



**Ex-Post Cost Review of Race Bank Offshore Wind Farm
Transmission Assets**

**Report of Grant Thornton UK LLP
dated 29 September 2019**

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1 EXECUTIVE SUMMARY

- 1.1 Grant Thornton UK LLP (Grant Thornton / We) has been instructed by the Office of Gas and Electricity Markets (Ofgem) to carry out a review of the ex-post cost information, prepared by Ørsted A/S¹ (Ørsted), for the transmission assets (the Transmission Assets) of the Race Bank Offshore Wind Farm (ROW1 / the Wind Farm), in accordance with our instructions set out in paragraph 1.3 below.
- 1.2 The Wind Farm is owned 50% by Ørsted and 50% by Firebolt RB Holdings Limited, which in turn is owned by various shareholders, as set out in the group structure at paragraph 3.3 (collectively the Developers). The ROW1 project is managed by Ørsted Wind Power A/S under a Construction Management Agreement (CMA).
- 1.3 The review has sought to determine whether the Developers have procedures in place for managing directly and indirectly incurred costs, and to carry out certain testing on whether the Developers' latest assessment of the costs of the Transmission Assets have been incurred as stated. Our review and this report is based upon the costs recorded in version 7 of the cost assessment template (CAT) provided to Ofgem on 11 July 2018 (the 11 July 2018 CAT)². Further detail of our work is set out in Section 3, supplemented in **Appendices 1 to 10**, and is summarised as follows:
- establish the processes and policies undertaken by the Wind Farm for making payments for directly and indirectly incurred costs;
 - in relation to directly incurred costs, for selected contracts, trace expenditure through the purchasing and payments system and reconcile the costs included on the invoice schedule to the 11 July 2018 CAT;
 - in relation to indirectly incurred costs, for a sample of transactions, trace expenditure through the accounting system, and confirm the amount allocated has been correctly applied in accordance with the stated allocation methodology, using appropriate metrics in respect of the costs between transmission and generation; and
 - compare the costs at 11 July 2018 to the Indicative Transfer Value (ITV) at November 2017, and obtain explanations for significant variances arising between the costs at the two dates.
- 1.4 This report reflects the 11 July 2018 CAT together with information and explanations received by Grant Thornton up to and including 31 October 2018. Our report does not therefore reflect any information or the outcome of discussions held after that date.

¹ On 6 November 2017, Dong Energy A/S changed its name to Ørsted A/S

² We were originally provided with version 6 of the cost assessment template (dated 22 June 2018) however an updated version was provided throughout our review, which included two amendments to increase the overall CAT costs by £333,210

1.5 The Developers have prepared cost templates setting out its assessment of the costs of the Transmission Assets throughout the development of the Wind Farm project. We reviewed an earlier version of the cost template dated 17 March 2017 (the ex-ante review) which culminated in the submission of our final report on 23 April 2018. Our draft report (dated 7 July 2017) was considered by Ofgem in establishing the project's ITV³.

1.6 The 11 July 2018 CAT is summarised below:

Breakdown of Transmission Assets costs

	CAT Reference	November 2017 ITV £	11 July 2018 CAT £	Movement £
Project common costs	CR8	■	■	■
Offshore substation	CR2	■	■	■
Submarine cable supply and installation	CR3	■	■	■
Land cable supply and installation	CR4	■	■	■
Onshore substation connection	CR5	■	■	■
Reactive substation	CR6	■	■	■
Connection costs	CR7	■	■	■
Other costs	CR9	■	■	■
Total capital costs		■	■	■
Interest during construction		■	■	■
		500,846,432	494,763,801	(6,082,631)

1.7 The 11 July 2018 CAT reflects a decrease in the cost of the Transmission Assets of £■ million from the November 2017 ITV. The principal reasons for the overall decrease are:

- the release of £■ million of contingency and uncertainties costs;
- a £■ million decrease in costs for the installation and burial of the export cable as a result of changes to the plans for rock dumping;
- a £■ million decrease in consent costs as a result of using internal staff rather than external consultants;
- a £■ million decrease in site and commissioning costs; and
- a £■ million decrease in offshore substation costs as a result of favourable weather conditions for the substation installation.

³ Letter from Ofgem to Race Bank Wind Farm Limited dated 23 November 2017 "Indicative Transfer Value for the Race Bank project"

- 1.8 The above decreases (totalling £[REDACTED] million) have been partially offset by the following increased costs (totalling £[REDACTED] million):
- a £[REDACTED] million increase in 400kV and 220kV GIS onshore switchgear and control costs as a result of additional time required for final construction works and close out of the onshore substation contract costs;
 - a £[REDACTED] million increase in geological survey costs resulting from increased scope and OFTO allocation;
 - a net £[REDACTED] million increase in internal resources costs as estimated hours have now been update for actuals, reflecting an extended time schedule and increased scope for CR3 and CR5 costs; and
 - a £[REDACTED] million increase in interest during construction.
- 1.9 The full analysis of the above variances is presented at **Appendix 10**.

SUMMARY OF FINDINGS

The Wind Farm's payment processes

- 1.10 Ofgem has instructed us to establish the Wind Farm's processes for making payments to suppliers for directly and indirectly incurred costs.
- 1.11 The Developers have confirmed that all large value contracts for the Wind Farm have been subject to a competitive tendering process. Based upon our review it appears the Developers have suitable systems in place for the approval and payment of invoices to contractors, including contract variations, and has further systems in place to ensure that, where appropriate, the allocation of costs between the Transmission and Generation Assets is properly recorded.

Directly incurred costs

- 1.12 Ofgem has instructed us to carry out certain procedures (as detailed at paragraph 3.14 below) on the costs payable by the Wind Farm to:
- JV Cofely Fabricom-Iemants (JVFI) for the fabrication of the offshore substation and platform (OSP);
 - SHL OFFSHORE CONTRACTORS B.V.(SHL) for the installation of the OSP;
 - NKT for the supply of the 220kV subsea and land cables;
 - Jan De Nul Luxembourg S.A. (Jan De Nul) for the installation and burial of the subsea cable;
 - J Murphy and Sons Ltd (J Murphy) for the civil works construction of the onshore substation (ONSS);
 - RXPE for the provision of the Dynamic Reactive Compensation (DRC) plant; and
 - ABB A/S (ABB) for the provision of offshore transformers.

