Ex-Ante Cost Review of the Humber Gateway Offshore Wind Farm Transmission Assets

Report of Grant Thornton UK LLP

dated 26 November 2014

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1 EXECUTIVE SUMMARY

1.1 The Humber Gateway Offshore Wind Farm (HGOWF/ the Wind Farm) is located in the North Sea, approximately eight kilometres from the cost of East Yorkshire. The Wind Farm covers an area of approximately 35 square kilometres, and is situated in water depths of around 15 metres.

1.2 The Humber Gateway Transmission Assets (the Transmission Assets) will comprise an offshore substation platform (OSP), two offshore export cables, two onshore underground export cables and an onshore substation.

1.3 The Transmission Assets are due to be completed and commissioned in one continuous phase and the first power export is scheduled for late 2014. Full commissioning is expected by summer 2015.

1.4 HGOWF is wholly owned by E.ON Climate & Renewables UK Humber Wind Limited (the Developer) which is a subsidiary of E.ON UK plc[1]. The ultimate parent of the E.ON group of companies is E.ON SE. The project forms part of the renewables business of E.ON Climate & Renewables (EC&R).

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 Developer for the Transmission Assets of the Wind Farm (the Ex-Ante Review).

1.6 The Ex-Ante Review has considered the accuracy, completion and allocation of costs against the cost assessment template prepared by the Developer for the Transmission Assets based on supporting information and methodology provided by the Developer. Further detail of our work is set out in **Sections 4 to 14** of this report. These should be read in conjunctions with the Introduction and Background set out in **Sections 2 and 3** respectively. 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 identification of technical issues that we have noted 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] Humber Gateway Information Memorandum, April 2014, page 8

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

1.7 The cost assessment template dated 11 June 2014 (the CAT) estimates the costs of the Transmission Assets at £169,966,948. The costs of the Transmission Assets are assessed as follows:

Transmission Assets cost summary

	Section ref	Total costs £	%
CR2 - Offshore substation	7	[redacted]	[redacted]
CR3 - Submarine cable supply and install	8	[redacted]	[redacted]
CR4 - Onshore cable supply and install	9	[redacted]	[redacted]
CR5 - Onshore substation	10	[redacted]	[redacted]
CR6 - Reactive substation	11	[redacted]	[redacted]
CR7 - Connection contract costs	12	[redacted]	[redacted]
CR8 - General development (contingency, development costs)	13	[redacted]	[redacted]
Total capital costs		**169,966,948**	**100%**

SUMMARY OF FINDINGS

1.8 The Developer has provided us with supporting documentation and/or explanations for items included within the cost template, which we have reviewed. We have found that all major items of expenditure for Transmission Assets have been procured under contracts specific to the transmission business.

1.9 We have agreed approximately 66.9% (£113,689,164) of costs of the transmission business to the major contracts entered into between the Wind Farm and the subcontractors for the various packages. We have agreed approximately 5.5% (£9,431,074) of costs to contract options and variation orders, and a remaining 26.9% (£45,718,610) to working schedules with underlying support documentation. However, there are areas where we would recommend that Ofgem should discuss an issue with the Developer as highlighted within this report.

Contingencies

1.10 The CAT includes a contingency provision of £[redacted] ([redacted]% of total capital costs). The entire contingency cost is included within CR8 General Development (contingency, development costs). The Developer calculates contingencies based on a risk register. Due to the stage of construction, the aggregated amount of contingency for the Engineering, Procurement and Construction (EPC) packages is low relative to other wind farms we have seen.

1.11 By the time of the ex-post cost assessment (the Ex-Post Review), the value of contingencies is expected to fall to £Nil, as at this stage, all costs will be known.

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Allocation of shared costs

1.12 As part of our review of the Developer's cost assessment of the Transmission Assets, we are required to consider how the Developer has allocated those costs which are common to the Wind Farm as a whole, and which cannot be directly allocated to either the Transmission or Generation Assets.

1.13 The Developer has used three methods of allocating shared costs as follows:

1.13.1 Project management and transaction costs are allocated based upon the time spent by project staff working on the Transmission Assets as a proportion of their total time spent working on the Wind Farm.

1.13.2 Certain costs relating to the Transmission Assets have been allocated based upon the area attributable to the Transmission Assets as a proportion of total area. For example, in respect of boulder clearance where the Transmission Assets occupy 10% of the total seabed associated with the Humber Gateway project, or the onshore substation land, which is 98% occupied by the Transmission Assets.

1.13.3 Insurance and other miscellaneous costs have been allocated to the Transmission Assets based upon the direct costs associated with the Transmission Assets as a proportion of the total direct costs of the Wind Farm as a whole. The ratio of direct Transmission Assets costs to total direct costs is 22.2%. The Developer has explained that this has been rounded up to 25%, to allow for the project management intensive nature of the Transmission Assets. The basis for rounding this percentage up to 25% is something that Ofgem may wish to discuss further with the Developer. In respect of insurance costs, we do not feel it is appropriate to allocate these at his higher rate and so have proposed an adjustment to the insurance costs (paragraph 13.40).

1.14 We consider that the allocation methods employed by the Developer and the rates used are reasonable, subject to confirmation that the rounding up of the allocation rate of 25% is appropriate.

Foreign exchange

1.15 The CAT includes costs which are payable in foreign currencies (particularly Euro). The Developer has confirmed that it enters into hedging agreements within the group to protect the project from foreign exchange risk.

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1.16 All of the costs in the CAT are shown in Pounds Sterling. However, some of the costs have originated in foreign currencies as follows:

Currency transactions	Value £
Pounds Sterling	157,184,252
US Dollars	
Fuel and consumables	1,405,113
	1,405,113
Euro	
Charter of MV MPI Adventure	[redacted]
Insurance costs	[redacted]
Foundation installation equipment	[redacted]
	11,377,583
	169,966,948

Harland & Wolff contract – offshore substation foundations

1.17 [redacted]

1.18 [redacted]

Salary costs

1.19 [redacted]

Costs requiring further substantiation

1.20 [redacted]

Commercial contingency

1.21 The Developer has included a contingency of £[redacted] should the OFTO process fail to recover the costs for Capital and/or Transmission. We do not consider this to be an appropriate contingency to include within the value of the Transmission Assets and proposed an adjustment to the CAT to release this contingency (paragraph 13.16).

Areas requiring technical input

1.22 As part of our review, we have identified items of expenditure which may benefit from a review by Ofgem's technical advisers in order to establish whether the costs have been efficiently incurred, as this is outside our area of expertise. Further detail of these areas is included from paragraph 14.8.

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CONCLUSION

1.23 Following the Ex-Ante Review of the CAT and the supporting information provided, we consider that the capital value of the Transmission Assets as per the CAT may require a reduction from £169,966,948 to £168,729,243, a reduction of £1,237,705 (1% of capital costs of the Transmission Assets).

Impact of cost assessment

	Ref	£
Cost of Transmission Assets per CAT (excluding IDC)	4.4	169,966,948
Potential adjustments arising as a result of our review		
Offshore substation costs		
Harland & Wolff Heavy Industries Limited	7.24	[redacted]
Submarine cable supply and installation		
VSMC	8.20	[redacted]
General development costs		
Correction of formula error in E.ON Staff and Contractor Costs schedule	13.5	[redacted]
Insurance		
Reduction in allocation rate from 25% to 22.2%	13.40	[redacted]
Contingency		
Commercial contingency	13.16	[redacted]
Total adjustments		(1,237,705)
Revised cost of Transmission Assets		**168,729,243**

Grant Thornton UK LLP

London

26 November 2014

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2 INTRODUCTION

INSTRUCTIONS

2.1 Grant Thornton has been instructed by Ofgem to prepare a report on the Ex-Ante Review of the cost information and CAT prepared for Ofgem by the Developer for the Transmission Assets of HGOWF.

2.2 The review is to understand whether the costs provided in the Developer's CAT can be matched to specific contracts or other supporting information, and whether appropriate metrics exist for cost allocation between transmission and generation. Our work has involved tracing the amounts quoted on the cost assessment template to supporting contracts, schedules and other information that indicates how costs have been derived. The review also involved a site visit to the Developer's premises in order to discuss the information provided and 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 the Developer's cost estimate requires updating for the next stage of the transfer process, EPQ and ITT;

2.3.2 aid technical identification 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 the ITV for the ITT by reviewing accuracy, allocation and completeness of cost information.

2.4 The Ex-Ante Review is based upon the Developer's current estimates of the costs to be incurred by the transmission business. Following construction of the Wind Farm, we expect to carry out a detailed forensic review of the actual expenditure incurred by the transmission business (the Ex-Post Review).

2.5 Grant Thornton's high level review of the Ex-Ante cost information provided by the Developer 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 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.

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2.7 This work does not constitute an audit performed in accordance with Auditing Standards, but follows instructions agreed upon with Ofgem, as detailed in the task order dated 30 July 2014.

2.8 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.

2.9 The report has been prepared using Microsoft Word and Excel. The report may contain minor rounding adjustments due to the use of computers for preparing certain calculations.

2.10 No responsibility is accepted to anyone other than Ofgem.

RESTRICTION ON CIRCULATION

2.11 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.

2.12 In the preparation of this 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

2.13 To the best of our knowledge, we have no connection with any of the parties or advisers involved in this matter beyond normal commercial relationships, which would not influence our report in any way.

FORMS OF REPORT

2.14 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.

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3 BACKGROUND

INTRODUCTION

3.1 The HGOWF is located in the UK North Sea, approximately eight kilometres from the coast of East Yorkshire. The wind farm covers an area of approximately 35 square kilometres, and is situated in water depths of around 15 metres. It will consist of 73 Vestas 3.0MW turbines, with a maximum total generating capacity of 219MW[2].

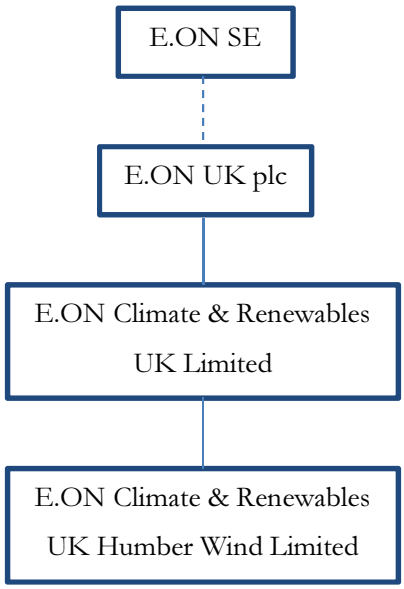
3.2 The Humber Gateway Transmission Assets will comprise an offshore substation platform, two nine kilometre long 132kV undersea offshore export cables, two sets of 30 kilometre long 132kV onshore underground cables and an onshore substation at Staithes Road, Salt End, Hull.

3.3 The Humber Gateway Transmission Assets are due to be completed and commissioned in one continuous phase and the first power export is scheduled for late 2014. Full commissioning is expected by summer 2015.

OWNERSHIP STRUCTURE

3.4 HGOWF is wholly owned by the Developer which is a subsidiary of E.ON UK plc[3]. The ultimate parent of the E.ON group of companies is E.ON SE. The project forms part of the renewables business of EC&R.

3.5 The current ownership of HGOWF is as follows:



[2] Humber Gateway Information Memorandum, April 2014, page 8

[3] ibid

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4 THE HUMBER GATEWAY EX-ANTE REVIEW

OVERVIEW

4.1 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 Developer's CAT for the Transmission Assets are properly 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.

