]
Total	[REDACTED]	[REDACTED]

8.16 The amount included in the CAT for this contract amounts to £[REDACTED]. In light of the small difference between the value of the contract and the amount included in the CAT of £[REDACTED], no adjustment is proposed.

8.17 There were subsequent variations to the submarine cable installation contract totalling £[REDACTED] leading to total costs for the submarine cable installation of £[REDACTED]²⁸. We requested supporting documentation for variations above £100,000. Individual variations below £100,000 amount to £[REDACTED]. We have agreed variations of (£[REDACTED]) to supporting documentation leading to an approved amount of (£[REDACTED])²⁹. The unsubstantiated variation orders amount to £[REDACTED]. We understand that Ofgem will discuss these separately with the Developers.

²⁶ Being a commercial score of [REDACTED] and technical score of [REDACTED]

²⁷ Being a commercial score of [REDACTED] and technical score of [REDACTED]

²⁸ [REDACTED]

²⁹ [REDACTED]

9 LAND CABLE SUPPLY AND INSTALLATION

9.1 The land cable supply and installation costs are comprised as follows:

CR5 – LAND CABLE SUPPLY AND INSTALLATION

Contract Overview	Ref	£
Onshore Cable Procurement		
Carillon - Onshore cable procurement – original	9.7	████████
Carillon - Onshore cable procurement – variations	9.8	████████
Onshore Cable Installation		
Carillon - Onshore cable installation – original	9.7	████████
Carillon - Onshore cable installation – variations	9.8	████████
		████████
Developers' internal costs	5.7	████████
Contingencies	5.3	████████
Total		████████

ONSHORE EXPORT CABLE

9.2 A competitive tendering approach was used for the supply and installation of the onshore cable. For this work, six contractors were pre-qualified with all six meeting the criteria and therefore all six candidates were shortlisted, leading to six submitted tenders:

- ██████████ ██████████
- ██████████ ██████████
- ██████████ ██████████
- ██████████ ██████████
- ██████████ ██████████
- ██████████ ██████████

9.3 The basis for recommendation was based upon an evaluation model focusing on costs, terms and conditions, technical solution, time schedule and QHSE, with the weighting for this tender being ██████% commercial (price) and ██████% technical solution.

9.4 Weighting criteria used for technical evaluation were:

Evaluation criteria	Weight factor - main criteria	Weight factor - sub criteria
Tenderer's ability to execute the work	█%	
Tenderer's method of executing the work		█%
Program / schedule		█%
Tenderer's organisation and management for all phases of the work		█%
Tenderer's site(s) and facilities		█%
Tenderer's knowledge and experience		█%
Consent, environmental constraints and mitigations		█%
HSE		█%
QRM		█%
Cable delivery	█%	
Cable data and design		█%
Test and test facilities		█%
Thermal analysis		█%
Fabrication facility and equipment, experience, HSE & QRM		█%
HSE		█%
QRM		█%
Fabrication capacity		█%

9.5 The six bidders achieved the following scores:

Candidate	Commercial score	Technical score	Combined score
█	█	█	█
█	█	█	█
█	█	█	█
█	█	█	█
█	█	█	█
█	█	█	█

9.6 █
 █
 █.

9.7 Subsequently, the Developers entered into a contract with Carillon Utility Services Limited for the supply and installation of the onshore export cables at a cost of £█ (█), which has been agreed to the underlying contract.

- 9.8 There were [REDACTED] variations to the contract amounting to £[REDACTED] ([REDACTED]), leading to total expected costs of £[REDACTED]. We requested supporting documentation for variations above £100,000 (individual variations below £100,000 amount to £[REDACTED]). We have agreed variations of £[REDACTED] to supporting documentation leading to an approved amount of £[REDACTED]³⁰. The unsubstantiated variations amount to £[REDACTED] however, an adjustment of £[REDACTED] is proposed by the Developers to decrease the costs in the CAT due to certain variations no longer being required. This leads to total expected costs for the supply and installation of the cables of £[REDACTED]³¹.
- 9.9 Taking the above adjustment into account, unsubstantiated variations amount to £[REDACTED]³². We understand that Ofgem will discuss these separately with the Developers.