- 1.13 These seven contracts amounted to £[REDACTED] million and represent [REDACTED]%⁴ of the total capital costs. These procedures have been carried out as required and a summary of findings is set out below:

Summary of direct costs testing

	Invoices paid £	Invoiced but not paid £	Accrued amounts £	Immaterial difference £	Total per 11 July 2018 CAT £
JV Cofely Fabricom-Iemants	[REDACTED] [REDACTED]%	[REDACTED] [REDACTED]%	[REDACTED]	-	[REDACTED] 100.0%
SHL OFFSHORE CONTRACTORS B.V.	[REDACTED] [REDACTED]%	-	-	-	[REDACTED] 100.0%
NKT	[REDACTED] [REDACTED]%	-	-	[REDACTED]%	[REDACTED] 100.0%
Jan De Nul Luxembourg S.A.	[REDACTED] [REDACTED]%	-	[REDACTED]%	-	[REDACTED] 100.0%
J Murphy and Sons Ltd	[REDACTED] [REDACTED]%	-	-	-	[REDACTED] 100.0%
RXPE	[REDACTED] [REDACTED]%	-	[REDACTED]%	-	[REDACTED] 100.0%
ABB A/S	[REDACTED] [REDACTED]%	-	[REDACTED]%	-	[REDACTED] 100.0%
Total	[REDACTED] [REDACTED]%	[REDACTED] [REDACTED]%	[REDACTED] [REDACTED]%	[REDACTED] [REDACTED]%	[REDACTED] 100.0%

- 1.14 As set out in the table above, we have verified that invoices totalling £[REDACTED] million have been paid, representing [REDACTED]% of the selected contracted costs included in the 11 July 2018 CAT. A further £[REDACTED] million ([REDACTED]%) has been invoiced but not yet paid.
- 1.15 Accrued amounts of £[REDACTED] million represent the remaining costs payable in relation to the three contracts that remain open, Jan De Nul, RXPE and ABB. The accrued costs relate to the final documentation invoices which are still to be invoiced and paid. For the Jan De Nul and ABB contracts, we have been provided with a breakdown of the total contract costs which we have agreed to the contract and variation orders. The accrued costs for the RXPE contract relate to a final payment in relation to a service and maintenance agreement and [REDACTED].

⁴ £[REDACTED]%

- 1.16 Immaterial differences totalling £[REDACTED] relate to foreign exchange differences of £[REDACTED], arising from the exchange rates applied when converting costs included in the CAT into Sterling, as further explained in paragraph 3.20, and an amount not submitted in the 11 July 2018 CAT of £[REDACTED]. We do not propose any adjustments in relation to these differences.

Indirectly incurred costs

- 1.17 Ofgem has instructed us to carry out certain procedures (as detailed in paragraph 3.21 below) in relation to a sample of indirect costs payable by the Wind Farm.

Project management support services costs

- 1.18 We have been provided with a breakdown of project management support services costs and carried out a test of these costs to underlying records. Costs have been allocated to the Transmission Assets based upon the time spent between the transmission and generation businesses by Ørsted's staff and the external contractors who worked on the Wind Farm development. Shared resource costs have been allocated to the Transmission Assets using the allocation rate agreed with Ofgem at ITV of [REDACTED] %.
- 1.19 Our testing in relation to indirect costs (on a random sample of five employees) is summarised below:

Summary of indirect costs testing

	DE function	June 2017 cost DKK	June 2017 cost £	Agreed to invoice	Agreed to ledger	Agreement to bank
[REDACTED]	Internal	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	Internal	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	Internal	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	External	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	External	[REDACTED]	[REDACTED]	✓	✓	✓
		[REDACTED]	[REDACTED]			

CONCLUSIONS

- 1.20 Our review of the Wind Farm's processes and procedures has indicated that it has suitable policies for the approval and payment of goods and services received, including for the allocation of costs where appropriate between the Transmission and Generation Assets.
- 1.21 On the basis of our review of the information and the explanations received to date in relation to the sample of directly and indirectly incurred costs that we have been asked to review, we can confirm that they are:
- 1.21.1 supported by invoices, ledgers and bank statements that indicate that they have been incurred or are due; and
- 1.21.2 that the relevant cost is included within the 11 July 2018 CAT.

- 1.22 This is subject to the cost of the Transmission Assets being reduced by £[REDACTED]⁵ in relation to onshore substation design costs.
- 1.23 We also recommend that Ofgem should discuss the OFTO transaction costs included in the 11 July 2018 CAT of £[REDACTED] further with the Developers. These estimated costs relate to external consultancy costs, costs associated with undertaking the cost assessment and legal costs relating to the transfer of the asset to the OFTO⁶.

Grant Thornton UK LLP

Grant Thornton UK LLP
London

22 November 2018

⁵ See **Appendix 10**, paragraph 10.29 for further detail

⁶ As further detailed in **Appendix 10**, paragraph 10.37

2 INTRODUCTION

INSTRUCTIONS

- 2.1 Grant Thornton has been instructed by Ofgem to prepare a report on our review of the cost information and 11 July 2018 CAT for the Transmission Assets of the Wind Farm, prepared for Ofgem by the Developers (the ex-post review). This review is limited to the procedures set out in more detail in Section 3, and in particular to a sample of costs which have been selected by Ofgem.
- 2.2 Throughout the development of the Wind Farm, Ofgem has required the Developers to submit cost templates which set out both the estimated and actual costs that will be or have been incurred in relation to the Transmission Assets.
- 2.3 In April 2017, we conducted reviews of the cost templates for the Transmission Assets prepared between 16 January 2017 and 17 March 2017 (the ex-ante review). At this stage, although construction of the Transmission Assets was well under way, as there remained a degree of uncertainty over a number of costs, a contingency provision of £[REDACTED] million (which equated to [REDACTED]%⁷ of the pre-contingency capital costs) was included in the Grant Thornton ex-ante report. The contingency cost remained unchanged at ITV.
- 2.4 Further to the ex-ante review, Ofgem set the ITV in November 2017. This was based upon the Transmission Assets costs included in our draft report (dated 7 July 2017⁸), and adjusted for particular issues that had been highlighted in our draft report as follows:

		23 April 2018 Grant Thornton ex-ante report £	Developers' Adjustments £	Revised cost assessment (v4) 27 March 2017 £	Adjustments per Grant Thornton ex-ante report £	Ofgem ex-ante adjustments £	November 2017 ITV £
Project common costs	CR8	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Offshore substation	CR2	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Submarine cable supply and installation	CR3	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Land cable supply and installation	CR4	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Onshore substation connection	CR5	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Reactive substation	CR6	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Connection costs	CR7	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Other costs	CR9	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Total capital costs		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Interest during construction		[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
		535,068,861	4,436,417	539,505,278	1,571,064	(40,229,909)	500,846,432

⁷ [REDACTED]

⁸ Finalised in April 2018

- 2.5 This report reflects the 11 July 2018 CAT together with information and explanations received by Grant Thornton up to and including 31 October 2018. Our report does not therefore reflect any information or the outcome of discussions held after that date.
- 2.6 The construction of the Transmission Assets is 98% complete and the Wind Farm became fully operational in January 2018.
- 2.7 The main purpose of the ex-post review of the Wind Farm's Transmission Assets is to determine whether a sample of items, selected by Ofgem, which have been included within the 11 July 2018 CAT prepared by the Developers for the Transmission Assets, are appropriately stated, and whether selected costs not directly attributable to either the generation or transmission businesses have been allocated to the Transmission Assets on a reasonable basis. In particular we have been asked to:
- establish the processes and policies undertaken by the Wind Farm for making payments to suppliers for directly and indirectly incurred costs;
 - in relation to directly incurred costs, for selected contracts, trace expenditure from the cash flow schedule to the contract, the invoice, the accounting ledgers of the Wind Farm, and to the bank statements, and reconcile the costs included on the invoice schedule to the 11 July 2018 CAT;
 - in relation to indirectly incurred costs, for a sample of transactions, trace from the 11 July 2018 CAT to journal entries made on the accounting system, and confirm the amount allocated has been determined as prescribed in the cost allocation methodology that the Developers have indicated, using appropriate metrics in respect of the allocation of costs between transmission and generation; and
 - compare the costs at July 2018 to the ITV and obtain explanations for variances between the costs at the two dates.
- 2.8 If further information is produced and brought to our attention after service of this report, we reserve the right to revise our opinions as appropriate.
- 2.9 This work does not constitute an audit performed in accordance with Auditing Standards.
- 2.10 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.
- 2.11 The report has been prepared using Microsoft Word and Microsoft Excel. The report may contain minor rounding adjustments due to the use of computers for preparing certain calculations.