4.2 The starting point in our review of the cost information provided was the CAT dated 11 June 2014, which was based upon the Developer's estimates of the costs of the Transmission Assets at that date.

4.3 Our analysis has considered confirmation that costs incurred relate to contracts that are either 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 is different in some cases depending on what is considered the main driver behind the relevant cost (this is usually capital cost or the degree of time/activity required in relation to different components of the Wind Farm development). 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 actually been incurred by tracing to actual payments. That will be done for selected contracts as part of a later forensic review (the Ex-Post Review).

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

Transmission Assets cost summary

	Section Ref	Total costs £	%
CR2 - Offshore substation	7	[redacted]	[redacted]
CR3 - Submarine cable supply and install	8	[redacted]	[redacted]
CR4 - Onshore cable supply and install	9	[redacted]	[redacted]
CR5 - Onshore substation	10	[redacted]	[redacted]
CR6 - Reactive substation	11	[redacted]	[redacted]
CR7 - Connection contract costs	12	[redacted]	[redacted]
CR8 - General development (contingency, development costs)	13	[redacted]	[redacted]
Total capital costs		**169,966,948**	**100%**

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4.5 Our findings in respect of the Ex-Ante Review are set out as follows:

i the overview of the Developer's processes for accounting and procurement of the Wind Farm is set out in **Section 5**;
ii our work in relation to costs and procurement matters which are common to the CAT as a whole is set out in **Section 6**;
iii our work in relation to costs specific to each component of the Transmission Assets, summarised on the CAT under CR2, CR3, CR4, CR5, CR6, CR7 and CR8 is set out in **Sections 7** to **13**; and
iv a summary of the issues identified as part of our review is set out in **Section 14**.

INFORMATION PROVIDED

4.6 Grant Thornton has relied upon the following information in reviewing the cost assessment for the Wind Farm:

i Preliminary Information Memorandum dated February 2014[4] and the Information Memorandum dated April 2014[5];
ii information contained in the Ofgem developer data room for the HG Wind Farm Project; and
iii information and explanations provided to us by the Developer. This included a visit to the Developer on 22 July 2014 to discuss the Transmission Assets and subsequent telephone calls and email correspondence with the Developer.

[4] Actual date not specified

[5] ibid

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5 HUMBER GATEWAY PROCESSES

INTRODUCTION

5.1 In this section, we set out the processes which have been used by the Developer in relation to the procurement of and the accounting for the Wind Farm, and in particular, the Transmission Assets.

5.2 From our discussions with the Developer 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:

i competitive tendering;
ii specific planning and budgeting tools, including building on experience obtained from similar projects; and
iii controls over variation orders and large expenditure items.

5.3 The Developer provides the accounting team that supports the Wind Farm project and undertakes the budgeting process. It uses the 'SAP' accounting system.

DECISION MAKING PROCESSES

5.4 The governance process for approvals is covered by a range of procedures, dictated by the E.ON Group, EC&R and from within the Humber Gateway Project Manual. In addition, these procedures have, in some cases, been updated during the construction period.

Accounting and budgeting process

5.5 The CAT has been compiled from data collected (in its Microsoft Excel spreadsheet based financial reporting system) by the Wind Farm project team in the course of its monthly reporting of the project's 'Estimated Cost to Completion'. The CAT has been populated manually, with information derived from contracts and estimates of future costs, as well as 'SAP' payment records. The compilation of the CAT has been performed as follows:

i Those elements of the Wind Farm project that are relevant to the Transmission Assets have been identified and their 'Estimated Cost to Completion' (as taken from the firm contract values, or as otherwise estimated) then determined from the Humber Gateway cost reporting system.

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ii Where a cost is related to both the transmission and generation businesses, an assessment has been made of the proportion of the cost that should be attributed to the Transmission Assets. These are based upon specific metrics. For example, in the case of the onshore substation land costs, the costs attributable to the Transmission Assets have been allocated according to the physical area occupied by the Transmission Assets as a proportion of the total area.

iii In some cases, the Developer has been able to provide a more detailed breakdown of asset costs, by referring to the price schedules of the contracts for the respective assets.

5.6 The project team uses the corporate 'SAP' software system in order to monitor payments made against the project budget. The allocation of costs to Work Breakdown System (WBS) codes assists the team in quickly identifying which costs recorded within the 'SAP' system apply to the various elements of the Humber Gateway project.

Budget change request

5.7 The Developer has explained that the budget was approved at 'Gate 2' level (ie at Board Level of E.ON SE) in October 2011. Throughout the construction, contingencies have been included to represent the financial risks facing the project on an on-going basis. In the event that changes to the budget would be required above the contingencies already in place, a similar level of approval would be needed.

5.8 The Developer has explained that increases to the original budget were approved at 'Gate 2' level during the course of the project, to take account of cost increases resulting from matters such as prices that were estimated at the time of the original budget being confirmed by the placement of contracts, and the types and durations of vessel usage differing from those originally anticipated.

Forecasting updated and cost controlling

5.9 Forecasts of future costs across the elements of the Humber Gateway project are produced by the Humber Gateway Commercial team, and then reviewed on a monthly basis, via discussions between the team's Commercial Analyst and the Package Managers across the project.

5.10 While some costs are based upon 'lump sum' fixed price contracts and can be estimated with confidence, other activities (such as for offshore installation works) are calculated on a 'time and materials' basis and are more difficult to forecast (being subject to factors such as weather and sea conditions).

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5.11 Every month, the budget is reported to the Project Steering Committee, which comprises the Head of Offshore Construction, the Head of Offshore Development, the Head of Offshore Operations, the Head of Offshore Finance and the Director of Offshore.

PROCUREMENT PROCESS

5.12 The Developer has a corporate policy on the process and method to be used for procurement of purchases. This is updated periodically. The policy describes the process to be followed, which can be summarised as follows:

i the Procurement Team are managed outside of the Project Team, and as such are independent decision makers;
ii all purchases must be recorded on the SAP system, on placement through to completion of the transaction;
iii purchases below €[redacted] can be made by the Project Team without reference to the Procurement Team and within the delegations of EC&R;
iv for purchases above €[redacted] and below €[redacted], procurement are consulted on the purchase, quotations are managed by the Procurement Team and the option to single source applies;
v for purchases above €[redacted] the Procurement Team are fully involved and manage the process. Three quotations must be received unless approval is given by the EC&R board; and
vi for purchases above €[redacted], in addition to the requirements of v above, approval must be given by the Offshore Steering Committee and, in the latest policy update, purchases at this level need to be approved by a Sourcing Board. All tenders at and above this level must be submitted in hard copy to the Procurement Team unless it is an eSourced purchase.

5.13 For large purchases, the Project and Procurement teams will produce the tender material, which will include the conditions of contract and other commercial terms. The bids will be evaluated by the Project and Procurement teams.

5.14 The evaluation of the bids were summarised on the Contract Authorisation Form (CAF), which recorded the recommended supplier and were authorised by an appropriately delegated person.

Competitive tendering

5.15 One of the main tools used by the Developer in achieving value for money and highest compliance to requirements is the use of a competitive tendering process for the selection of companies to construct the Wind Farm.

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5.16 We understand that the [redacted] out of 11 main contracts were competitively tendered[6], with the Developer inviting specialist contractors in each area to tender for the work. Details of those contracts that were awarded on a single-source basis are as follows:

[Table redacted]

5.17 The preferred number of tenders is three, but there may be fewer invited to tender when the nature of the work means that satisfying this criteria would be impossible. With the exception of those contracts listed above which were singly sourced, all major contracts were subject to at least three tenders.

5.18 The Procurement Team manage the competitive tender process so that the technical evaluation can be completed without judgment being clouded by commercial considerations. The Developer has explained that when evaluating each tender above a low threshold value, the Project Team evaluate the technical considerations of the tender, without considering cost, whilst the Procurement Team evaluate the cost as well as the 'terms and conditions' independently.

5.19 The EC&R Contract Authorisation Form must be completed for each contract. This shows who was invited to tender and who submitted a tender. It states which supplier is to receive the contract, and gives detailed reasons behind the selection. An explanation has to be provided if fewer than the required number of suppliers were invited to tender (two suppliers are required for amounts less than €[redacted], and three suppliers for amounts greater than €[redacted]).

5.20 The authorisation form is signed by the Requester, Budget Holder and the Procurement Officer. At the Budget Holder's discretion, the Health & Safety Officer and Asset Manager may also counter sign the document. Where the award value is greater than €[redacted] (or equivalent value in another currency denomination) the EC&R Board must sign.

5.21 We have reviewed the tender evaluation documentation for five of the large contracts: jacket foundation, supply, installation, onshore and offshore platform supply and installation, offshore export cable supply, offshore export cable installation, and onshore export cable supply and installation. We have commented (at paragraphs 7.2, 7.15, 8.2, 8.13 and 9.2) upon the reason behind the award for each contract as given in the tender evaluation documentation.

[6] Email from [redacted] dated 14 July 2014, at 13:38

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5.22 The SAP system records the authorised contract sum, which reflects the contract value and an additional sum giving scope for variations without seeking increased funds. Additional contract sums have to be approved in line with the procurement process outlined above.

COST ACCOUNTING AND ALLOCATION METHODOLOGY

5.23 Where project costs are not fully attributable to the Transmission Assets (shared costs), estimates have been made of the proportions of the costs that should be attributed to the Transmission Assets. The CAT identifies the proportions of costs allocated to the Transmission Assets, and supporting calculations have been provided by the Developer with further details of these allocations.

5.24 Shared costs are typically indirect costs which are for the general benefit of the overall project and include:

i general project management and administration;
ii project support functions eg procurement, cost control, health and safety;
iii general consultants eg legal/environment and consent; and
iv equipment benefiting both the Transmission and Generating Assets.

5.25 Cost allocation of shared costs has been performed in one of the following three ways:

5.25.1 For project management and transaction costs an analysis has been performed of staff employed on the project. The approach used is to estimate the cost of their work and the amount of time that they have spent working on Transmission Assets, and therefore the cost that should be attributed for their work is allocated to the Transmission Assets. The rates used vary between £[redacted] and £[redacted] per fortnight for staff, and between £[redacted] and £[redacted] per day for contractors, depending on their role. Where actual costs on purchase orders are available, these have replaced estimated costs. The Developer has confirmed[7] that there is no profit element included within in internal staff costs.

[7] Confirmed at site visit on 22 July 2014

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5.25.2 Where a specific calculation can be made, for example, in respect of boulder clearance where the Transmission Assets occupy 10% of the total seabed associated with the Humber Gateway project, the specific percentage calculated can be allocated to the cost (ie 10% of the boulder clearance costs have been allocated to the Transmission Assets based upon the area occupied). Land acquisition costs are another example where a calculation of the area has been conducted in order to allocate costs to the Transmission Assets.

5.25.3 In respect of insurance and other miscellaneous costs it has been assumed that the cost should be allocated in proportion to the value of the Transmission Assets as a total of the overall project, which is estimated at 25%. This is a common method (and percentage) of cost allocation which we have seen on other Wind Farm Projects.

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6 COSTS COMMON TO THE TRANSMISSION ASSETS AS A WHOLE

INTRODUCTION

6.1 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 a number of types of cost and cost principles which are common to the Transmission Assets as a whole.

6.2 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 later sections of this report.

COSTS

Contingencies

Methodology

6.3 The Developer has conducted a detailed exercise in order to calculate the contingency provision for the projects, based on the Humber Gateway risk register.

6.4 The risk register records all significant project risks and is maintained by the Risk Manager in collaboration with the package managers on an on-going basis, so that current project risk and contingencies can be evaluated continuously.