³⁰ [REDACTED]

³¹ [REDACTED]

³² [REDACTED]

10 ONSHORE SUBSTATION

10.1 The onshore substation costs are comprised as follows:

CR6 – ONSHORE SUBSTATION COSTS

Contract overview	Ref	£
Preliminaries and system engineering		
Siemens - Preliminaries and system engineering	7.17	██████████
Onshore Substation		
Site preparation onshore substation	10.3	██████████
Siemens - Onshore substation - original	7.23	██████████
Siemens - Onshore substation - variations	7.24	██████████
		██████████
Developers' internal costs	5.7	██████████
Contingencies	5.3	██████████
Total		██████████

SITE PREPARATION COSTS

10.2 The site preparation costs are in respect of enabling works for the onshore substation at Necton.

10.3 The Developers initially estimated the CAT amount for site preparation of £██████████³³ consisting of committed purchase orders for the site enabling works amounting to £██████████ and an allowance of £██████████ for any other potential purchase orders to finalise the work at Necton substation. However, the Developers have revised their initial estimate of committed purchase orders from £██████████ to £██████████, ie a decrease of £██████████, and therefore propose an adjustment for this amount. We have agreed committed purchase orders above £100,000 (amounting to £██████████) to supporting documentation. From our review of the purchase orders we identified an additional £██████████ of costs as Transmission Assets related. As such, an adjustment is proposed.

10.4 Taking the above two adjustments into account leads to total expected costs for site preparation of £██████████³⁴.

33 ██████████

34 ██████████

10.5 We understand that Ofgem will discuss the unsubstantiated estimates of £ [REDACTED] (as per paragraph 10.3 above) with the Developers.

11 OTHER COSTS

11.1 The miscellaneous costs are comprised as follows:

CR9 – OTHER COSTS

Contract Overview	Ref	£
Pre FID development costs	11.2	████████
Development costs	5.7	████████
Studies and verifications	11.10	████████
Asset team costs	5.7	████████
Asset studies and other costs	11.10	████████
		████████
Contingencies	5.3	████████
Total		████████

PRE-FID DEVELOPMENT COSTS

11.2 Included in the CAT is £████████ in respect of pre-FID development costs. The Developers have since revised their estimate of pre-investment decision costs to £████████ leading to a decrease of £████████. As such, an adjustment to the CAT is proposed.

11.3 The revised pre investment decision costs comprise the following:

	Ref	Total Cost £	OFTO %	Total OFTO Cost £
Acquisition costs of the Wind Farm	11.4	████████	██████%	████████
Pre DG2	11.7	████████	██████%	████████
DG2-DG3	11.7	████████	██████%	████████
Total		████████	██████%	████████

Acquisition costs

- 11.4 The acquisition costs relate to those costs which were incurred by the previous developers of the Wind Farm before it was purchased by the Developers in 2012, and the total cost of £ [REDACTED] comprises:

	Ref	£
Wind Farm accumulated costs pre-acquisition	-	[REDACTED]
National Grid deposit	-	[REDACTED]
DOW cost after acquisition to final account	-	[REDACTED]
Stamp duty	-	[REDACTED]
Total	11.3	[REDACTED]

- 11.5 The allocation rate of pre-acquisition costs to the Transmission Assets of [REDACTED]% (as set out in the table in paragraph 11.3 above) is calculated based upon the estimated total Transmission Asset costs at CCE4 (after pre-FID costs) of £ [REDACTED]³⁵ as a proportion of the estimated total project cost at CCE4 of £ [REDACTED]. We have agreed the calculation of the allocation rate to the Wind Farm CCE4 budget printout from PIMS excluding pre-investment.
- 11.6 We have the agreed the Transmission Assets amounts above £100,000 amounting to £ [REDACTED]³⁶ to supporting documentation, including agreeing the pre-acquisition Wind Farm accumulated costs of £ [REDACTED] to the Dudgeon Offshore Wind Limited Report and Closing Accounts dated 16 October 2012.

35 [REDACTED]

36 [REDACTED]

PRE DG2 AND DG2-DG3 COSTS

11.7 The Developers have applied the relevant Transmission Assets percentage to the development costs, which the Developers described as pre DG2 and DG2-DG3, on a line-by-line basis based on the rates as detailed in paragraph 5.14, internal resources rates and studies rates. A breakdown of the costs is as follows:

	Total Cost £	OFTO %	Allocation method	OFTO Cost £
Pre DG2				
Administration/Legal	██████	█%		██████
Finance/Accounting/Audit	██████	█%		██████
Pre DG2 Facilities Management – Management	██████	█%	Resources	██████
Pre DG2 Facilities Management – Technical	██████	█%	Resources	██████
Pre DG2 Facilities Management - Project Control	██████	█%	Resources	██████
Pre DG2 Facilities Management - Procurement	██████	█%	Resources	██████
Pre DG2 Facilities Management - External Services and Assistance	██████	█%		██████
Pre DG2 Facilities Management - General Management Cost	██████	█%	Resources	██████
Pre DG2 Facilities Studies & 3rd party services - Other	██████	█%	Resources	██████
Pre DG2 Facilities Studies & 3rd party services –Foundations	██████	█%		██████
Pre DG2 Facilities Studies & 3rd party services - Electro	██████	█%		██████
Pre DG2 Facilities Studies & 3rd party services – Installation	██████	█%		██████
Pre DG2 Facilities Technology qualification	██████	█%		██████
Pre DG2 Asset Owner Management & Studies – Management	██████	█%	Resources	██████
Pre DG2 Asset Owner Management & Studies –Studies	██████	█%	Studies	██████
Pre DG2 Asset Owner Management & Studies - Landowner compensation	██████	█%		██████
Pre DG2 Asset Owner Management & Studies - Fishermen compensation	██████	█%		██████
Total Pre DG2	██████	█%		██████
DG2-DG3				
Administration/Legal	██████	█%		██████
Finance/Accounting/Audit	██████	█%		██████
DG2-DG3 Facilities	██████	█%	Resources	██████
DG2-DG3 Facilities management - External Services & Assistance	██████	█%	Resources	██████
DG2-DG3 Facilities management - Project control	██████	█%	Resources	██████
DG2-DG3 Facilities management – Procurement	██████	█%	Resources	██████
DG2-DG3 Facilities management - External Services & Assistance	██████	█%		██████
DG2-DG3 Facilities management - General management costs	██████	█%	Resources	██████
DG2-DG3 Studies & 3rd party services– Other	██████	█%	Studies	██████
DG2-DG3 Studies & 3rd party services – Foundations	██████	█%	Studies	██████
DG2-DG3 Studies & 3rd party services – Electro	██████	█%	Studies	██████
DG2-DG3 Studies & 3rd party services - Installation	██████	█%	Studies	██████
DG2-DG3 Asset Owner Management & Studies - Management	██████	█%	Resources	██████
DG2-DG3 Asset Owner Management & Studies - Studies	██████	█%	Studies	██████
DG2-DG3 Asset Owner Management & Studies - Landowner compensation	██████	█%		██████
DG2-DG3 Asset Owner Management & Studies - Fisherman compensation	██████	█%		██████
Total DG2-DG3	██████	█%		██████
Total costs	██████	█%		██████

- 11.8 We have requested supporting documentation for costs above £100,000, however the Developers have not provided this information to enable our substantiation of costs³⁷. The unsubstantiated costs amount to £[REDACTED]. We are unable to determine whether the pre DG2 and DG2-DG3 costs are appropriate. We recommend Ofgem discuss these costs further with the Developers prior to finalising the ITV.
- 11.9 We have agreed the allocation rates in the table above to the internal resources and studies schedules provided by the Developers, save for the allocation rate of [REDACTED]% which had been used in relation to some studies costs. However, the supporting schedules for allocation rates prepared by the Developers indicate that this rate should be [REDACTED]%. Notwithstanding our previous comments on allocation rates and that we have been unable to substantiate these costs, if Ofgem decides to accept these costs and the associated allocation methodology proposed by the Developers, a further downward adjustment to the CAT of £[REDACTED] would be required. In light of being unable to substantiate these costs, we have not proposed an adjustment to the CAT relating to the allocation rates at this time.

STUDIES BUDGET

- 11.10 The studies budget costs included within CR9 of the CAT are comprised as follows:

	Ref	CR9 per CAT £	Adjustments £	Revised total £
Studies and verifications	11.14	[REDACTED]	[REDACTED]	[REDACTED]
Asset studies and other costs	11.15	[REDACTED]	[REDACTED]	[REDACTED]
Total		[REDACTED]	[REDACTED]	[REDACTED]

- 11.11 As set out in the table above, since submitting the CAT, the Developers have since revised their estimates for studies budget costs, for which we have been provided a breakdown, as follows:

11.11.1 studies and verification costs revised from £[REDACTED] to £[REDACTED], ie a decrease of £[REDACTED]; and

11.11.2 asset studies and other costs revised from £[REDACTED] to £[REDACTED], ie a decrease of £[REDACTED].