RESTRICTION ON CIRCULATION

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

DISCLOSURES OF INTEREST

- 2.14 To the best of our knowledge, we have no connection with any of the parties or advisors involved in the Wind Farm development that would in any way impact upon our independence in preparing this report.

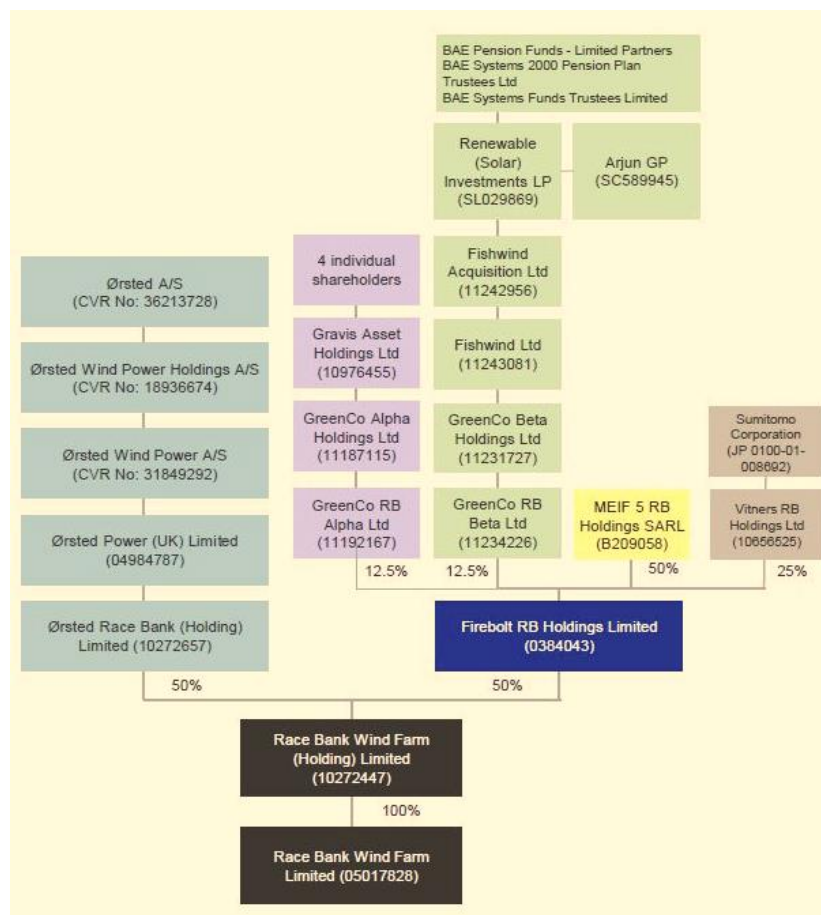
FORMS OF REPORT

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

3 THE ROW01 EX-POST REVIEW

INTRODUCTION

- 3.1 The Wind Farm comprises 91 wind turbine generators (WTGs) each with a power rating of 6.3MW totaling 573.3MW installed capacity and with a Transmission Entry Capacity (TEC) of 565MW at the Offshore Transmission Operator (OFTO) offshore interface point. It is situated 27km north of Blakeney Point off the coast of Norfolk, and 28km east of Chapel St. Leonards off the Lincolnshire coast in the North Sea. The onshore licencing body is National Grid Electricity Transmission plc (NGET) and the Wind Farm's Transmission Assets connect to the Walpole 400kV NGET substation near King's Lynn, Norfolk.
- 3.2 The Wind Farm is owned 50% by Ørsted Race Bank (Holding) Limited and 50% by Firebolt RB Holdings Limited, which in turn is owned by various shareholders as set out in the group structure at paragraph 3.3 below.
- 3.3 The Developers provided us with an updated ownership structure of the Wind Farm, as set out below⁹:



⁹ Ofgem developer data room 4.3.133 ROW01 GT response xls 11.7.18 (DOK3102553) – provided 13 July 2018

INFORMATION PROVIDED

3.4 Grant Thornton has relied upon the following information in reviewing the cost assessment for the Wind Farm's Transmission Assets:

- the 11 July 2018 CAT, which includes actual costs incurred up to February 2018 and accrued costs that will be incurred from that date up to the closing out of all contracts, together with a list of reconciling items between the November 2017 ITV (as detailed at paragraph 2.4 above) and the 11 July 2018 CAT;
- schedules of invoices prepared for the contracts selected for review by Ofgem, together with copies of contract documentation, invoices, bank statements and ledgers showing payments of the invoices recorded;
- schedules providing supporting information for the internal project management costs with copies of invoices and bank statements showing payments of the related invoices; and
- information and explanations provided to us by the Developers. This included a visit to Ørsted's offices on 29 June 2018 to discuss the Transmission Assets, and subsequent email correspondence with staff responsible for the preparation of the 11 July 2018 CAT.

EX-POST REVIEW

3.5 The main purpose of the ex-post review is as set out in Section 2.

3.6 The 11 July 2018 CAT for the Transmission Assets of the Wind Farm is summarised below:

Breakdown of Transmission Assets costs

	CAT Reference	November 2017 ITV £	11 July 2018 CAT £	Movement £
Project common costs	CR8			
Offshore substation	CR2			
Submarine cable supply and installation	CR3			
Land cable supply and installation	CR4			
Onshore substation connection	CR5			
Reactive substation	CR6			
Connection costs	CR7			
Other costs	CR9			
Total capital costs				
Interest during construction				
		500,846,432	494,763,801	(6,082,631)

THE WIND FARM'S FINANCIAL PROCESSES

Accounting systems

- 3.7 The Developers confirmed that there have been no changes in its accounting system since our ex-ante review.
- 3.8 All costs of the Wind Farm are posted to a Work Breakdown Structure (WBS) code in the accounting system. Costs have been grouped dependent on the cost activity that they relate to and whether they relate entirely to Transmission or Generation Assets, or to the Wind Farm as a whole (shared costs).
- 3.9 Shared costs are typically indirect costs which are for the general benefit of the overall project and include:
- general project management and administration;
 - project support functions e.g. procurement, cost control, health and safety;
 - general consultants e.g. legal/environment and consent;
 - offices – London, Copenhagen and on site; and
 - SCADA equipment benefiting both the Transmission and Generation Assets.
- 3.10 At ITV, Ofgem agreed with the Developers that the portion of shared costs that are directly attributable to the Transmission Assets (as a proportion of the total wind farm direct CAPEX) is [REDACTED]%. This allocation rate has also been used in the 11 July 2018 CAT.