6.5 A quantitative risk assessment is undertaken to quantify the combined effects of all risks and uncertainties of the project. The outcomes are estimated using Monte Carlo simulation techniques[8] which enables the package managers to estimate the risk and the level of contingency in monetary terms.

[8] This is a mathematical technique which allows risk to be accounted for in quantitative analysis and decision making. Monte Carlo simulation furnishes the decision-maker with a range of possible outcomes and the probabilities they will occur for any choice of action.

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Calculation

6.6 A breakdown of the contingency provision included within the CAT of £[redacted], approximately [redacted]% of the pre-contingency capital costs is set out at paragraph 13.10.

6.7 The CAT includes a value for 'risk contingency'. This value has been calculated via the following process[9]:

6.7.1 E.ON has a corporate policy on the process and method to be used to calculate risk, and thus contingency, in any project. Factors such as delay risk and technical risk are evaluated. Evaluation is looked at both in terms of likelihood and impact.

6.7.2 The Humber Gateway Risk Manager meets the Package Managers (who are responsible for the various areas of engineering and management) on the project, every month, to identify, review and evaluate risks that could affect the budget or programme.

6.7.3 These risks are then tabulated, and a value calculated for each (based on the estimated probability, minimum, most likely and maximum costs for each risk).

6.7.4 The Transmission Asset 'Risk Contingency' value is the total of the risk values for the risks associated with the Transmission Assets.

6.8 Details of the individual risks, including assumptions made in evaluating them, mitigation measures and the expected value of each risk and the risk totals across each area of the Transmission Assets have been set out in a spreadsheet provided by the Developer[10].

Verification work

6.9 We have discussed the contingency provision with the Developer, and sought an overview of the key OFTO-related risks associated with the contingency and explanations for all amounts greater than £100,000 included within the provision.

6.10 Due to the advanced stage of the project, the contingency figure is low at £[redacted]. The entire contingency provision is included within CR8 - General Development Costs. Our detailed verification work regarding this is included within **Section 13**.

[9] 3.1.1 Humber OFTO - Explanation note - Ex Ante Cost Assessment - How contingency has been calculated in the Cost Assessment

[10] 2.14_Risk Contingency Analysis Spreadsheet Rev4

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Technical review

6.11 Whilst we have reviewed the explanation of risks in excess of £100,000, which appear reasonable in regard to the Transmission Assets, we consider that the assessment of the expected value of risks and of the likelihood of each event occurring fall within the scope of a technical assessment, rather than the Ex-Ante review. On that basis, we cannot say whether these amounts, which form the basis for the contingency provision, are correct.

Interest during construction

6.12 The CAT includes the Developer's nominal pre-tax interest charge. The rates applied are as follows:

i 10.8% to 30 November 2011;
ii 8.5% from 1 December 2011 to 31 March 2014; then
iii 8.0% from 1 April 2014.

6.13 At our site visit, the Developer explained that they would be energising in two halves, the first in November 2014 and the second in February 2015. The full interest during construction will be charged (at the prevailing rates) until November 2014, after which, only 50% will be charged until February 2015, when the project is expected to be fully operational. Beyond this time, the Developer will cease to earn interest. We are informed that this situation has changed since the date of our site visit and the new timetable will be discussed with Ofgem.

6.14 The Developer's interest cost for the Transmission Assets totals £[redacted].

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COST PRINCIPLES

Foreign exchange

6.15 All of the costs in the CAT are shown in Pounds Sterling. However, some of the costs have originated in foreign currencies as follows:

Currency transactions	Value £
Pounds Sterling	157,184,252
US Dollars	
Fuel and consumables	1,405,113
	1,405,113
Euro	
Charter of MV MPI Adventure	[redacted]
Insurance costs	[redacted]
Foundation installation equipment	[redacted]
	11,377,583
	169,966,948

6.16 For the Humber Gateway project there are currently no major exposures to foreign exchange variances, with the major Transmission Assets related purchases in foreign currencies being chartering of the MV Adventure vessel, fuel and consumables and project insurance.

Mitigation of foreign exchange risk[11]

6.17 When major contracts are entered into in foreign currencies, the values of these contracts are 'hedged' in order to protect the project against fluctuations of Pounds Sterling against the currency in which the contract is denominated. From discussions with the Developer at our site visit on 22 July 2014, we understand that hedging agreements are made internally within the E.ON Group for contracts above £[redacted]. Transactions below this level will be unhedged.

6.18 When a purchase order is raised for goods or services denominated in foreign currencies, the purchase order will be recorded in the accounting system at the spot rate, which is the rate prevailing at the time that the purchase order request is written, until such time as it is hedged. Once it is hedged, it is translated into Pounds Sterling at the hedged rate. Foreign exchange gains or losses are not realised in the accounting system until the deals have matured.

[11] 3.1.1 Humber OFTO - Explanation note - Ex Ante Cost Assessment - Management of Foreign Exchange Transactions

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6.19 Prior to placement of the contract (and hedging) the value of the contract is estimated in Pounds Sterling within the project's financial reporting system, and a risk is recorded within the 'risk contingency' value to reflect the possibility of foreign exchange fluctuation affecting that cost estimate.

6.20 Once the contract has been placed (and its value hedged), the hedged value is reported in the financial reporting system and the foreign exchange risk is removed from the 'risk contingency' value.

6.21 Payments against such hedged contracts are capitalised to the project's balance sheet at the latest spot rate, with the associated gain/loss (between the hedged rate and the spot rate) being reported in the project's profit and loss account.

6.22 We have reviewed the hedging arrangements in relation to the largest contract denominated in foreign currency as follows:

6.22.1 The hedging arrangement under which significant future foreign exchange transactions will take place is for the charter of the MV MPI Adventure. A total of €[redacted] has been purchased, equating to £[redacted] of its charter costs. A further €[redacted] of costs are budgeted, but not hedged, for the option to use the vessel for additional days.

6.22.2 We have been provided with details of three of the hedging arrangements entered into by the Developer[12]. Since the charter of the MV MPI Adventure is the largest cost denominated in euros, we asked to see the largest hedging agreement covering the total cost. This can be summarised as follows:

[Table redacted]

6.22.3 The Developer has confirmed[13] that the 'spot' and 'deal' rates are those available on the currency markets (values being provided by organisations such as 'Bloomberg' and 'Reuters'). The 'spot' rate is the rate available at the time a deal is placed, and the 'deal' rate is the 'spot' rate, factored for interest rate differences between the currencies up to the date that the transaction is due to mature. Ofgem may wish to make further enquiries.

[12] 3.1.1 Ex Ante Cost Assessment - MPI Hedging Agreements

[13] Email from [redacted], E.ON dated 30 October 2014

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Application of overriding global discounts

6.23 [redacted]

Taxation status[14]

6.24 The Developer has confirmed that the transmission business will be transferred as a going concern for VAT purposes and therefore, should benefit from the associated tax reliefs. Should Her Majesty's Revenue & Customs (HMRC) later rule that the transaction is not a transfer of going concern, then VAT will be payable, together with any interest and penalties.

6.25 All qualifying transmission assets will be treated as long life assets and allocated to the special rate pool for capital allowance purposes. The estimated useful life of the Harland and Wolff platform is [redacted] years, and so it will still qualify as a long life asset. The Developer has explained that the wind turbine nacelles have a useful economic life of [redacted] years, and the towers [redacted] years; however, these turbines do not form part of the Transmission Assets. However, all capital allowances relating to the Transmission Assets will be unclaimed during the construction phase and as such, the full benefit of these will be passed on to the purchaser.

Related party transactions

6.26 As required, the Developer has confirmed that there have been no related party transactions, other than staffing as set out at paragraph 5.25.1.

Boundaries used for purposes of cost allocation

6.27 The Developer has provided a note[15] which confirms the proposed boundary points of the Transmission Assets, as described in the Information Memorandum, as follows:

i offshore - located at the 33kV cable box 'bushings' on each feeder isolator

ii onshore - located at the 275kV bus bar 'clamps' for each of the four line isolators

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

[14] 3.1.1 Humber OFTO - Explanation note - Ex Ante Cost Assessment - Tax status of HGOWF

[15] 3.1.1 Humber OFTO - Explanation note - Ex Ante Cost Assessment – Transmission System Boundary Points

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7 OFFSHORE SUBSTATION

7.1 The offshore substation costs are comprised as follows:

CR2 - Offshore substation costs

	Ref	£
Offshore substation costs		
CG Power Solutions UK Limited (CG Power)- supply and installation of offshore substation	7.5	[redacted]
Other offshore substation costs	7.9	[redacted]
		[redacted]
Substation foundation design and supply		
Harland & Wolff Heavy Industries Limited (Harland and Wolff)	7.20	[redacted]
		[redacted]
Substation installation costs		
Adventure Shipping B.V.	7.25	[redacted]
		[redacted]
Other offshore substation costs		
Storage of substation topside	7.32	[redacted]
Unexploded ordnance disposal	7.32	[redacted]
Boulder clearance	7.34	[redacted]
		[redacted]
Total		[redacted]

OFFSHORE SUBSTATION COSTS

7.2 Four companies were invited to tender for the construction of the offshore and onshore substations. All four submitted tenders:

i [redacted]

7.3 [redacted]

7.4 [redacted]

7.5 [redacted]

[Table redacted]

[16] The cost assessment template includes a negative figure of £[redacted] to correct error in cost breakdown. This has been allocated to electrical equipment.

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7.6 The contract with CG Power dated 22 December 2011[17] provides for the supply and installation of both the offshore and onshore substations. The contract schedules split out the costs between the substations and, further, split out the cost attributable to the Transmission Assets of both substations. The total cost of £[redacted] in relation to offshore substation Transmission Assets has been agreed to the contract. The Developer has explained that a proportion of the offshore substation is not to be sold as part of the Transmission Assets, in particular, 33kV equipment associated with feeding power through the 'array cables' that will run between the turbines and the offshore substation. This equipment (and associated project management, engineering and design costs) accounts for the non-Transmission Asset element of the offshore substation cost. As the offshore substation has both Transmission Asset and non-Transmission Asset elements, Ofgem may wish to obtain technical advice as to whether the proportions of expenditure allocated to the Transmission Asset (including for other substation costs below) are appropriate.

7.7 Further variations, which we have agreed to the issued variation orders, have been made to the contract as follows:

i [redacted]

7.8 Variation order V007 relates to agreed topside load-in to Sunderland for £[redacted], but has not yet been issued. The total is agreed to supporting workings[18]. A further variation of £[redacted] is anticipated for steelwork modification.

7.9 Other substation costs are included in the CAT as follows:

Other costs

	Ref	£	% Allocation to OFTO
CG Power - claim for additional costs	7.10	[redacted]	100%
Garrard Hassan and Partners Limited - substation foundation design management	7.11	[redacted]	100%
Det Norske Veritas Danmark A/S	7.12	[redacted]	100%
Heerema Hartlepool Limited - early substation foundation design works	**Error! Reference source not found.**	[redacted]	100%
Atkins Limited - substation foundation pile design	7.14	[redacted]	100%
Total		[redacted]	

[17] 2.14 Finance Sheet Cii - CG Power Onshore Cost Breakdown Spreadsheet

[18] 2.14_Finance Sheet C - CG Power Costs Spreadsheet

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7.10 [redacted]

7.11 [redacted]

7.12 [redacted]

7.13 [redacted]

7.14 [redacted]

SUBSTATION FOUNDATION DESIGN AND SUPPLY

7.15 [redacted]

7.16 [redacted]

7.17 [redacted]

7.18 [redacted]

7.19 [redacted]

7.20 Further to the award of the tender, the Developer entered into a contract with Harland & Wolff in respect of the design and supply of the offshore substation. The contract and its subsequent variations are summarised as follows:

Harland & Wolff

	Ref	£	% Allocation to OFTO
Original contract			
Design, supply and fabrication of offshore substation foundation jacket		[redacted]	100%
	7.21	[redacted]	
Subsequent variation orders			
V001: Various works	7.22	[redacted]	100%
V001: Employer's contribution towards augmentation of the contractor's existing heavy lifting beam	7.23	[redacted]	100%
Proposed variations	7.24	[redacted]	100%
		[redacted]	
Total		[redacted]	

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7.21 The contract with Harland & Wolff dated 12 March 2013[19] provides for the design, supply and fabrication of the offshore substation foundation jacket. The total cost of £[redacted] has been agreed to the contract.

