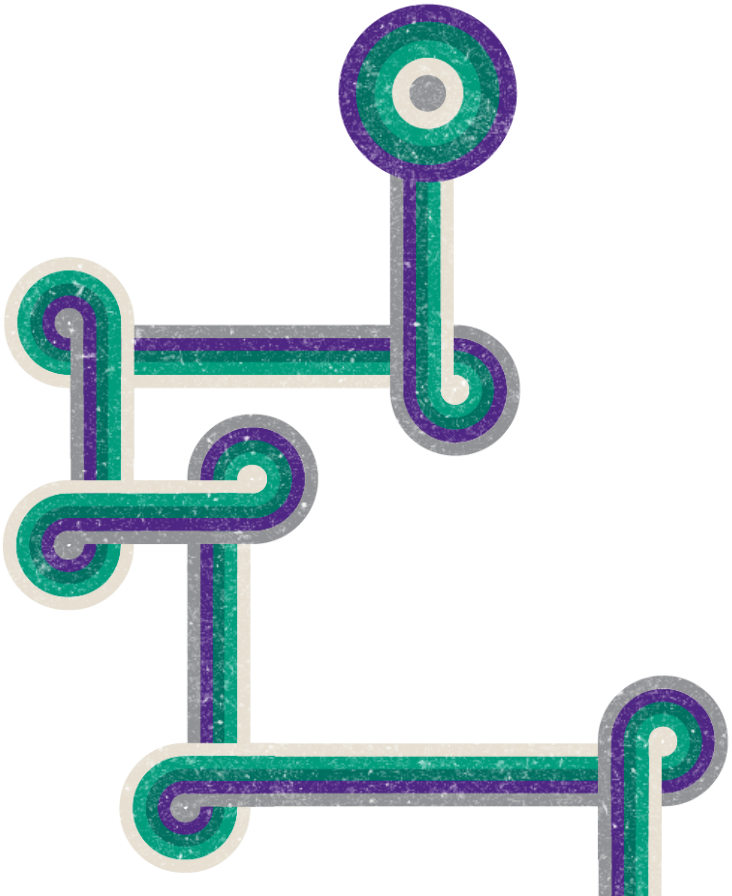
Triton Knoll Offshore Wind Farm Transmission Assets

Ex-Ante Cost Review

5 July 2021



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5 July 2021

Dear Sirs

Triton Knoll Wind Farm Transmission Assets

In accordance with the Call Off Order Form Reference CON/SPEC/2020-15 dated 9 November 2020 between Smith Square Partners LLP and Ofgem, associated task order and Sub-contractor agreement dated 9 November 2020 between Grant Thornton UK LLP and Smith Square Partners LLP, we enclose for your attention our report detailing our findings arising from the Ex-Ante Cost Review of the Triton Knoll Offshore Wind Farm Transmission Assets.

Our conclusions and recommendations are included within the Executive Summary set out in section one, however for a full understanding it is necessary to read this in conjunction with our detailed commentary set out in sections 2 to 12 and appendices A to J.

This report is confidential and has been prepared exclusively for Ofgem. Whilst other parties may be interested in receiving a copy of this report, we stress that, to the fullest extent permitted by law, we cannot accept any responsibility whatsoever in respect of any reliance that these parties may place on our report in any decision that they may make in relation to the Triton Knoll Offshore Wind Farm.