Process for making payments

- 3.11 The main process used by the Developers for making payments for both directly and indirectly incurred costs is set out below:
- as identified in our ex-ante report, one of the tools used by the Wind Farm in achieving value for money is the use of a competitive tendering process which was reviewed in that report;
 - once the contract has been signed, a purchase order is set up by either [REDACTED] or the [REDACTED];
 - when a contract milestone has been met, the contractor sends a payment certificate for approval by the [REDACTED];
 - after the payment certificate has been approved, the contractor submits an invoice;
 - the invoice is scanned and sent to the SAP co-ordinator who sends the invoice to the purchase order raiser, the first approver;
 - after first approval has been completed, the invoice is sent automatically by SAP to the second approver;

- the approval thresholds for contracts and invoices are as follows:
 - up to DKK [REDACTED] can be approved by the Project Manager and [REDACTED]
 - over DKK [REDACTED] requires [REDACTED] and [REDACTED] approval; and
 - over DKK [REDACTED] requires approval from the [REDACTED];
- if, at either stage, the invoice has not been approved SAP will send automatic reminders to the approvers. Additionally, the SAP co-ordinator performs manual checks of the status in workflow;
- once the invoice has received second stage approval, it is released for payment to the payment department. For the purposes of recording the costs in SAP, any invoices not raised in UK sterling, are translated using the monthly average exchange rates¹⁰ applicable to the month they are released for payment;
- the payment terms are inputted into SAP by the SAP co-ordinator when the invoice is received and this drives the date on which the payment is made. No further approvals are required at this stage, as approval of the invoice is deemed to be approval of the payment. However, even if an invoice has been approved, the payment can be stopped if required. Any invoice not raised in UK sterling, will be paid on the spot rate on the date of payment and therefore this is likely to differ from the amount per SAP which, as noted above, was calculated using the monthly average exchange rate.

Contract variations

- 3.12 The Developers have confirmed that the process for payment of contract variations is the same as for the general invoice system set out above.

REVIEW OF DIRECTLY INCURRED COSTS

- 3.13 Ofgem has selected the following seven contracts of directly incurred costs for review:

Summary of directly incurred costs selected for testing

	CAT Reference	11 July 2018 CAT £	% of total Transmission Asset capital costs
JV Cofely Fabricom-Iemants	CR2	[REDACTED]	[REDACTED]
SHL OFFSHORE CONTRACTORS B.V.	CR2	[REDACTED]	[REDACTED]
NKT	CR3/CR4	[REDACTED]	[REDACTED]
Jan De Nul Luxembourg S.A.	CR3	[REDACTED]	[REDACTED]
J Murphy and Sons Ltd	CR5	[REDACTED]	[REDACTED]
RXPE	CR6	[REDACTED]	[REDACTED]
ABB A/S	CR2	[REDACTED]	[REDACTED]
		[REDACTED]	[REDACTED]

¹⁰ From Oanda.com

3.14 Ofgem has directed that our work in relation to these contracts covers the following:

- trace expenditure from the cash flow schedule to the relevant contract or other source record, and from the contract trace to an invoice(s) or journal;
- trace the invoice through the purchasing system;
- trace the invoice through to the payment system; and
- trace the payments through to the bank account.

3.15 Our testing in relation to these contracts is further detailed in **Appendix 1**, with the detailed testing for each of the suppliers in **Appendices 2 to 8**, and our findings are summarised in the following table:

Summary of direct costs testing

	Invoices paid £	Invoiced but not paid £	Accrued amounts £	Immaterial difference £	Total per 11 July 2018 CAT £
JV Cofely Fabricom-Iemants	██████████	██████████	██████████	██████████	██████████ 100.0%
SHL OFFSHORE CONTRACTORS B.V.	██████████	██████████	██████████	██████████	██████████ 100.0%
NKT	██████████	██████████	██████████	██████████	██████████ 100.0%
Jan De Nul Luxembourg S.A.	██████████	██████████	██████████	██████████	██████████ 100.0%
J Murphy and Sons Ltd	██████████	██████████	██████████	██████████	██████████ 100.0%
RXPE	██████████	██████████	██████████	██████████	██████████ 100.0%
ABB A/S	██████████	██████████	██████████	██████████	██████████ 100.0%
Total	██████████	██████████	██████████	██████████	██████████ 100.0%

Invoices paid

3.16 Our review of invoices paid by Ørsted Wind Power A/S, relating to the seven contracts selected by Ofgem, confirmed payment to the contractor and raised no areas of concern.

Accrued amounts

3.17 Our review of accrued amounts in relation to the Jan De Nul, RXPE and ABB contracts raised no areas of concern. Further details in relation to these amounts are set out in **Appendix 1**.

Foreign exchange

- 3.18 The 11 July 2018 CAT includes actual costs to the end of February 2018 converted into Sterling using the average monthly spot exchange rates for the month the “actuals” are booked in SAP (ie the month the invoice is approved for payment) and forecast costs (at forecast hedged exchange rates) from March 2018 until the end of the project.
- 3.19 As a result, included in “Other costs” (CR9) are hedging gains of £[REDACTED]. We understand that, independent to our review, Ofgem are to make a decision of foreign exchange rates used in the FTV CAT and therefore no further work has been performed in this area.

Foreign exchange difference

- 3.20 Included in the total NKT costs per the 11 July 2018 CAT are foreign exchange differences totalling £[REDACTED], arising from the monthly exchange rates applied when converting the amounts paid into Sterling. No adjustment has been proposed in respect of this immaterial difference.

REVIEW OF INDIRECTLY INCURRED COSTS

Project management costs

- 3.21 Ofgem has directed that our work in relation to project management costs covers the following:
- select a random sample of five employees;
 - agree costs from each individuals timesheet to the system; and
 - agree corresponding payment from the project.
- 3.22 Our detailed testing in relation to project management costs is set out in **Appendix 9**, and our findings are summarised in the following table:

Summary of indirect costs testing

	DE function	June 2017 cost DKK	June 2017 cost £	Agreed to invoice	Agreed to ledger	Agreement to bank
[REDACTED]	Internal	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	Internal	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	Internal	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	External	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	External	[REDACTED]	[REDACTED]	✓	✓	✓
		[REDACTED]	[REDACTED]			

- 3.23 Our testing of project management support services costs has identified no areas of concern.

- 3.24 For the avoidance of doubt, we have not verified the suitability of the hourly rates (as set out in the [REDACTED]) charged to the project by Ørsted.