7.22 [redacted]

7.23 [redacted]

7.24 [redacted]

SUBSTATION INSTALLATION COSTS

7.25 The Developer entered into one major contract with Adventure Shipping B.V. to hire the MV MPI Adventure for the installation of the substation. The contract is summarised as follows:

Adventure Shipping B.V.

	Ref	£	% Allocation to OFTO
Adventure vessel hire	7.26	[redacted]	100%
Vessel fuel and consumables	7.27	[redacted]	100%
Vessel deck strengthening and grillage	7.28	[redacted]	100%
Installation crew	7.29	[redacted]	100%
Welding, grouting, equipment and tools	0	[redacted]	100%
Total		[redacted]	

7.26 [redacted]

7.27 [redacted]

7.28 [redacted]

7.29 [redacted]

[19] 2.1.1_Harland and Wolff Contract - Vol IV Annexes - Part B Commercial - Annex B01 - Price Schedule v4.0

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7.30 The CAT includes costs in relation to installation equipment. The costs have been calculated as follows:

Installation equipment

	£	% Allocation to OFTO	Supporting calculation
Pile Hammer	[redacted]	[redacted]	[redacted]
Rigging and lifting frames	[redacted]	[redacted]	[redacted]
Levelling tool	[redacted]	[redacted]	[redacted]
Drill spread	[redacted]	[redacted]	[redacted]
Grout spread and supply	[redacted]	[redacted]	[redacted]
Welding contract	[redacted]	[redacted]	[redacted]
Survey spread	[redacted]	[redacted]	[redacted]
Agency/3rd party procurement	[redacted]	[redacted]	[redacted]
Small fabrications	[redacted]	[redacted]	[redacted]
Reps (QA/safety/onboard) during mobilisation	[redacted]	[redacted]	[redacted]
Deck winches	[redacted]	[redacted]	[redacted]
Total	[redacted]		

7.31 Many of the above costs are estimates for contracts that have not yet been placed and as such the Developer is unable to provide any further support to substantiate these costs at this time.

OTHER OFFSHORE SUBSTATION COSTS

7.32 [redacted]

7.33 Total unexploded ordnance disposal costs for the project amount to £[redacted][20]. The Developer has explained that the identification and disposal work has developed as the investigations have progressed. The estimated cost of the project can largely be reconciled to specific invoices[21]. Due to the nature of this work, it was not possible to identify the contractual costs up-front. It is anticipated that the Transmission Assets are 10% of the total seabed associated with the project and therefore, 10% of this total cost (£[redacted]) has been included in the CAT.

7.34 Boulder clearance costs of £[redacted] are included within the CAT. The calculation of the OFTO amount has been provided in a detailed spreadsheet[22]. The Developer has explained that the boulder clearance costs are similar to the unexploded ordnance disposal costs, which are not contracted on a 'lump sum' basis, but instead, are invoiced on a time and materials basis as works have progressed.

[20] [redacted]

[21] 2.14_Finance Sheet AB - UXO Survey & Clearance Costs

[22] 2.14_Finance Sheet AE - Boulder Clearance Costs Spreadsheet

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CONCLUSION

7.35 We have proposed an adjustment to reduce the cost of the Transmission Assets by £[redacted] (paragraph 7.24) in respect of offshore substation costs.

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8 SUBMARINE CABLE SUPPLY AND INSTALLATION

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

CR3 - Submarine cable costs

	Ref	£
Submarine export cable supply		
ABB AB	8.5	[redacted]
[redacted]	8.11	[redacted]
Oceanteam Shipping BV	8.12	[redacted]
		[redacted]
Submarine export cable installation		
Visser & Smit Marine Contracting Limited (VSMC)	8.15	[redacted]
		[redacted]
Other submarine export cable costs		
Pull-in of export cable to substation	8.21	[redacted]
Burial of export cable (including management)	8.22	[redacted]
Jointing costs	0	[redacted]
Landfall duct works (and horizontal directional drilling)	8.26	[redacted]
Cable protection system	8.27	[redacted]
Offshore end temporary lay-down	8.28	[redacted]
Offshore consents costs	8.30	[redacted]
Other costs	8.32	[redacted]
		[redacted]
Total		[redacted]

SUBMARINE EXPORT CABLE SUPPLY

8.2 [redacted] companies were invited to tender for the submarine export cable supply. [redacted] submitted tenders as follows:

i [redacted]

8.3 [redacted]

8.4 A recommendation was made to award the work to ABB AB.

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8.5 Further to the award of the tender, the Developer entered into one major contract with ABB AB in respect of the supply of the submarine export cable. The contract and its subsequent variations are summarised as follows:

ABB AB contract

	Ref	£	% Allocation to OFTO
Original contract			
Submarine export cables supply costs	8.6	[redacted]	100%
Currency hedge	8.7	[redacted]	100%
Metal price hedge	8.8	[redacted]	100%
		[redacted]	
Subsequent variation orders			
V001/004 - various	8.9	[redacted]	100%
V005 - 50m of test cable	8.9	[redacted]	100%
V006 - delivery and cutting of 5m (from 50m test cable)	8.9	[redacted]	100%
V002 - storage of cable in Karlskrona	8.9	[redacted]	100%
WT Henley Limited - pulling heads	8.9	[redacted]	100%
Proposed variation orders	8.10	[redacted]	100%
		[redacted]	
Total		[redacted]	

8.6 We have agreed the cost to the contract dated 23 December 2011 of £[redacted]. The Developer has explained that ABB AB has hedged its currency and metal price risk, leading to a revised (fixed) contract price of £[redacted].

8.7 The hedged currency rates are at $[redacted]:[redacted] SEK and £[redacted]:[redacted] SEK. The original quoted values were $[redacted]:[redacted] SEK and £[redacted]:[redacted] SEK. This led to an overall increase in the contract price of £[redacted].

8.8 [redacted]

8.9 A number of further variation orders have been made, for individually small amounts. A detailed spreadsheet has been provided breaking the cost into component parts[23].

8.10 [redacted]

8.11 [redacted]

[23] 2.14_Finance Sheet J - Offshore Export Cable Supply Costs Spreadsheet

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8.12 The Developer entered into a contract with [redacted] in respect of export cable storage costs. A total of £[redacted] is included within the CAT in relation to the Transmission Assets. This has been agreed to the contract dated 30 December 2013 and supporting workings[24]. The largest portion of the cost, £[redacted], relates to storage from November 2013 to November 2015 inclusive. Ofgem may wish to engage its technical consultant to comment upon whether two years' storage costs are reasonable. The first 12 months of storage are at a rate of £[redacted] per calendar month (November 2013 to October 2014). Thereafter, the rate [redacted] to £[redacted] per calendar month for the 13 months to November 2015. The remaining £[redacted] relates to the cost of moving cable from the vessel to the storage area, removing the cable end cap and Optical Time Domain Reflectometry (OTDR) testing and the sealing of the cable with an end cap.

SUBMARINE EXPORT CABLE INSTALLATION

8.13 Three companies were invited to tender for the submarine export cable installation. All three submitted tenders as follows:

i [redacted]

8.14 A recommendation was made to award the work to VSMC. [redacted]

8.15 Further to the award of the tender, the Developer entered into one major contract with VSMC in respect of the installation of the submarine export cable. Total VSMC contract costs included within the CAT in relation to the submarine export cable are £[redacted][25].

[24] 2.1.4_Finance Sheet K - Export Cable Temporary Storage Costs Spreadsheet

[25] 2.14_Finance Sheet I, Row 240

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8.16 The contract and its subsequent variations is summarised as follows:

Visser Smit Marine Contracting Limited contract

	Ref	£	% Allocation to OFTO
Original contract			
Temporary cable storage		[redacted]	100%
Dredging		[redacted]	100%
Mobilisation		[redacted]	100%
Enabling works		[redacted]	100%
Installation		[redacted]	100%
Miscellaneous		[redacted]	100%
	8.17	[redacted]	
Subsequent costs			
Variation order V001 - HDPE Duct Extension	8.18	[redacted]	100%
Allowance for post-lay survey	8.19	[redacted]	100%
Unidentified costs	8.20	[redacted]	100%
		[redacted]	
Total		[redacted]	

8.17 We have agreed the cost of the contract dated 30 May 2013 of £[redacted]. The cost is 100% attributable to the Transmission Assets. Ofgem may wish to engage its technical adviser to consider why there is such a large difference between the tender amount, and the original contract value, and such large subsequent variations.

8.18 A subsequent variation order, V001, was agreed in respect of a HDPE Duct Extension dated 22 July 2013 for £[redacted].

8.19 A provision of approximately £[redacted] has been included within the CAT relating to VSMC contract costs for a post-lay survey. The estimate has been based on the judgement of the export cable laying team. The work is due to take place in autumn 2014.

[26] Immaterial difference to the cost assessment template of £20 not investigated further as the VSMC contract costs agree in total.

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8.20 We have been unable to find support by way of a contract or variation order for the remaining costs of £[redacted]. The Developer has explained that the actual sum invoiced (as per a screenshot from SAP) has been agreed to the CAT[27]. We recommend that Ofgem discuss this matter further with the Developer. Currently, we do not believe this amount to have been adequately supported by documentation, and therefore, propose an adjustment to the CAT.

OTHER SUBMARINE EXPORT CABLE COSTS

8.21 It is estimated that it will take 10 days to pull-in the export cable to the substation, at a cost of £[redacted] per day. A total of £[redacted] has therefore been included within the CAT.

8.22 A total of £[redacted] has been included in respect of the burial of export cable. This is part of a contract with [redacted]. A detailed spreadsheet has been provided[28] giving the breakdown as follows:

Burial of export cable

	£	% Allocation to OFTO
Installation		
Pre-trench survey	[redacted]	100%
Trenching (100m/h)	[redacted]	100%
Post-trenching survey	[redacted]	100%
Ad-hoc WoW	[redacted]	100%
Fuel and lube consumption		
Transit to site	[redacted]	100%
Installation and WoW	[redacted]	100%
Transit from site (40 t/day)	[redacted]	100%
	[redacted]	
Project management and burial tool optimisation	[redacted]	10%
Total	[redacted]	

[27] 2.14_Finance Sheet Li - VSMC Costs

[28] 2.14_Finance Sheet M - Offshore Export Cable Burial Costs Spreadsheet

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8.23 The CAT includes a total of £[redacted] in respect of jointing costs. A detailed spreadsheet has been provided giving the following breakdown:

Jointing costs

	Ref	£	% Allocation to OFTO
HV Services hire rate	8.25	[redacted]	10%
Work and testing for each 132kV termination		[redacted]	100%
Project management, engineering etc		[redacted]	10%
Rack per cable		[redacted]	100%
132kV HV Termination/jointer (extra days)		[redacted]	100%
On-site health and safety advisor		[redacted]	10%
Total		[redacted]	

8.24 With the exception of the HV Services hire rate, all costs above have been agreed to the contract dated 15 January 2014 with [redacted][29].