Yours faithfully

Grant Thornton UK LLP 7/7/2021

Glossary

ABB	ABB Limited
AC	Alternating current
AfC	Application for Commitment
AfP	Application for Payment
AIS	Automatic Identification System
AWC	Associated works contractor
BAFO	Best and final offer
Boskalis	Royal Boskalis Westminster N.V.
CAK	Cost Allocation Key
CAR	Contract Award Recommendation
CAT	Cost assessment template
CAT Rev A	CAT submitted by the Developer 23 December 2020
CAT Rev B	Updated CAT submitted by the Developer 28 January 2021
Capex	Capital expenditure
CfD	Contract for Difference
CR	Cost reporting
CTV	Crew Transfer Vessel
DC	Direct current
Developer	TKOWFL
Devex	Development expenditure
EDWA	Early design work agreements
EPCI	Engineering, procurement, construction and installation
EUR	Euro
FEED	Front end engineering and design
FID	Final investment decision
GBP	Great British Pound
GE	UK Grid Solutions Limited (subsidiary of General Electric)
Generation Assets	The generation assets of Triton Knoll
Grant Thornton	Grant Thornton UK LLP
GRN	Goods receipt note
HDD	Horizontal directional drill
HSE	Health, Safety & Environment
HV	High voltage
IDC	Interest during construction
ITT	Invitation to tender
ITV	Indicative transfer value
JDR	JDR Cable System Limited
JMS	J Murphy & Sons
J-Power	The Electric Power Development Company Limited
JUB	Jack-Up Barge
Kansai	Kansai Electric Power Co. Inc
kV	Kilovolt

Glossary (continued)

LCoE	Levelised cost of energy
LV	Low voltage
MHI Vestas	MHI Vestas Offshore Wind A/S
MW	Megawatt
MSD	Management services deed
NGET	National Grid Electricity Transmission plc
NKT	NKT Cables GmbH & Co KG
Ofgem	The Office of Gas and Electricity Markets
OFTO	Offshore transmission owner
OSP	Offshore substation platform
OSS	Onshore substation
PCSA	Pre-construction services agreement
PO	Purchase order
PPL/Prysmian	Prysmian Powerline Srl
PQQ	Pre-qualification questionnaire
PSA	Preferred supplier agreement
PSCAD	Model used in Electromagnetic Transient studies
QHSE	Quality, Health, Safety & Environment
QRA	Quantitative Risk Assessment
RFI	Request for information
RFP	Request for Pricing
RWER	RWE Renewables UK Limited, owned by RWE Ag
SCADA	Supervisory control and data acquisition system
SOC	Siem Offshore Contractors GmbH
SOV	Service operation vessels
STDL	Siemens Transmission and Distribution Limited
TKOWFL	Triton Knoll Offshore Wind Farm Limited
Transmission Assets	The transmission assets of Triton Knoll
Triton Knoll/the Wind Farm	Triton Knoll Offshore Wind Farm
TJB	Transition joint bay
TP	Transition piece
UR	Utilisation request
VBNK	Boskalis and NKT joint venture
VHF	Very high frequency
VO	Variation order
WBS	Work breakdown structure
WTG	Wind turbine generator
3SF	Smulders Smith Steel Foundations B.V.

Contents

Section 1: Executive summary

Executive summary

Introduction

- This report relates to the Triton Knoll Offshore Wind Farm which is owned by RWER, J-Power and Kansai. As the Developer, TKOWFL is managing the project construction and operations, with RWER as the service provider to TKOWFL through a MSD entered into by the companies
- Triton Knoll is a 857MW offshore wind farm, occupying approximately 149km^2 within the Greater Wash strategic area, located off the east coast of England
- Construction of the Transmission Assets is complete. Commissioning was completed in February 2021 and first generation occurred on 26 February 2021. The wind farm will be fully operational in the second half of 2021
- The Transmission Assets will include two offshore substations, two 220kV subsea export cable circuits (approximately 50km in length), which connect to two onshore cable circuits (of approximately 57km in length), one onshore substation, and two 400kV export cable circuits connecting the onshore substation to the National Grid Bicker Fen onshore substation

Grant Thornton review

- Our review and this report is based upon the CAT Rev A and incorporates information and explanations provided regarding the costs in this version of the cost template, both from a virtual meeting and in correspondence with the Developer, up to 15 April 2021
- Grant Thornton has been instructed by Ofgem to review the ex-ante cost assessments prepared by the Developer for the Transmission Assets of the Wind Farm (Ex-Ante Cost Review)
- The Ex-Ante Cost Review has considered the accuracy, completeness and allocation of costs against the cost template prepared by the Developer for the Wind Farm Transmission Assets. The review is based on supporting information and methodology provided by the Developer
- The purpose of this review is to:
  - determine if the Developer's cost estimate requires updating for the next stage of the transfer process, ITT
  - assist in the identification of technical issues by noting 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
  - assist determination of the ITV for ITT by reviewing accuracy, allocation and completeness of cost information
- The Developer's estimate of the cost of the Wind Farm Transmission Assets, included in the CAT Rev A, amounts to £600.74 million. This represents a £11.82 million decrease on the initial cost assessment by the Developer (issued on 8 September 2020) that projected the original cost to be £612.56 million. The Developer's estimated costs of the Transmission Assets, as set out in the CAT Rev A, are summarised in the table below