MOVEMENTS IN THE COST ASSESSMENT

- 3.25 The movements between the ITV set in November 2017 and the most recent cost assessment of July 2018 are summarised in the following table:

Breakdown of Transmission Assets costs

	CAT Reference	November 2017 ITV £	11 July 2018 CAT £	Movement £
Project common costs	CR8	[REDACTED]	[REDACTED]	[REDACTED]
Offshore substation	CR2	[REDACTED]	[REDACTED]	[REDACTED]
Submarine cable supply and installation	CR3	[REDACTED]	[REDACTED]	[REDACTED]
Land cable supply and installation	CR4	[REDACTED]	[REDACTED]	[REDACTED]
Onshore substation connection	CR5	[REDACTED]	[REDACTED]	[REDACTED]
Reactive substation	CR6	[REDACTED]	[REDACTED]	[REDACTED]
Connection costs	CR7	[REDACTED]	[REDACTED]	[REDACTED]
Other costs	CR9	[REDACTED]	[REDACTED]	[REDACTED]
Total capital costs		[REDACTED]	[REDACTED]	[REDACTED]
Interest during construction		[REDACTED]	[REDACTED]	[REDACTED]
		500,846,432	494,763,801	(6,082,631)

- 3.26 The principal reasons for the £[REDACTED] million decrease in costs between the November 2017 ITV and the 11 July 2018 CAT are

- the release of £[REDACTED] million of contingency and uncertainties costs;
- a £[REDACTED] million decrease in costs for the installation and burial of the export cable as a result of changes to the plans for rock dumping;
- a £[REDACTED] million decrease in consent costs as a result of using internal staff rather than external consultants;
- a £[REDACTED] million decrease in site and commissioning costs; and
- a £[REDACTED] million decrease in offshore substation costs as a result of favourable weather conditions for the substation installation.

3.27 The above decreases (totalling £[REDACTED] million) have been partially offset by the following increased costs (totalling £[REDACTED] million):

- a £[REDACTED] million increase in 400kV and 220kV GIS onshore switchgear and control costs as a result of additional time required for final construction works and close out of the onshore substation contract costs;
- a £[REDACTED] million increase in geological survey costs resulting from increased scope and OFTO allocation;
- a net £[REDACTED] million increase in internal resources costs as estimated hours have now been update for actuals, reflecting an extended time schedule and increased scope for CR3 and CR5 costs; and
- a £[REDACTED] million increase in interest during construction.

3.28 The full variance analysis of the above variances is presented at **Appendix 10**.

IMPACT OF COST ASSESSMENT REVIEW

3.29 Following our review of the 11 July 2018 CAT, as detailed above, we consider that, other than reducing the cost of the Transmission Assets by £[REDACTED]¹¹ in relation to onshore substation design costs, there are no further amendments to be made to the cost template (with the exception of any foreign exchange adjustment which is to be determined by Ofgem).

3.30 As detailed in Appendix 10, paragraph 10.37, included in CR9 “Other costs” are £[REDACTED] of estimated costs relating to external consultancy costs, costs associated with undertaking the cost assessment and legal costs relating to the transfer of the asset to the OFTO. We recommend that Ofgem should discuss these costs further with the Developers.

¹¹ See **Appendix 10**, paragraph 10.29 for further detail

1 INVOICE TESTING

JVFI

- 1.1 The 11 July 2018 CAT includes an amount of £ [REDACTED] which was due to JVFI for the fabrication of the OSP which is made up as follows:

JVFI	
	€
Invoices paid	[REDACTED]
Invoiced but not paid	[REDACTED]
Total amounts paid/payable	[REDACTED]
Effective exchange rate (€:£)	[REDACTED]
Total JVFI costs per 11 July 2018 CAT (£)	[REDACTED]

Review of amounts paid

- 1.2 We obtained a schedule of all amounts paid under the JVFI contract which recorded 55 purchase invoices and [REDACTED]. This schedule is included at **Appendix 2**.

Vouching to invoices

- 1.3 We agreed all 55 invoices recorded on the schedule to the underlying invoice, along with the additional amount as per the [REDACTED].

Vouching to purchase ledger

- 1.4 We agreed all 56 amounts to the purchase ledger.

Vouching to bank statements

- 1.5 We agreed the payment of all 56 [REDACTED] amounts to bank statements (or credit note where applicable).

Invoiced but not paid

- 1.6 We have agreed a further amount of € [REDACTED] to [REDACTED] for the settlement of extra work offshore, contract close out and discharge in accordance with the contract. The Developers have advised that this has not yet been paid as [REDACTED].

SHL

- 1.7 The 11 July 2018 CAT includes an amount of £[REDACTED] payable to SHL for work carried out in respect of the installation of the OSP which is made up as follows:

SHL

	€
Invoiced amounts	[REDACTED]
Effective exchange rate (€:£)	[REDACTED]
Total SHL costs per 11 July 2018 CAT (£)	[REDACTED]

Review of amounts paid

- 1.8 We obtained a schedule of all invoices received under the SHL contract which recorded 34 purchase invoices. This is included at **Appendix 3**.

Vouching to invoices

- 1.9 We agreed all 34 invoices recorded on the schedule to the underlying invoice.

Vouching to purchase ledger

- 1.10 We agreed all 34 invoices to the purchase ledger.

Vouching to bank statements

- 1.11 We agreed the payment of all 34 invoices to bank statements.

NKT

- 1.12 The 11 July 2018 CAT includes an amount of £[REDACTED] payable to NKT for the supply of the subsea and land cable which is made up as follows:

NKT

	€
Invoiced amounts	[REDACTED]
Effective exchange rate (€:£)	[REDACTED]
Total invoiced amounts (£)	[REDACTED]
Foreign exchange difference (£)	[REDACTED]
Total NKT costs per 11 July 2018 CAT (£)	[REDACTED]

Review of amounts paid

- 1.13 We obtained a schedule of all invoices received under the NKT contract which recorded 44 purchase invoices. This is included at **Appendix 4**.

Vouching to invoices

- 1.14 We agreed all 44 invoices recorded on the schedule to the underlying invoice. We note that three of the invoices were invoiced in two parts and therefore we agreed a total of 47 invoices.

Vouching to purchase ledger

- 1.15 We agreed all 47 invoices to the purchase ledger.

Vouching to bank statements

- 1.16 We agreed the payment of all 47 invoices to bank statements (or credit note where applicable).

Foreign exchange difference

- 1.17 The total NKT costs per the 11 July 2018 CAT includes an exchange rate difference of £[REDACTED], being the difference between the total sterling value as calculated at Appendix 4 using the applicable monthly exchange rates and the total sterling value as per the cash flows (at invoice approval date) downloaded from SAP, which has been included in the CAT. We have not looked into this immaterial difference further.

JAN DE NUL

- 1.18 The 11 July 2018 CAT includes an amount of £[REDACTED] payable to Jan De Nul for the installation and burial of the subsea cable which is made up as follows:

Jan de Nul	
	€
Invoiced amounts	[REDACTED]
Accrued costs	[REDACTED]
Total amounts paid/payable	[REDACTED]
Effective exchange rate (€:£)	[REDACTED]
Total Jan De Nul costs per 11 July 2018 CAT (£)	[REDACTED]

Review of amounts paid

- 1.19 We obtained a schedule of all invoices received under the Jan De Nul contract which recorded 73 purchase invoices and two credit notes. This is included at **Appendix 5**.

Vouching to invoices

- 1.20 We agreed all 75 documents recorded on the schedule to the underlying invoice/ credit note.

Vouching to purchase ledger

- 1.21 We agreed all 75 documents to the purchase ledger.