8.25 The costs of £[redacted] in relation to HV Services hire rate have not been agreed to the contract. Rather, the spreadsheet provided by the Developer notes that the cost has been derived from [redacted][30]. This schedule shows the daily rate and the estimated number of days for each of the hire rates to arrive at an estimated cost of £[redacted]. It is anticipated that 10% of these labour-related costs are attributable to the Transmission Assets, in line with the proportion of the seabed that is occupied by the Transmission Assets, and consequently, an amount of £[redacted] is included within the CAT.

8.26 On 28 October 2011, the Developer entered into an agreement with [redacted] for landfall duct works (and horizontal directional drilling) for the sum of £[redacted][31]. Further variations, for individually insignificant amounts were subsequently agreed totalling £[redacted]. We have therefore been able to agree a total of £[redacted], as included within the CAT.

[29] 2.1.1_[redacted], Volume III Pricing Schedule

[30] 3.1.1_Ex-Ante Audit Questions batch 2 Q16 HTB Cable Jointing Costs ([redacted] (January 2014))

[31] [redacted]

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8.27 A total of £[redacted] has been included in the CAT in respect of cable protection system. Only 10% of the total cost is included as attributable to the Transmission Assets. The total cost comprises the original contract with [redacted] of £[redacted][32] plus subsequent variation orders. A detailed spreadsheet breaking down the variation orders has been provided[33]. The total cost amounts to £[redacted], of which 10% (£[redacted]) is attributable to the Transmission Assets.

8.28 A spreadsheet has been provided giving a detailed breakdown of expected future variations, which total £[redacted][34]. These are in respect of temporary lay down costs. The breakdown of these costs are as follows:

Temporary Lay-Down Costs Spreadsheet

	£	% Allocation to OFTO
Renewal ends using Atlantic Carrier (if OSP)	[redacted]	100%
Lay down of cables in pre-cut trench - stemat	[redacted]	100%
Filter/Gabion bag placement	[redacted]	100%
AHT investigation - month (may use Array Cable)	[redacted]	100%
Survey during trenching - tethra spread	[redacted]	100%
Other	[redacted]	100%
Total	[redacted]	

8.29 The Developer has estimated these amounts based on estimated rates with Fugro.

[32] [redacted]

[33] 2.14_Finance Sheet Q - Cable Protection System Costs Spreadsheet

[34] 2.14_Finance Sheet L - Offshore Export Cable Temporary Lay-Down Costs Spreadsheet

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8.30 A total of £[redacted] has been included within the CAT in relation to offshore consents costs[35]. Examples of OFTO-related offshore consent costs include noise, ornithology and fish surveys. The total is broken down as follows:

Offshore consents costs

Supplier	Estimated cost to complete £	OFTO %	Cost template £
Wessex Archaeology	[redacted]	10%	[redacted]
Wessex Archaeology	[redacted]	10%	[redacted]
PMSL	[redacted]	10%	[redacted]
PMSL	[redacted]	10%	[redacted]
PMSL	[redacted]	10%	[redacted]
PMSL	[redacted]	10%	[redacted]
Natural Power	[redacted]	10%	[redacted]
Natural Power	[redacted]	10%	[redacted]
Ordtek	[redacted]	10%	[redacted]
Gardline	[redacted]	10%	[redacted]
Gardline	[redacted]	10%	[redacted]
	[redacted]		[redacted]
PMSL	[redacted]	100%	[redacted]
Total			[redacted]

8.31 As can be seen from the above table, all amounts are individually beneath £[redacted], and therefore have not been considered further.

8.32 Other costs, totalling £[redacted], includes £[redacted] in relation to consultancy services from Geomarine Limited and £[redacted][36] in relation to [redacted]. As all amounts are individually less than £[redacted] in value we have not sought further explanations.

CONCLUSION

8.33 We propose an adjustment to submarine cable supply and installation costs in respect of costs incurred with Visser & Smit of £[redacted], for which we are unable to find supporting contracts or variation orders. We do not propose any other adjustments in respect of submarine cable supply and installation.

[35] 2.14_Finance Sheet U - Planning Consent Costs Spreadsheet

[36] [redacted]

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9 ONSHORE CABLE SUPPLY AND INSTALLATION

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

CR4 - Onshore cable costs

	Ref	£
Onshore export cable supply and installation		
Balfour Beatty Group Limited (Balfour Beatty)	9.4	[redacted]
		[redacted]
Other onshore export cable costs		
Cathodic protection surveys	9.11	[redacted]
Land agreements payments	9.12	[redacted]
Landowner compensation	9.13	[redacted]
Construction works compound payments	9.14	[redacted]
Legal fees (E.ON)	9.15	[redacted]
Land agent fees (E.ON)	9.16	[redacted]
Legal fees (third parties)	9.17	[redacted]
Land agent fees (third parties)	9.18	[redacted]
Onshore consents works	9.19	[redacted]
Other costs		[redacted]
		[redacted]
Total		[redacted]

ONSHORE EXPORT CABLE SUPPLY AND INSTALLATION

9.2 Three companies were invited to tender for the submarine export cable installation. All three submitted tenders as follows:

i [redacted]

9.3 The tender evaluation documentation shows that the basis for recommendation was to identify the most economically advantageous compliant tender. [redacted]

9.4 Balfour Beatty was awarded the contract, [redacted]

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9.5 Further to the award of the tender, the Developer entered into one major contract with Balfour Beatty in respect of the supply and installation of the onshore export cable. The contract and its subsequent variations can be summarised as follows:

Balfour Beatty contract

	Ref	£	% Allocation to OFTO
Original contract			
Onshore export cables supply costs		[redacted]	100%
Onshore cable installation costs		[redacted]	100%
Onshore export cables management and other costs		[redacted]	100%
	9.6	[redacted]	
Subsequent variation orders			
Variation order 001 - pre-construction land drainage (initial payment)	9.8(i)	[redacted]	100%
Variation order 002 - INEOS pipeline work	9.8(ii)	[redacted]	100%
Variation order 003 - supply of defibrillators and associated training	9.8(iii)	[redacted]	100%
Variation order 004 - contaminated water (investigation and directional drill)	9.8(iv)	[redacted]	100%
Variation order 005 - pre-construction land drainage (final payment)	9.8(v)	[redacted]	100%
Proposed variation orders	9.9	[redacted]	100%
		[redacted]	
Total		[redacted]	

9.6 We have agreed the cost of the contract dated 5 April 2012 of £[redacted][37]. The cost is 100% attributable to the Transmission Assets.

[37] 2.1.1_Balfour Beatty Contract COMPLETE DOCUMENT.pdf, page 494 of 506

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9.7 Schedule 1.1 of the contract sets out the segregation of prices. The amounts within this schedule have been individually agreed to the CAT, and tie into the table at paragraph 9.4, as set out in the table below:

Balfour Beatty – Original contract

	£
132kV cable cost (material)	[redacted]
132kV cable accessories cost (material)	[redacted]
Fibre optic cable cost (material)	[redacted]
Total onshore export cable supply costs	[redacted]
Cable installation costs	[redacted]
Directional drilling cost	[redacted]
Total onshore cable installation costs	[redacted]
Project management	[redacted]
Total commissioning cost	[redacted]
Cable system design	[redacted]
Other costs – contractor to specify	[redacted]
Total onshore export cables management and other costs	[redacted]
Total	[redacted]

9.8 Five variations have been made to the original contract. All five of the below variations have been agreed to the relevant variation order:

i [redacted]

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9.9 It is anticipated that there will be further variation orders of £[redacted] in relation to this contract as follows:

Proposed variation orders

	Ref	£	% Allocation to OFTO
Proposed variation orders			
Retest - whole onshore and offshore export cable	9.10	[redacted]	100%
Testing of the onshore export cable	9.10	[redacted]	100%
Jointing of offshore and onshore cables	9.10	[redacted]	100%
Additional directional drills, drain crossings		[redacted]	100%
Additional funds for pre-post land drainage		[redacted]	100%
CPA adjustment due to rescheduling of programme activities		[redacted]	100%
Option TJ bay to HDD excavate to be paid upon completion of marine export cable		[redacted]	100%
Premium time working		[redacted]	100%
Supervision of Thomson Ecology		[redacted]	100%
Total		[redacted]	

9.10 The Developer has explained that the [redacted] proposed variation orders exceeding £100,000 all relate to cable jointing and testing work that was due to arise between August and November 2014. There is no further supporting information currently available.

OTHER ONSHORE EXPORT CABLE COSTS

9.11 On 24 August 2012 the Developer entered into an agreement for baseline data logging with [redacted] for a total of £[redacted]. This was for the baseline survey, a further survey will be required post energisation and it is anticipated that the cost will be the same as for the baseline survey. A total cost of £[redacted] is therefore included within the CAT.

9.12 The Developer has provided a detailed spreadsheet[38] of the landowner payments for entry, accommodation works and completion to sites between Saltend and Easington. This shows a breakdown of entry payments totalling £[redacted], accommodation works of £[redacted] and completion payments of £[redacted]. The amounts are included individually within the CAT, and total £[redacted].

9.12.1 [redacted]

[38] 2.14_Finance Sheet Y

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9.12.2 The completion payments include an estimated £[redacted] of signing payments that are proposed to be made in order to facilitate agreement of the landowners to refinements of the lease agreements (as these leases were signed before the OFTO regime was introduced, amendments are needed to capture the likely requirements of the incoming OFTO and make it possible/easier to transfer these to the OFTO), and timely completion of the leases.

9.13 Landowner compensation in relation to crop losses until August 2017 has been provided within the CAT at [redacted]. The Developer has provided a detailed spreadsheet to support this cost, [redacted].

9.14 [redacted]

9.15 A total of £[redacted] has been included in the CAT in relation to the Developer's legal costs. Of this, £[redacted] has already been incurred, and a breakdown has been provided by invoice[39]. The remaining £[redacted] has been provided for further payments to completion of leases and the project. This comprises an estimate of £[redacted] per calendar month for March 2014 and the four month period of May to August 2014, ie a total of five months, being £[redacted] and lease completion costs estimated at £[redacted] per landowner for 55 landowners, plus disbursements of £[redacted]; a total of £[redacted].

9.16 Developer's land agent fees of £[redacted] have been included in the CAT. A large portion has already been incurred, and a detailed listing by invoice has been provided[40]. The total is split between land agent costs and agricultural liaison officer costs as follows:

Land agent fees

	Incurred £	Ref	Projected £	Total £
Land agent costs	[redacted]	9.16.1	[redacted]	[redacted]
Agricultural Liaison Officer (ALO) costs	[redacted]	9.16.2	[redacted]	[redacted]
Total	[redacted]		[redacted]	[redacted]

[39] 2.14_Finance Sheet Zii - E.ON Legal Costs Spreadsheet

[40] 2.14_Finance Sheet Ziii - E.ON Land Agent Costs Spreadsheet

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9.16.1 In respect of land agent work, the six months of April to September 2014 have been estimated at £[redacted] per month (£[redacted] in total). Costs have previously been incurred, on average, at around £[redacted] per calendar month and therefore, the estimate would appear to be reasonable. In addition, crop settlement works from April to September 2014 have been estimated at £[redacted] per calendar month (£[redacted] in total).

9.16.2 Further estimated ALO costs are projected for April to September 2014 at £[redacted] per calendar month (£[redacted]). The average monthly charge incurred in prior periods was £[redacted] and therefore, the estimate would appear to be in line with previously incurred costs.