Transmission Assets cost summary

	CAT Reference	Direct costs £	Contingency £	Total £	%
Project common costs	CR8	[redacted]			
Offshore substation	CR2	[redacted]			
Submarine cable supply and installation	CR3	[redacted]			
Land cable supply and installation	CR4	[redacted]			
Onshore substation	CR5	[redacted]			
Reactive substation	CR6	[redacted]			
Connection costs	CR7	[redacted]			
Transaction costs	CR9	[redacted]			
Total capital costs		[redacted]			
Interest during construction		[redacted]			
Total		**583,704,069**	**17,039,193**	**600,743,261**	**100%**

Executive summary (continued)

Summary of findings

- The Developer has provided us with supporting documentation and/or explanations for the majority of items included within the CAT Rev A. Our review found that all major items of capital expenditure for Transmission Assets have either been procured under contracts specific to the transmission business, or have been procured under contracts specific to the Wind Farm as a whole and have been allocated between the Transmission and Generation Assets using a mix of allocation methodologies that will be considered further in this report
- As part of our line-by-line review of the CAT Rev A, as instructed, we have sought to agree the costs of the transmission business above £100,000 to supporting documentation, representing £531,897,522 (98.94%) (excluding IDC) of the total costs of the CAT Rev A. This included:
  - confirming costs in the CAT to contracts and contract variations orders between the Developer and subcontractors, and to working schedules prepared by the Developer that set how estimated costs within the CAT have been calculated
  - gaining an understanding from the Developer about the determination of costs in the CAT, such as the approach to procurement of main items of expenditure, the allocation of shared costs between the transmission and generation businesses, and the treatment of costs incurred in foreign currencies
- In most cases, we were able to confirm that the costs included in the CAT Rev A were appropriately stated. However, we identified that some costs were incorrectly stated, and as such, we propose adjustments for these costs within the 'Impact of cost assessment' table at the end of this executive summary
- A summary of our testing and cost coverage is set out in the 'Summary of testing' approach table at the end of this executive summary
- Furthermore, there are some areas which we draw to Ofgem's attention, and these are detailed in the table on the following pages

Conclusion

- Based upon our review, subject to the items included in the "Impact of cost assessment" table, the "unsubstantiated costs" table and the matters highlighted in the "Matters requiring further consideration by Ofgem" tables, we consider that the costs of the Transmission Assets included in the CAT Rev A appear to be appropriately stated

Executive summary (continued)

Matters requiring further consideration by Ofgem

Area	Further information	Grant Thornton observations
Transaction costs – CR9 • Supporting information for an amount in the CAT	• We have not been provided with any supporting information for the legal transaction costs of £[redacted] included within CR9. Further, we have not been provided with sufficient supporting information for £[redacted] of the internal transactional support costs included within CR9	• Whilst we consider the inclusion of transaction costs in the ITV to be reasonable, absent further information, we are unable to say whether the these costs are reasonable • Accordingly, we recommend that Ofgem should obtain further information from the Developer before accepting these costs
Contingency • Validation of contingency provision	• The CAT includes a contingency of £[redacted] ([redacted]% of pre contingency capital costs excluding IDC) which the Developer has calculated based upon its assessment of risks associated with the construction of the Transmission Assets, the likelihood of such risks being realised and an estimate of the costs involved in these circumstances • In addition to the 'allocated contingency' from the risk register, the project also holds 'unallocated contingency' for unknowns. This unallocated contingency amounts to £[redacted] of the total £[redacted] and has been distributed proportionally between each CR category • The Developer has used Monte-Carlo simulation to generate a probability distribution of contingency values	• We have reviewed the summary of risks set out in the risk register and consider that the types of risks and the amounts allocated to each risk look reasonable • Based upon our experience of similar projects, the Monte-Carlo approach taken for the calculation of contingencies is in line with what we have seen on previous projects • Likewise, in light of the level of completion of the Transmission Assets, the percentage of contingencies as a proportion of total capital costs is in line with what we have seen on similar projects • However, 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 • We note that by the time of the ex-post cost assessment (the Ex-Post Review), the value of the contingencies is expected to fall to zero, as at this stage all costs will be known • Accordingly, we recommend that Ofgem should obtain an update of the contingency provision from the Developer prior to finalising the ITV