Vouching to bank statements

- 1.22 We agreed the payment of all 73 invoices to bank statements.

Accrued amounts

- 1.23 We have been provided with a breakdown of the total contract costs of €[REDACTED] and have agreed these costs to the contract and variation orders¹². Accrued costs of €[REDACTED] (as set out in the table at paragraph 1.18 above) relate to the final documentation invoices which are still to be invoiced and paid.

J MURPHY

- 1.24 The 11 July 2018 CAT includes an amount of £[REDACTED] payable to J Murphy for civil works construction of the ONSS which is made up as follows:

J Murphy

	£
Invoiced amounts	[REDACTED]
Amounts not submitted in 11 July 2018 CAT	[REDACTED]
Total J Murphy costs per 11 July 2018 CAT (£)	[REDACTED]

Review of amounts paid

- 1.25 We obtained a schedule of all invoices received under the J Murphy contract which recorded 28 purchase invoices. This is included at **Appendix 6**.

Vouching to invoices

- 1.26 We agreed all 28 invoices recorded on the schedule to the underlying invoice.

Vouching to purchase ledger

- 1.27 We agreed all 28 invoices to the purchase ledger.

Vouching to bank statements

- 1.28 We agreed the payment of all 28 invoices to bank statements.

RXPE

- 1.29 The 11 July 2018 CAT includes an amount of £[REDACTED] which was due to RXPE for the provision of the DRC plant which is made up as follows:

RXPE

	€
Invoiced amounts	[REDACTED]
Accrued costs	[REDACTED]
Total amounts paid/payable	[REDACTED]
Effective exchange rate (€:£)	[REDACTED]
Total RXPE costs per 11 July 2018 CAT (£)	[REDACTED]

¹² We note that [REDACTED] for remedial protection work totalling £[REDACTED] is an estimate and not yet signed

Review of amounts paid

- 1.30 We obtained a schedule of all invoices received under the RXPE contract which recorded 10 purchase invoices. This is included at **Appendix 7**.

Vouching to invoices

- 1.31 We agreed all 10 invoices recorded on the schedule to the underlying invoice.

Vouching to purchase ledger

- 1.32 We agreed all 10 invoices to the purchase ledger.

Vouching to bank statements

- 1.33 We agreed the payment of all 10 invoices to bank statements.

Accrued amounts

- 1.34 Accrued costs of €[REDACTED] relate to amounts not yet invoiced or paid for:
- €[REDACTED] in relation to the second, and final, instalment of the five year service and maintenance agreement (to be paid within [REDACTED] days from the [REDACTED], expected [REDACTED] 2019); and
 - €[REDACTED] in relation to [REDACTED] payments to be made in three instalments (instalment [REDACTED] of €[REDACTED] at confirmed set up of [REDACTED], instalment [REDACTED] of €[REDACTED] at agreed document list and confirmation of transfer to [REDACTED] and instalment [REDACTED] of €[REDACTED] at certified valuation of [REDACTED]). The Developers have advised that they expect these payments to have been made by the end of 2018.

ABB

- 1.35 The 11 July 2018 CAT includes an amount of £[REDACTED] which was due to ABB for the provision of offshore transformers which is made up as follows:

ABB

	€
Invoiced amounts	[REDACTED]
Accrued costs	[REDACTED]
Total amounts paid/payable	[REDACTED]
Effective exchange rate (€:£)	[REDACTED]
Total ABB costs per 11 July 2018 CAT (£)	[REDACTED]

Review of amounts paid

- 1.36 We obtained a schedule of all invoices received under the ABB contract which recorded 19 purchase invoices. This is included at **Appendix 8**.

Vouching to invoices

- 1.37 We agreed all 19 invoices recorded on the schedule to the underlying invoice.

Vouching to purchase ledger

- 1.38 We agreed all 19 invoices to the purchase ledger.

Vouching to bank statements

- 1.39 We agreed the payment of all 19 invoices to bank statements.

Accrued amounts

- 1.40 We have been provided with a breakdown of the total contract costs of €[REDACTED] and have agreed these costs to the contract and variation orders¹³. Accrued costs of €[REDACTED] (as set out in the table at paragraph 1.35 above) relate to the final documentation invoices which are still to be invoiced and paid.

¹³ We note that variation order [REDACTED] for remedial protection work totalling £[REDACTED] is an estimate and not yet signed

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

Invoice no.	Description	Invoice date	Net invoice value €	Date paid	Exchange rate €/£	Net invoice value £	Agreed to invoice	Agreed to ledger	Agreed to bank
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓

[illegible]

[illegible]

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Invoice no.	Description	Invoice date	Net invoice value €	Date paid	Exchange rate €/£	Net invoice value £	Agreed to invoice	Agreed to ledger	Agreed to bank/ credit note
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓

Invoice no.	Description	Invoice date	Net invoice value €	Date paid	Exchange rate €/£	Net invoice value £	Agreed to invoice	Agreed to ledger	Agreed to bank/ credit note
							✓	✓	✓
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓
							✓	✓	✓
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓

Invoice no.	Description	Invoice date	Net invoice value €	Date paid	Exchange rate €/£	Net invoice value £	Agreed to invoice	Agreed to ledger	Agreed to bank/ credit note
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	✓	✓

[illegible]

Invoice no.	Description	Invoice date	Net invoice value €	Date paid	Exchange rate €/£	Net invoice value £	Agreed to invoice	Agreed to ledger	Agreed to bank/ credit note
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓
							✓	✓	N/A
							✓	✓	✓
							N/A	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓

Invoice no.	Description	Invoice date	Net invoice value €	Date paid	Exchange rate €/£	Net invoice value £	Agreed to invoice	Agreed to ledger	Agreed to bank/ credit note
							✓	✓	N/A
							✓	✓	✓
							N/A	N/A	N/A
							✓	✓	N/A
							✓	✓	✓
							N/A	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓

EX-POST COST REVIEW OF RACE BANK OFFSHORE WIND FARM TRANSMISSION ASSETS

Appendix 4

[illegible]

[illegible]

Invoice no.	Description	Invoice date	Net invoice value €	Date paid	Exchange rate €/£	Net invoice value £	Agreed to invoice	Agreed to ledger	Agreed to bank
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓

Invoice no.	Description	Invoice date	Net invoice value €	Date paid	Exchange rate €/£	Net invoice value £	Agreed to invoice	Agreed to ledger	Agreed to bank
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	N/A	N/A

							✓	N/A	N/A
							✓	✓	✓
Invoice no.	Description	Invoice date	Net invoice value €	Date paid	Exchange rate €/£	Net invoice value £	Agreed to invoice	Agreed to ledger	Agreed to bank
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	✓	✓
							✓	N/A	N/A
							✓	N/A	N/A
							✓	N/A	N/A
							✓	✓	✓

[illegible]

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████	██	████	████	████	████	████	✓	✓	✓
████	██	████	████	████	████	████	✓	✓	✓

Invoice no.	Description	Invoice date	Net invoice value €	Date paid	Exchange rate €/£	Net invoice value £	Agreed to invoice	Agreed to ledger	Agreed to bank
████	██	████	████	████	████	████	✓	✓	✓
████	██	████	████	████	████	████	✓	✓	✓
████	██	████	████	████	████	████	✓	✓	✓
████	██	████	████	████	████	████	✓	✓	✓
████	██	████	████	████	████	████	✓	✓	✓