9.17 Third party legal fees totalling £[redacted] have been included in the CAT. This comprises an estimate of £[redacted] in relation to anticipated miscellaneous third party legal costs. A detailed breakdown has been provided[41]. A further £[redacted] has been estimated in respect of third party legal costs during lease completion. This has been estimated as £[redacted] (inc VAT) per landowner, for [redacted] landowners.

9.18 The CAT includes £[redacted] in respect of third party agents' fees. A detailed spreadsheet has been provided, breaking these down by each landowner[42]. The agents' fees have been provided in full for 2012 and 2013 and at 50% of the amount of the route completed thereafter.

9.19 Onshore consents works of £[redacted] are included within the CAT. A total of £[redacted] has been included for [redacted] in relation to preconstruction ecology survey, GCN and badger licence applications, ecology watching brief and destructive searches, badger sett closure, GCN fencing in various cable sections, marsh harrier surveys, badger surveys, GIS mapping of Ecology Masterplan and reporting. A further amount of £[redacted] has been included in relation to onshore trial trenching and mitigation, archaeological watching brief, excavation, reporting and publication with [redacted]. A detailed spreadsheet has been provided showing the total payments made and those forecast[43].

CONCLUSION

9.20 No adjustments are proposed in respect of onshore cable supply and installation costs.

[41] 2.14_Finance Sheet Z - Third Party Legal Costs Spreadsheet

[42] 2.14_Finance Sheet X - Landowner Crop Loss Costs Spreadsheet

[43] 2.14_Finance Sheet U - Planning Consent Costs Spreadsheet

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10 ONSHORE SUBSTATION COSTS

10.1 The onshore substation costs are comprised as follows:

CR5 - Onshore substation costs

	Ref	£
Onshore substation supply and installation		
CG Power	10.3	[redacted]
Other costs	10.9	[redacted]
		[redacted]
Substation land purchase		
Payment of substation landowner costs	10.10	[redacted]
Purchase price	10.11	[redacted]
Stamp duty	10.12	[redacted]
Songbird nursery fees	10.14	[redacted]
Other costs	10.15	[redacted]
		[redacted]
Total		[redacted]

ONSHORE SUBSTATION SUPPLY AND INSTALLATION

10.2 The onshore substation supply and installation by CG Power falls under the tender already discussed at paragraph 7.2.

10.3 As explained at paragraph 7.5, the Developer entered into a contract with CG Power in respect of the supply and installation of the offshore and onshore substations. The contract and its subsequent variations can be summarised as follows:

CG Power

	Ref	£	% Allocation to OFTO
Original contract			
Mechanical & electrical equipment (exc. Harmonic & Reactive)		[redacted]	As per contract
Civil engineering		[redacted]	As per contract
Buildings		[redacted]	As per contract
Other costs		[redacted]	As per contract
	10.5	[redacted]	
Subsequent variation orders			
CG Power Variation Order VO002: Reactor System Variation	10.7	[redacted]	100%
CG Power Variation Order VO009: Works ref. Fault Level Testing	10.7	[redacted]	100%
Proposed Variation Order: Nursery Building Demolition	10.8	[redacted]	100%
		[redacted]	
Total		[redacted]	

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10.4 The contract's schedules split out the costs between the substations, with costs for the onshore substation totalling £[redacted]. These have been further broken down by the supplier between transmission and generation assets.

10.5 The total cost of £[redacted] in relation to Transmission Assets has been agreed to the contract dated 22 December 2011[44]. The reactive substation cost of £[redacted], has been shown separately within the CAT, see **Section 11**.

10.6 As per the table in paragraph 10.3, the Transmission Assets costs are broken down into mechanical and electrical equipment, civil engineering, buildings and other costs. Civil engineering costs have been identified by CG Power as being related to Transmission Assets civil works, earthing, foundations, site establishment and lightening protection, whilst building costs include building fittings such as toilets, fire protection, intruder alarm equipment and electrical cubicles.

10.7 [redacted]

10.8 The original contract contained a summary of possible extra works. The demolition of the nursery building, including car park, and landscaping of the area was included at £[redacted]. A further variation is proposed in order to undertake this work. We have agreed the cost to the original contract.

10.9 Other costs of £[redacted] relate, in part, to substation services and other miscellaneous costs totalling £[redacted]. A total of £[redacted] relates to protection alarms and £[redacted] in relation to *"op stripping scheme to comply with NG revised offer[45]"*. All items are individually less than £[redacted] in value and therefore have not been considered further.

SUBSTATION LAND PURCHASE

10.10 On 25 February 2009, the Developer entered into an option agreement to grant a lease relating to the Land at Staithes Road for a total of £[redacted][46]. A total of £[redacted] ([redacted] %) has been included in the CAT in relation to this option agreement, in accordance with the amount attributable to the Transmission Assets.

[44] 2.14 Finance Sheet Cii - CG Power Onshore Cost Breakdown Spreadsheet

[45] Ofgem Cost Assessment Template - 140611 - CR5 - Onshore Substation

[46] Option Agreement to Grant Lease dated 25 February 2009, page 8

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10.11 The Land at Staithes Road was later purchased for a total of £[redacted][47], and thus the cost of £[redacted] ([redacted] %) has been included in the CAT in relation to the purchase of the land.

10.12 An amount of £[redacted] was paid to the Developer's solicitor to cover the Stamp Duty Land Tax (SDLT), of which 98% (£[redacted]) has been included with the CAT. It was later determined that only £[redacted] SDLT was payable on the transaction[48] and accordingly, 98% of this, or £[redacted] ought to be included within the CAT as relating to the Transmission Assets.

10.13 The E.ON Control Building Compound occupies 0.17 acres of the 8.49 acre site, or 2%, and thus 98% of the land purchase costs have been attributed to the Transmission Assets.

10.14 [redacted]

10.15 Other costs, totalling £[redacted] comprise of £[redacted] diesel generator costs, including hire and fuel, £[redacted] [redacted] stamp duty costs and £[redacted] land registry fees. As all items are individually less than £[redacted] in value they have not been considered further.

CONCLUSION

10.16 No adjustments are proposed in respect of onshore substation costs.

[47] Deed of Variation dated 23 December 2010, page 4

[48] Land Transaction Return

[49] Option and Agreement dated 23 December 2010, pages 1 and 2

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11 REACTIVE SUBSTATION

11.1 The reactive substation costs are comprised as follows:

CR6 - Reactive substation costs

	Ref	£
Reactive compensation equipment		
CG Power - harmonic and reactive equipment	11.4	[redacted]
Total		[redacted]

11.2 The onshore substation supply and installation by CG Power falls under the tender already discussed at paragraph 7.2.

11.3 As explained at paragraph 7.5, the Developer entered into a contract with CG Power in respect of the supply and installation of the offshore and onshore substations, including harmonic and reactive equipment.

11.4 The total cost of the harmonic and reactive equipment of £[redacted] has been agreed to the contract dated 22 December 2011[50].

11.5 There are no variations or estimated costs to complete.

CONCLUSION

11.6 No adjustments are proposed in respect of reactive substation costs.

[50] 2.14 Finance Sheet Cii - CG Power Onshore Cost Breakdown Spreadsheet

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12 CONNECTION CONTRACT COSTS

12.1 The connection contract costs are comprised as follows:

CR7 - Connection contract costs

	Ref	£
NGT Unlicensed works		
NGT Unlicensed works agreement	12.2	[redacted]
[redacted]	12.3	[redacted]
Total		[redacted]

NGT UNLICENSED WORKS

12.2 On 24 August 2011 the Developer entered into an agreement with National Grid Electricity Transmission plc (NGET) for works in relation to connection of the onshore substation with the National Grid. The amount of £[redacted] has been agreed to the contract[51].

12.3 [redacted]

12.4 [redacted]

CONCLUSION

12.5 No adjustments are proposed in respect of connection contract costs at present. We note that the anticipated cost of the delay claims is an estimate, and recommend that the provision is revisited when and if the claim is submitted.

[51] 2.1.1_NGT Contract 2011_08_24, page 2

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13 GENERAL DEVELOPMENT COSTS

13.1 General development costs are comprised as follows:

CR8 - Other costs

	Ref	£
Internal project management costs	13.2	[redacted]
Contingency	13.10	[redacted]
Development costs	13.17	[redacted]
Transaction costs	13.32	[redacted]
Insurance costs	13.37	[redacted]
Acquisition costs	13.44	[redacted]
Marine Warranty Surveyor Costs	13.45	[redacted]
Total		[redacted]

INTERNAL PROJECT MANAGEMENT COSTS

13.2 Internal project management costs are included within the CAT as follows:

Internal project management costs

	Ref	£	% Allocation to OFTO
E.ON staff and contractor costs (and T&S)	13.3	[redacted]	Various
Logistics, equipment and other costs	13.7	[redacted]	25%
Health and safety consultants	13.8	[redacted]	25%
Other costs	13.9	[redacted]	Various
Total shown in CAT		[redacted]	

13.3 E.ON staff and contractor costs of £[redacted] are set out in a detailed spreadsheet[52] provided by the Developer.

[52] 140605 Finance Sheet AA - Staff & Contractor Costs (redacted) (part of 2.14_Finance Sheet AA - Staff & Contractor costs (rev2)

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13.4 Project Management costs have been estimated by the Developer within the spreadsheet using the following approach:

ii team members – 92 staff and contractor roles that have been involved in establishing the Transmission Assets have been listed;

iii staff record their time on a monthly basis and allocate whether the work relates to the Transmission Assets. Contractors provide invoices;

iv for each year of construction (2011 – 2015) the time that each person has been involved in the project is logged, to give a total time spent;

v for staff members an inclusive annual employment cost has been applied. These figures are sourced from the Medium Term Plan (MTP) used for internal budgeting. These costs include salary and employment costs together with facility, travel and subsistence costs;

vi for contract and agency staff the day rates have been provided as per their contracts. Where the contractor is involved in work away from a base location, an estimate of [redacted]% is added for travel and subsistence costs. In addition, on a day rate basis the costs for provision of facilities have also been added where appropriate;

vii for each role a percentage has been applied to the total time spent, the percentage varying in value to estimate the time spent for each role in project managing the delivery of the Transmission Assets; and

viii if actual costs recorded are known, as per the relevant purchase order, these are used rather than the estimated forecast cost. Of the total costs of £[redacted], £[redacted] relates to actual costs incurred as per the relevant purchase order.

13.5 [redacted]

13.6 Although we have been able to review the mathematical accuracy of the updated spreadsheet and consider that the rates appear to be reasonable, we recommend that Ofgem's technical advisors review the schedule in order to assess whether the amount of time spent and rates are efficiently incurred and that the percentages allocated to Transmission Assets are reasonable.

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13.7 A total of £[redacted] has been included in the CAT in respect of logistics, equipment and other costs. The Developer anticipates that 25% of these costs are attributable to the Transmission Assets. This is based upon the cost of the Transmission Assets as a percentage of the total project costs. The total of £[redacted] (100%) can be broken down as follows:

i [redacted]

13.8 Health and safety consultants' costs of £[redacted] are included within the CAT. The contract has been provided, and shows hourly rates for the different levels of consultant/adviser. The contract is 25% attributable to the Transmission Assets, in line with the ratio of the Transmission Asset cost to the total project costs. The total cost for the project is calculated on a time and materials basis, as opposed to a pre-agreed lump sum, and is based upon the consultant's estimated staff and travel and subsistence costs during the period of their work (March 2012 to September 2015 inclusive).