- 11.12 As such, adjustments are proposed to decrease the amount included in the CAT by the above amounts.

³⁷ Transmission Assets costs individually below £100,000 amount to £[REDACTED].

Cost allocation rates

- 11.13 The revised CAT amount of £[REDACTED] relates to the Transmission Assets element of committed purchase orders for the studies costs. These have been reviewed on a line-by-line basis, applying the Transmission Assets rates, as described in paragraph 5.14.
- 11.14 Studies and verification costs amount to £[REDACTED] (paragraph 11.10 above), and comprise £[REDACTED] of costs fully attributable to the transmission assets and £[REDACTED] allocated at a rate of [REDACTED]%, ie £[REDACTED].
- 11.15 Asset studies and other costs amount to £[REDACTED] (paragraph 11.10 above), and comprise £[REDACTED] of costs fully attributable to the transmission assets, £[REDACTED] allocated at a rate of [REDACTED]%, ie £[REDACTED] and £[REDACTED] allocated at a rate of [REDACTED]% ie £[REDACTED]. As such, allocated costs amount to £[REDACTED] with an effective allocation rate of [REDACTED]%.

Verification

- 11.16 We have been provided with breakdowns of the purchaser orders making up the studies costs described above and have agreed amounts above £100,000 to supporting documentation, subject to a difference of £[REDACTED] identified between [REDACTED] and the CAT. As such, we propose an adjustment to decrease the costs by this amount.

1 SUMMARY OF COST MOVEMENTS AND UNSUBSTANTIATED COSTS

Summary of cost movements

Project cost category	Per CAT v4 £	Adjusted value £	Total adjustment £	Breakdown £	Revised estimate or adjustment	Rationale for adjustment	Unsubstantiated costs £
Project common costs	██████	██████	██████	██████ ██████	Revised estimate	Developers revised estimate to increase third party services costs	██████
					Adjustment	Reduction for foreign exchange gains in the CAT	
Offshore Substation	██████	██████	██████	██████ ██████ ██████ ██████ ██████ ██████	Revised estimate	Developers revised estimate to increase marine installation costs	██████
					Revised estimate	Developers revised estimate to internal resources costs	
					Adjustment	Removal of contract variations included in the CAT twice	
					Adjustment	Decrease in floatel during offshore hook-up and commissioning estimate	
					Adjustment	Decrease in rock installation estimate to reflect actual cost incurred	
					Adjustment	Reduction for foreign exchange gains in the CAT	
Submarine cable supply & install	██████	██████	██████	██████ ██████ ██████ ██████	Revised estimate	Developers revised estimate to internal resources costs	██████
					Adjustment	Decrease in subsea cable supply contract to reflect correct sterling cost (as shown in PIMS system)	
					Adjustment	Decrease in subsea cable supply variations to correct calculation error	
					Adjustment	Reduction for foreign exchange gains in the CAT	
Land cable supply & install	██████	██████	██████	██████ ██████ ██████ ██████	Revised estimate	Developers revised estimate to internal resources costs	██████
					Adjustment	Decrease in land cable variations no longer required	
					Adjustment	Reduction for foreign exchange gains in the CAT	
					Adjustment	Removal of contingency provisions	

Project cost category	Per CAT v4 £	Adjusted value £	Total adjustment £	Breakdown £	Revised estimate or adjustment	Rationale for adjustment	Unsubstantiated costs £
Onshore substation connection	██████	██████	██████	██████	Revised estimate	Developers revised estimate to decrease onshore substation site preparation costs	██████
				██████	Revised estimate	Developers revised estimate to internal resources costs	
				██████	Adjustment	Increase in onshore substation site preparation costs for additional amounts identified	
				██████	Adjustment	Reduction for foreign exchange gains in the CAT	
				██████	Adjustment	Removal of contingency provisions	
Other costs	██████	██████	██████	██████	Revised estimate	Developers revised estimate to decrease pre investment decision costs	
				██████	Revised estimate	Developers revised estimate to decrease studies and verifications	
				██████	Revised estimate	Developers revised estimate to decrease asset studies and other costs	
				██████	Revised estimate	Developers revised estimate to internal resources costs	
				██████	Adjustment	Decrease in asset studies and other costs for difference between PO and amount in CAT	
				██████	Adjustment	Reduction for foreign exchange gains in the CAT	
				██████	Adjustment	Removal of contingency provisions	
Total capital costs (exc. IDC)	██████	██████	██████				██████
			██████X%				██████X%



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