Invoice no.	Description	Invoice date	Net invoice value €	Date paid	Exchange rate €/£	Net invoice value £	Agreed to invoice	Agreed to ledger	Agreed to bank
████	██	████	████	████	████	████	✓	✓	✓
████	██	████	████	████	████	████	✓	✓	✓
████	██	████	████	████	████	████			

[illegible]

Invoice no.	Description	Invoice date	Net invoice value £	Date paid	Agreed to invoice	Agreed to ledger	Agreed to bank
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	✓	✓

[illegible]

Invoice no.	Description	Invoice date	Net invoice value £	Date paid	Agreed to invoice	Agreed to ledger	Agreed to bank
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A

[illegible]

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[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	N/A	N/A
	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	✓	✓	✓
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]			

7 RXPE INVOICE REVIEW

[illegible]

[illegible][illegible]

ABB INVOICE REVIEW

[illegible]

[illegible]

[illegible]

9 INDIRECT COSTS REVIEW

PROJECT MANAGEMENT COSTS

9.1 The Developers have outlined the process for allocating project management costs to the Transmission Assets. The process is as follows:

- employees register their time, usually on a monthly basis, in SAP. Each posting has a document number;
- the document number is linked to an invoice;
- the invoice is paid as part of the total monthly payment to the vendor; and
- the total monthly vendor payment is shown on the bank statement which notes the payment document number.

9.2 As instructed by Ofgem, we selected a sample of five individuals for us to test the above process.

9.3 The Developers have provided details from these five employees' timesheet records. We have traced these to the invoices being raised, posted on the system and paid as follows:

Employee	DE function	June 2017 hours	Rate DKK	Cost DKK	Cost £	Agreed to invoices	Agreed to ledger	Date paid	Agreed to bank
████	Internal	████	████	████	████	✓	✓	15-Aug-17	✓
████	Internal	████	████	████	████	✓	✓	15-Aug-17	✓
████	Internal	████	████	████	████	✓	✓	15-Aug-17	✓
████	External	████	████	████	████	✓	✓	15-Aug-17	✓
████	External	████	████	████	████	✓	✓	15-Aug-17	✓
		████	████	████	████				

10 MOVEMENTS BETWEEN THE COST TEMPLATES

- 10.1 We have been instructed to compare the total Transmission Asset costs as set out in the 11 July 2018 CAT with the total Transmission Asset costs included within the ITV at November 2017, and to obtain explanations for variances between the two dates. The movement is summarised in the table below:

Breakdown of Transmission Assets costs

	CAT Reference	November 2017 ITV £	11 July 2018 CAT £	Movement £
Project common costs	████	████	████	████
Offshore substation	████	████	████	████
Submarine cable supply and installation	████	████	████	████
Land cable supply and installation	████	████	████	████
Onshore substation connection	████	████	████	████
Reactive substation	████	████	████	████
Connection costs	████	████	████	████
Other costs	████	████	████	████
Total capital costs	████	████	████	████
Interest during construction	████	████	████	████
		500,846,432	494,763,801	(6,082,631)

- 10.2 We have sought explanations from the Developers for the reasons for the significant movements in each of the cost categories and these are summarised below:

PROJECT COMMON COSTS

- 10.3 Project common costs have decreased by a net amount of £████ million.

Decrease of £████ million

- 10.4 The largest decrease within this cost category is the release of £████ million of contingency and uncertainties cost, with no contingency provision being included at FTV.

Decrease of £████ million

- 10.5 There was a further decrease of £████ million in relation to consents costs. The Developers explained that these costs were over estimated at ITV and due to the complexity of the regulatory requirements related to export cable remedial works and other consenting matters, it was decided to use more internal Ørsted expertise and management which has resulted in consultant cost savings.

Decrease of £████ million

- 10.6 Additionally, site and commissioning costs have decreased by £████ million due to the efficient closure and early release of construction site and associated functions.

Decrease of £[REDACTED] million

- 10.7 Resource and travel costs have also decreased by £[REDACTED] million as a result of the early release and amalgamation of management roles as scopes neared completion, with greater responsibility being given to the construction team.

Increase of £[REDACTED] million

- 10.8 The above decreases, totalling £[REDACTED] million, have been partly offset by an increase of £[REDACTED] million for geological survey costs in relation to surveys undertaken for remedial cable burials. The Developers explained that post construction survey scope increased due to regulatory requirements, along with an increased OFTO allocation as a result of actual UXO findings.

OFFSHORE SUBSTATION

- 10.9 Offshore substation costs have decreased by a net amount of £[REDACTED] million.

Increase of £[REDACTED] million

- 10.10 OSP fabrication costs have increased by a net amount of £[REDACTED] million, comprising a £[REDACTED] million increase in relation to the JVFI contract and a decrease of £[REDACTED] million as a result [REDACTED]. The increase in JVFI costs is due to the resubmission of jacket costs (of £[REDACTED] million), which was previously disallowed by Ofgem at the ITV stage and increased costs as a result of settlement of variation orders and a settlement agreement. As set out in **Appendix 1** above, we have agreed that the JVFI costs included in the 11 July 2018 CAT reflect the final costs of the contract (with all costs now invoiced and all but £[REDACTED] million being paid).

Decrease of £[REDACTED] million

- 10.11 There has also been an increase in the site running costs of £[REDACTED] million. However, this is offset by a decrease of £[REDACTED] million in the OSP travel costs. This net reduction of £[REDACTED] million is due to increased and more efficient shared provision of meals, transport and facilities provided by the site. As such, individuals are claiming less in travel expenses for food, accommodation, travel and other personal business expenses.

Decrease of £[REDACTED] million

- 10.12 OSP installation costs in relation to the SHL contract have decreased by £[REDACTED] million as a result of a reduction in the forecast for variation orders. As set out in **Appendix 1** above, we have agreed that the SHL costs included in the 11 July 2018 CAT reflect the final costs of the contract (with all costs now invoiced and paid).

Decrease of £[REDACTED] million

- 10.13 There has been a further saving of £[REDACTED] million in accommodation vessel costs due to early release of the vessel due to favourable conditions and better than expected progress.

SUBMARINE CABLE SUPPLY & INSTALLATION

10.14 Submarine cable supply and installation costs have increased by a net amount of £[REDACTED] million.

Increase of £[REDACTED] million

10.15 Costs in relation to the NKT contract for the 220kV cable supply and termination included in CR3 have increased by £[REDACTED] million due to additional spares required and works during outages while working on Z01 and Z02. However, this increase is offset by a decrease of NKT costs included in CR4 of £[REDACTED] million (see paragraph 10.22 below). As set out in **Appendix 1** above, we have agreed that the NKT costs included in the 11 July 2018 CAT reflect the final costs of the contract (with all costs now invoiced and paid).

Increase of £[REDACTED] million

10.16 The Developers explained that the increase of £[REDACTED] million in relation to vessel inspection costs is as a result of more inspections being required because of additional campaigns increasing vessel requirements and checks.