13.9 Other costs, totalling £[redacted], include £[redacted] (25% attributable to the Transmission Assets) in respect of health and safety video filming costs, £[redacted] (25% attributable to the Transmission Assets) in respect of public relations costs and £[redacted] (10% attributable to the Transmission Assets) in respect of the community fund. As all amounts are individually equal to or less than £[redacted] in value we have not sought further explanations.

CONTINGENCY

13.10 Contingency, totalled at £[redacted] (approximately 4% of the pre-contingency capital costs) has been calculated by reference to the risk register. The main contingency is in relation to the jacket foundation (£[redacted]), with other contingencies being recorded in relation to OFTO asset risk (£[redacted]) and commercial risk (£[redacted]).

13.11 [redacted]

13.12 [redacted]

13.13 [redacted]

OFTO Asset risk

13.14 The total contingency of £[redacted] included within the CAT in relation to asset risk, is set out in the table below:

[Table redacted]

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13.15 [redacted]

Commercial risk

13.16 A detailed spreadsheet has been provided by the Developer in respect of the £[redacted] of contingencies in relation to commercial risks. The main risk, with a contingency provision of £[redacted], is that the OFTO process fails to recover the costs for Capital and/or Transmission. To mitigate this risk the Developer actively manages and monitors the OFTO process. We do not consider this to be an appropriate contingency to include within the value of the Transmission Assets and propose an adjustment to the CAT to release this contingency. No further verification work has been performed on the other five commercial risk contingencies, which total £[redacted].

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DEVELOPMENT COSTS

13.17 Development costs of £[redacted] relating to all activities in the initial commencement of the project are included within the CAT as follows:

Development costs

	Ref	£	% Allocation to OFTO	£
Salaries and staff costs				
Salary costs (2009 – 2011)	13.19	[redacted]	25%	[redacted]
Project management - internal	13.20	[redacted]	25%	[redacted]
Project management - external	13.20	[redacted]	25%	[redacted]
Total		[redacted]		[redacted]
Environmental and consents				
Planning consultancy	13.24	[redacted]	25%	[redacted]
Environmental surveys	13.25	[redacted]	25%	[redacted]
Other costs		[redacted]	25%	[redacted]
Total		[redacted]		[redacted]
Engineering and site investigations				
Offshore site investigation	13.27.1	[redacted]	10%	[redacted]
Onshore site investigations	13.27.2	[redacted]	100%	[redacted]
Offshore foundation design work	13.27.3	[redacted]	10%	[redacted]
Offshore diving and UXO work	13.27.4	[redacted]	10%	[redacted]
Onshore and electrical design works	13.27.5	[redacted]	100%	[redacted]
Offshore cable design works		[redacted]	25%	[redacted]
Total		[redacted]		[redacted]
Land agreements and grid connections				
Land agreements	13.29.1	[redacted]	100%	[redacted]
Land agent services	13.29.2	[redacted]	100%	[redacted]
Grid connection costs	13.29.3	[redacted]	100%	[redacted]
Land legal support	13.29.4	[redacted]	100%	[redacted]
Total		[redacted]		[redacted]
Other development costs				
Capitalised salaries	13.30	[redacted]	25%	[redacted]
Other costs	13.31	[redacted]	25%	[redacted]
Total		[redacted]		[redacted]
Total				[redacted]

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Salaries and staff costs

13.18 Of the total salaries and staff costs of £[redacted], £[redacted] (25%) has been allocated to the Transmission Assets.

13.19 Within the above costs are salaries totalling £[redacted], of which 25% (£[redacted]) has been allocated to the Transmission Assets. The Developer has provided a breakdown of salaries by year being £[redacted], £[redacted] and £[redacted] in 2009, 2010 and 2011 respectively. The 2011 salaries are an estimated cost.

13.20 For the remaining costs under this heading, the Developer has provided a detailed breakdown of the internal project management costs of £[redacted] (25% - £[redacted]) and external project management costs of £[redacted] (25% - £[redacted]) on an invoice by invoice basis[53]. The details provided for each invoice includes date, supplier name, a description of the work carried out and the amount. All amounts have been paid.

13.21 The total salaries and staff costs of £[redacted] (as included in the table in paragraph 13.17), therefore comprise salaries of £[redacted] (as per paragraph 13.19) and internal project management costs of £[redacted] and external project management costs of £[redacted] (as per paragraph 13.20).

Environmental and consents

13.22 Of the total environmental and consents costs, £[redacted] (25%) has been allocated to the Transmission Assets.

13.23 The Developer has provided a detailed breakdown of the costs on an invoice by invoice basis[54]. The details provided for each invoice include date, supplier name, a description of the work carried out and the amount. All amounts have been paid.

13.24 Of the planning consultancy costs of £[redacted], £[redacted] (25%) has been allocated to the Transmission Assets in relation. The majority of this cost relates to one invoice of £[redacted] dated 26 September 2008 from [redacted] for "*Humber Environmental Support*".

13.25 Environmental surveys totalling £[redacted] (of which £[redacted] (25%) has been allocated to the Transmission Assets) include an onshore archaeology survey (£[redacted]), a protected species survey (£[redacted]) and IECS bird surveys (£[redacted]).

[53] 2.14_Finance Sheet Vi - Development (Project Management) Costs Spreadsheet

[54] 2.14_Finance Sheet Viii - Development (Environmental Consents) Costs Spreadsheet

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Engineering and site investigations

13.26 Total engineering and design costs of £[redacted] have been allocated to the Transmission Assets at various percentages depending on how much of the cost is attributable to the transmission assets, as set out in the table at paragraph 13.17 above, to give an amount of £[redacted] as per the CAT.

13.27 The Developer has provided a detailed breakdown of the costs on an invoice by invoice basis[55]. The details provided for each invoice includes date, supplier name, a description of the work carried out and the amount.

13.27.1 Offshore site investigation costs totalling £[redacted] have been allocated to the Transmission Assets at a rate of 10% (£[redacted]). A breakdown by invoice has been provided for £[redacted] of the total offshore site investigation costs which have been paid. The two main payments were £[redacted] for an invoice from [redacted] dated 2 November 2011 (no description) and £[redacted] for an invoice from [redacted] dated 2 June 2011[56] for "*Site investigation*". The remaining £[redacted] relates to £[redacted] of further amounts to be paid and £[redacted] of further work to be completed. No further evidence has been provided in relation to these amounts.

13.27.2 Onshore site investigation costs of £[redacted] have been allocated to the Transmission Assets. A breakdown of the six invoices making up this total has been provided, all of which have been paid. The largest invoice, dated 31 March 2011, is for £[redacted] from [redacted] for "*onshore site investigation*".

13.27.3 Offshore foundation design work costs of £[redacted] have been allocated to the Transmission Assets at the rate of 10% (£[redacted]). The amount is made up of 11 invoices from [redacted], the largest being £[redacted] for "*WTG and substation foundation design*". There are also three individual payments of £[redacted] (totalling £[redacted]) for "*Humber SI Supervision.*"

13.27.4 Offshore diving and UXO (Unexploded Ordnance) costs of £[redacted] have been allocated to the Transmission Assets at a rate of 10% (£[redacted]). The majority of this balance is made up of three individual payments to [redacted], which total £[redacted] (no description).

[55] 2.14_Finance Sheet Vii - Development (Engineering & Site Investigations) Costs Spreadsheet

[56] [redacted]

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13.27.5 Onshore design works of £[redacted] and electrical design works of £[redacted] (totalling £[redacted]) have been 100% allocated to the Transmission Assets.

Land agreements and grid connections

13.28 Land agreement and grid connection costs of £[redacted] have been allocated to the Transmission Assets.

13.29 The Developer has provided a detailed breakdown of the costs on an invoice by invoice basis[57]. The details provided for each invoice include date, supplier name, a description of the work carried out and the amount.

13.29.1 Of the £[redacted] of costs in relation to Land agreements, £[redacted] has been paid, £[redacted] of which is in relation to [redacted] invoices for "*Humber Gateway Option Extension*" legal fees and bonus payments. The remaining £[redacted] is in relation to further work to be completed.

13.29.2 All of the costs in relation to land agent services of £[redacted] relate to invoices from [redacted] and comprise of payments already made totalling £[redacted], £[redacted] in relation to further amounts to be paid and £[redacted] of further work to be completed.

13.29.3 Grid connection costs total £[redacted] and comprise of four payments made to NGET.

13.29.4 Of the land legal support costs totalling £[redacted], £[redacted] has been paid (including £[redacted] to [redacted]), £[redacted] is in relation to further amounts to be paid and £[redacted] relates to further work to be completed.

Other development costs

13.30 Other development costs total £[redacted] and have been allocated to the Transmission Assets at the rate of 25% (£[redacted]). The majority of this balance (£[redacted]) relates to capitalised salaries of £[redacted]. The Developer has informed us that it has undertaken a detailed exercise[58] and has identified cost records of £[redacted] of clearly labelled salary-related costs, plus a further £[redacted] of development costs that require further analysis in order to identify their salary-related content. Further analysis of these costs will be undertaken prior to the completion of the project.

13.31 The other development costs totalling £[redacted] comprise of insurance (£[redacted]), legal and land agent costs (£[redacted]), conference and event costs (£[redacted]) and miscellaneous costs (£[redacted]).

[57] 2.14_Finance Sheet Viv - Development (Land Agreements & Connection) Costs Spreadsheet

[58] Not seen by Grant Thornton

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TRANSACTION COSTS

13.32 Transaction costs included within the CAT are budgeted costs and can be further broken down as follows:

Transaction costs

	Ref	£
Legal advice		
Pinsent Masons	13.33	[redacted]
Technical advice		
Offshore export cable burial study	13.34	[redacted]
Vendor DD (technical)		[redacted]
Transaction support		
Data room due diligence management		[redacted]
Project qualification costs		
Developer fee (to cover Ofgem's costs associated with running the tender)		[redacted]
Cost of LoC (letter of credit)		[redacted]
Cost assessment		
Developer fee (to cover Ofgem's cost assessment costs such as audits etc)		[redacted]
Contingency (20%)	13.36	[redacted]
Total third party costs		[redacted]
Rechargeable E.ON staff time	13.35	[redacted]
Contingency (20%)	13.36	[redacted]
Total internal costs		[redacted]
Total		[redacted]

13.33 The cost of legal advice from [redacted] has been estimated at £[redacted] relating to monthly invoices. A breakdown of legal advice has been provided[59], showing a range of £[redacted] to £[redacted] estimated time costs. The Developer has explained that this includes the cost of producing and negotiating an Operations and Management (O&M) agreement with the OFTO (should the OFTO wish to progress with its O&M offer). This is not part of the regulated asset sales and as such, the Developer has extracted the estimated £[redacted] from the forecasted legal costs for the OFTO transaction.

[59] 3.1.1_Humber OFTO Legal Costs Breakdown

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13.34 The Developer has explained that the offshore export cable burial study is required by bidders to prove that the cable is buried to the required depth. The information provided by the installation contractor does not give sufficient assurance to an OFTO and their financiers and is therefore unacceptable to them. For this reason, the Developer has to contract for an additional survey purely for the OFTO sale process. This third party survey has not been undertaken and contracts are yet to be placed. It is intended that this will be carried out as part of the mobilisation of a cable vessel to 'pull in' the export cables into the offshore substation. The estimated figure of £[redacted] is an engineer's estimate of this element of work carried out on this basis. It covers the hire of survey equipment, mobilisation of the survey team on the vessel and analysis of the data. If it is not possible to complete the survey in this manner, it will cost considerably more to mobilise a vessel and team to carry out this survey.

13.35 Staff time of £[redacted] is based on [redacted] people over a two year period, covering legal, tax, accounting, commercial, procurement and construction team members logging time on the transaction activity. The staff cost has been agreed to a supporting (redacted) schedule, which for each employee role shows the full time equivalent salary (these figures were sourced from the MTP as explained in paragraph 13.4.v), the number of months and the percentage of time spent on the Transmission Assets. It is outside of our expertise to comment on the reasonableness of salary rates and the amount of time worked on the Transmission Assets. Ofgem may wish to consider appointing their technical experts to gain comfort over the level of staff costs included within the CAT.

13.36 For both third party and internal costs a contingency has been built in to the total budgeted cost at 20% of costs already incurred. This has been based on experience of previous merger and acquisition type transactions. In addition to the survey cost risk (see paragraph 13.34), cost increases are linked to a prolonged transaction timetable, the due diligence requirements of the bidders (additional third party reports on the assets may be required) and greater complications in negotiations with the preferred bidder, increasing legal costs and staff time.

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INSURANCE COSTS

13.37 Insurance costs are included within the CAT as follows:

Insurance costs

	Ref	£	% Allocation to OFTO
Construction All Risks insurance	13.38	[redacted]	Various
Third party liability insurance	0	[redacted]	25%
Vessel charterer's insurance	13.43	[redacted]	100%
Other insurances	13.43	[redacted]	25%
Total		[redacted]	

13.38 The total Construction All Risks (CAR) insurance charge of £[redacted] includes a preliminary CAR policy (£[redacted]), a full policy (£[redacted]) and subsequent amendments (£[redacted]).

13.39 The preliminary CAR insurance policy was agreed for a sum of £[redacted], for the Transmission Assets, which was therefore 100% attributable.

13.40 The Developer entered into a full Offshore Construction and First Operation Policy with [redacted]. The cover is for the period 1 January 2012 to 31 March 2016. The premium is € [redacted][60], on top of which the Developer incurred insurance taxes and €[redacted] for meteorological mast insurance, bringing the total payable to €[redacted], which has been converted to Pounds Sterling at a rate of €[redacted]:£[redacted], to £[redacted]. The OFTO share included within the CAT is 25% (£[redacted]), in line with the value of the Transmission Assets as a proportion of the whole Wind Farm. We note that the Developer has highlighted the actual ratio of direct Transmission Assets costs to the total project costs is 22.2%, but that it has been rounded up to 25% to allow for the project management intensive nature of the Transmission Assets (paragraph 1.13.3). We would not expect insurance costs to be affected by project management and as such, consider that the allocation rate of 22.2% may be appropriate in respect of insurance costs. This would reduce the cost attributable to the Transmission Assets to £[redacted]. We therefore propose an adjustment to reduce the value of the Transmission Assets by £[redacted].

[60] 2.11.1_Insurance - Insurance Policy 120127 - CAR (Updated Document)_HG

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13.41 The subsequent amendments of £[redacted][61] are made up of the following:

13.41.1 Subsequent adjustments of £[redacted] were made to the policy, specifically in relation to the Transmission Assets. The transport of substation deck from Hoboken to Sunderland was endorsed at a cost of £[redacted][62] and storage of substation deck at Sunderland was included at £[redacted][63]. Additional insurance for equipment, of which 5% is attributable to the Transmission Assets was endorsed at £[redacted]. The Transmission Assets share is therefore £[redacted][64]. The cost attributable to the Transmission Assets is insignificant and therefore, no adjustment is proposed in respect of the allocation rate.

13.41.2 The Developer has explained that there is a verbal indication from [redacted] that there will be a 2.5% reduction in cost. This totals £[redacted] for the whole Wind Farm, of which 25% (£[redacted]) relates to the Transmission Assets[65]. The cost attributable to the Transmission Assets is insignificant and therefore, no adjustment is proposed in respect of the allocation rate.

13.41.3 Also included within CAR insurance is the cost of an estimated maximum loss report, 25% (£[redacted]) of which is attributable to the Transmission Assets. The cost attributable to the Transmission Assets is insignificant and therefore, no adjustment is proposed in respect of the allocation rate.

[61] [redacted]

[62] Finance Sheet T - Insurance Costs Spreadsheet

[63] ibid

[64] ibid

[65] ibid

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13.42 The CAT includes an amount of £[redacted] in relation to third party liability insurance, comprising of the following two amounts:

13.42.1 £[redacted] in relation to a third party liability policy with [redacted]. The cost of this policy was €[redacted][66], plus 6% insurance premium tax (€[redacted]). The total amount payable is €[redacted], of which, 25% (€[redacted]) is attributable to the Transmission Assets. The CAT is therefore overstated as the cost has not been translated back into Pounds Sterling, rather just included as £[redacted]. We do not consider it necessary to propose an adjustment given the size of the discrepancy. The cost attributable to the Transmission Assets is insignificant and therefore, no adjustment is proposed in respect of the allocation rate.

13.42.2 £[redacted] in relation to increasing the third party insurance premium to a £[redacted] cap for a premium of €[redacted][67]. This has been translated into a Pounds Sterling amount of £[redacted] at a rate of €[redacted]:£[redacted]. 25% (£[redacted]) being attributable to the Transmission Assets. The cost attributable to the Transmission Assets is insignificant and therefore, no adjustment is proposed in respect of the allocation rate.

13.43 Vessel charterer's insurance (£[redacted]) and other insurances relating to mineral rights, drainage and terrorism (£[redacted]) are individually less than £[redacted] and therefore we have not undertaken any further verification work. The costs attributable to the Transmission Assets are insignificant and therefore, no adjustment is proposed in respect of the allocation rate.

ACQUISITION COSTS

13.44 A cost of £[redacted] has been included within the CAT for acquisition costs. This relates to the purchase of the wind development portfolio of [redacted]. The total consideration was £[redacted][68], which was broken down into various parts, two relating to the Transmission Assets as follows:

13.44.1 [redacted]

13.44.2 [redacted]

[66] 2.11.1_Third Party Liability Insurance Policy

[67] 2.11.1_Third Party Liability Insurance Policy Endorsement

[68] 3.1.1_Acquisition Cost Information (Part 1 of 4)

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MARINE WARRANTY SURVEYOR COSTS

13.45 Marine warranty surveyor costs of £[redacted] have been included within the CAT. A spreadsheet detailing the number of office hours and site days, broken down by scope of work, has been provided by the Developer[69]. The estimated costs are based upon a daily rate of £[redacted], or an hourly rate of £[redacted].

13.46 The costs of office hours and site days in relation to MWS meetings, client liaison, project management and general advice to the client are shared costs, 10% of which are attributed to the Transmission Assets. Following the jack-up and install of the offshore platform and topside, skidding and load-out of export cable and cable trenching, the costs are attributed 100% to the Transmission Assets.

13.47 A total of 16 days and 227 hours (costing £[redacted]) have been estimated in relation to shared costs, resulting in a cost of £[redacted] to the Transmission Assets, and a further 62 days and 813 hours have been estimated in respect of OFTO specific costs, a total of £[redacted][70], giving an overall total cost £[redacted][71].

CONCLUSION

13.48 The correction of a formula error in the E.ON staff and contractor costs schedule, as detailed at paragraph 13.5, has highlighted that the CAT is understated by £[redacted].

13.49 We have proposed an adjustment in respect of the allocation of insurance costs, applying an allocation rate of 22.2% gives a reduction in the CAT of £[redacted].

13.50 No other adjustments are proposed.

[69] 2.14_Finance Sheet Ti - Marine Warranty Surveyor Costs

[70] ibid

[71] [redacted]

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14 ISSUES ARISING

14.1 In this section we set out details of the issues which have arisen during the Ex-Ante Review and the resulting impact on the cost assessment.

HARLAND & WOLFF CONTRACT – OFFSHORE SUBSTATION FOUNDATIONS

14.2 [redacted]

14.3 [redacted]

SALARY COSTS

14.4 [redacted]

COSTS REQUIRING FURTHER SUBSTANTIATION

14.5 The CAT includes costs of £[redacted] in relation to the VSMC contract. Of this, there is a total of £[redacted] which has been agreed to out-turn, but not to a supporting contract or variation orders. We suggest that Ofgem discuss this further with the Developer and have proposed an adjustment to the CAT (see paragraph 8.20).

COMMERCIAL CONTINGENCY

14.6 The Developer has included a contingency of £[redacted] should the OFTO process fail to recover the costs for Capital and/or Transmission. We do not consider this to be an appropriate contingency to include within the value of the Transmission Assets and proposed an adjustment to the CAT to release this contingency (paragraph 13.16).

ALLOCATION RATE

14.7 The Developer has allocated certain indirect costs to the Transmission Assets, based on the ratio of direct Transmission Asset costs to the total direct project costs. The ratio is 22.2%, but the Developer has rounded this up to 25% to take account of the project management intensive nature of the work. Insurance costs should not be affected by project management work, and therefore, it is not considered appropriate to apportion the insurance costs on this basis. We propose a reduction of £[redacted] to the CAT in respect of insurance costs allocated at the higher rate of 25%.

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AREAS REQUIRING TECHNICAL INPUT

14.8 As detailed at paragraph 6.11, the contingency provision included within the CAT has been calculated based upon the Developer's assessment of the risks associated with the construction of the Transmission Assets. However, we do not have the technical expertise to establish whether the Developer's assessment of the expected value of risks and of the likelihood of each event occurring are accurate.

14.9 On this basis, if Ofgem requires more comfort in the area, we would recommend that it should instruct its technical advisers to review the risk schedule in order to determine whether the Developer's assessments are reasonable.

14.10 Internal project management costs have been included within the CAT. Although we have been able to review the mathematical accuracy of the spreadsheet and consider that the rates appear to be reasonable, we recommend that Ofgem's technical advisers review the schedule in order to assess whether the amount of time spent has been efficiently incurred and that the rates used and percentages allocated to Transmission Assets are reasonable (paragraph 13.5).

14.11 The Developer incurred two years' storage costs in respect of the export cable (paragraph 8.12). Ofgem may wish to engage its technical consultant to comment upon the reasonableness of such storage costs.

14.12 [redacted]

14.13 Included within transaction costs is E.ON staff time based on [redacted] people over a two year period (paragraph 13.35). It is outside of our expertise to comment on the reasonableness of salary rates and the amount of time spent working on the Transmission Assets. We therefore note that Ofgem may wish to consider appointing their technical experts to gain comfort over the level of staff costs included within the CAT.

14.14 [redacted]

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IMPACT OF COST ASSESSMENT REVIEW

14.15 Following the Ex-Ante Review of the CAT and the supporting information provided, we consider that the capital value of the Transmission Assets as per the CAT may require a reduction from £169,966,948 to £168,729,243, a reduction of £1,237,705 (1% of capital costs of the Transmission Assets).

Impact of cost assessment

	Ref	£
Cost of Transmission Assets per CAT (excluding IDC)	4.4	169,966,948
Potential adjustments arising as a result of our review		
Offshore substation costs		
Harland & Wolff Heavy Industries Limited	7.24	[redacted]
Submarine cable supply and installation		
VSMC	8.20	[redacted]
General development costs		
Correction of formula error in E.ON Staff and Contractor Costs schedule	13.5	[redacted]
Insurance		
Reduction in allocation rate from 25% to 22.2%	13.40	[redacted]
Contingency		
Commercial contingency	13.16	[redacted]
Total adjustments		(1,237,705)
Revised cost of Transmission Assets		**168,729,243**

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