Increase of £[REDACTED] million

10.17 Other miscellaneous installation costs have increased by £[REDACTED] million (including increased survey costs of £[REDACTED] million) as a result of closer management of this activity due to the increased complexity and niche specialisms and expertise required by regulatory authorities, including the Marine Management Organisation (MMO), Natural England, the Environment Agency and the Wash Port Authorities.

Increase of £[REDACTED] million

10.18 A net increase in resource and travel costs of £[REDACTED] million is as a result of an extension in the schedule/scope for remedial cable works and greater oversight required by management required from OWP, due to technical requirements and environmental sensitivities.

10.19 The above four increases (totalling £[REDACTED] million) have been partially offset by a decrease of £[REDACTED] million in relation to the Jan De Nul contract costs.

Decrease of £[REDACTED] million

10.20 Costs for the installation and burial of the export cable in relation to the Jan De Nul contract are £[REDACTED] million lower than the original estimates because of changes to the plans for rock dumping. As set out in **Appendix 1** above, the total Jan de Nul contract costs included in the 11 July 2018 CAT include £[REDACTED] million of accrued costs (yet to be invoiced and paid). We have agreed the total contract costs to the Jan de Nul contract and variation orders, with the exception of variation order [REDACTED] for remedial protection work at a cost of £[REDACTED] million, which is an estimate and not yet signed. The Developers explained that an application has been made to carry out the remaining remedial works but it is waiting for approval from the MMO.

LAND CABLE SUPPLY & INSTALLATION

10.21 Land cable supply and installation costs have decreased by a net amount of £[REDACTED] million.

Decrease of £[REDACTED] million

10.22 As described at paragraph 10.15 above, the decrease of £[REDACTED] million in 220kV cable supply costs in relation to the NKT contract included in CR4 is offset by the increase of £[REDACTED] million included in CR3. As set out in **Appendix 1** above, we have agreed that the NKT costs included in the 11 July 2018 CAT reflect the final costs of the contract (with all costs now invoiced and paid).

Decrease of £[REDACTED] million

10.23 The Developers explained that a decrease of £[REDACTED] million in relation to the 400kV & 220kV onshore export cable installation costs is due to a “better than expected outcome during contract close out” of the J Murphy contract.

Decrease of £[REDACTED] million

10.24 The decrease in landowner agreements costs of £[REDACTED] million is a result of actual costs being lower than those originally budgeted for at ITV. In our ex-ante report we highlighted that the budgeted landowner agreement costs included £[REDACTED] in relation to “Centrica freehold acquisition costs” and no further information was provided to enable us to determine to what these costs related to. We have confirmed that this amount has now been paid and relates to the purchase of the ROW01 onshore substation land freehold, ie a separate cost to any project acquisition costs paid to Centrica.

ONSHORE SUBSTATION

10.25 Onshore substation costs have increased by a net amount of £[REDACTED] million.

Increase of £[REDACTED] million

10.26 Siemens A/S contract costs in relation to the 400kV and 220kV GIS onshore switchgear and control have increased by £[REDACTED] million and £[REDACTED] million respectively (total increase of £[REDACTED] million). The increase in the 400kV GIS onshore costs is as a result of an additional scope of variations, including a time extension (at a cost of £[REDACTED] million) and the use of a crane on site (at a cost of £[REDACTED] million).

Decrease of £[REDACTED] million

10.27 The above increase is offset by a decrease of £[REDACTED] million in relation to “COMPON Install Expected VO”, the scope of which has now been completed under the Siemens A/S contract. The increase in the 220kV GIS onshore costs is primarily as a result of an additional variation order relating to delays.

Increase of £[REDACTED] million

10.28 Travel and resource costs have increased by £[REDACTED] million as a result of the extended time schedule and to accommodate resolution of construction snagging items on the onshore substation and its constituent electrical components.

Increase of £[REDACTED] million

10.29 Onshore substation design costs have increased by £[REDACTED] million, primarily as a result of a variation order for the design of ONSS civil works of £[REDACTED] million which was disallowed by Ofgem at ITV and added back into the FTV by the Developers. However, the Developers have explained that this variation order is still unsigned and has not been invoiced and therefore have agreed to reduce the cost back to the agreed ITV value. As such, we propose an adjustment to decrease the costs included in the 11 July 2018 CAT by £[REDACTED].

Increases of £[REDACTED] million and £[REDACTED] million

10.30 The above increases totalling £[REDACTED] million, along with increased SCADA costs of £[REDACTED] million and increased J Murphy costs in relation to onshore substation civil works of £[REDACTED] million, have been partially offset by a decrease in onshore transformer costs.

Decrease of £[REDACTED] million

10.31 The Developers explained that 400/220kV onshore transformer costs have decreased by £[REDACTED] million as the costs expected to be incurred during installation, as well as costs for critical spares, were over estimated at ITV.

REACTIVE SUBSTATION

10.32 Reactive substation costs have decreased by a net amount of £[REDACTED] million. £[REDACTED] million of this decrease relates to the RXPE contract costs. The Developers explained that the costs for this contract have decreased due to the close management of this contract resulting in [REDACTED].

10.33 As set out in **Appendix 1** above, we have agreed that the total RXPE costs included in the 11 July 2018 CAT reflect the final costs of the contract (with the majority of costs now invoiced and paid, with the exception of £[REDACTED] million of accrued costs in relation to a service and maintenance agreement and [REDACTED] payments).

CONNECTION COSTS

10.34 Connection costs have decreased by a net amount of £[REDACTED] million. As this movement is not considered material to the value of the Transmission Assets, we have not performed any further work in relation to other costs included in the CAT.

OTHER COSTS

10.35 Other costs have increased by a net amount of £[REDACTED] million.

10.36 As this movement is not considered material to the value of the Transmission Assets, we have not sought explanations from the Developers in relation to the small cost movements in travel and resource costs and hedging costs. However, we requested further detail in relation to the estimated external consultant costs totalling £[REDACTED] million, which we were unable to substantiate during our ex-ante review.

10.37 The Developers have provided a breakdown of these costs, which include:

- £[REDACTED] million of legal costs relating to the transfer of the asset to the OFTO and the OFTO transaction of £[REDACTED] million;
- £[REDACTED] million of technical and tax consultant costs;
- £[REDACTED] million of costs associated with undertaking the cost assessment;
- £[REDACTED] million of costs relating to the sale process; and
- a further £[REDACTED] million of 'contingency' for uncertainty in legal and technical fees and OFGEM costs and extensions.

10.38 The Developers have provided an email from the Head of OFTO Transactions which notes that the above budgeted cost costs are considered to be a reasonable estimate in relation to the costs recovered for [REDACTED] at FTV of £[REDACTED] million, given the larger project size, number of project specific issues and risks/additional considerations arising from the PB stage timeline and potential impact of the generator commissioning clause. We recommend that Ofgem should discuss these costs further with the Developers.

INTEREST DURING CONSTRUCTION

10.39 Interest during construction (IDC) has increased by £[REDACTED] million. IDC is outside the scope of this review and therefore no further work has been performed in this area.



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