Executive summary (continued)

Matters requiring further consideration by Ofgem (continued)

Area	Further information	Grant Thornton observations
Areas requiring technical input • Time spent by internal staff	• In order to substantiate resources costs totalling £[redacted], the Developer has provided detailed schedules of the forecasted time for personnel to spend on the Transmission Assets, which includes actual and forecast costs together with schedules of rates by project role by month • We have agreed the rates for resources costs to the MSD	• We have performed a high level review of the resource plan provided to assess the accuracy of the costs, however, it is not within our area of expertise to establish whether the time spent by the internal staff and the rates used are reasonable • Further, the resource plan provided supports £[redacted] in relation to the OFTO allocation of time based resource costs (as at October 2020). The additional £[redacted] relates to forecast expenses and contingency within the approved budget and is included within CR8. We recommend that Ofgem should obtain an update on this from the Developer prior to finalising the ITV • We recommend that Ofgem should consider instructing technical advisors to review the resources time and rates in order to determine whether these costs are being reasonably incurred
Cost allocation	• The majority of costs relating to the Transmission Assets are fully attributable to the Transmission Assets • However, where costs are not directly attributable to the Transmission Assets, the Developer has allocated costs using various CAKs depending on the nature of the costs, namely: – Cost Based (CAK 1) is applied to non-specific Capex where the other allocation methods are not considered appropriate. The Developer has provided a high level calculation of this rate derived at 25% being the total costs of the OFTO main works contracts divided by the total costs of the Capex Main works contracts – Resource Based (CAK 2) of [redacted]% is derived from OFTO allocation percentages applied to each of the roles in the resource plan. This is then applied to costs where it is reasonable to allocate indirect costs based on how much direct project team time is spent on different assets – Area Based (CAK 3) is applied for costs where there is a clear geographical area in relation to the costs incurred. This is split into Pre-Construction (CAK3.1) and In-Construction (CAK3.2) and the rates derived by the Developer are [redacted]% and [redacted]% respectively	• Whilst the general allocation rate of 25% is consistent with that seen on previous projects, the Developer has only provided us with a high level calculation of the CAK 1 allocation rate, such that we are unable to establish whether the amount of the Transmission Assets capital costs accords with the Transmission Asset capital costs included in the CAT • Accordingly, we recommend that Ofgem should consider this further and see whether it is able to obtain a more detailed calculation from the Developer • Whilst the allocation methodologies used by the Developer for the Resource Based CAK are consistent with those seen on previous projects, at [redacted]%, this allocation rate derived is much higher than we have seen on previous projects • We note that the Developer has explained that the resources costs have been allocated based on actual time spent as recorded in timesheets, and are trued-up each month, and discussions on previous projects have highlighted that the amount of time spent by project teams on the Transmission Assets as a proportion of total time can be higher than the proportion of CAPEX • However, in light of the higher allocation rate, we recommend that Ofgem should discuss cost allocation further with the Developer and instruct technical advisors to assess the reasonableness of the allocation rates applied

Executive summary (continued)

Summary of testing approach

	Total costs £	Substantiated £	Unsubstantiated £	Under £100,000 £
Project common costs	[redacted]			
Offshore substation	[redacted]			
Submarine cable supply and installation	[redacted]			
Land cable supply and installation	[redacted]			
Onshore substation	[redacted]			
Reactive substation	[redacted]			
Connection costs	[redacted]			
Transaction costs	[redacted]			
Total	**537,569,686**	**530,025,808**	**1,871,714**	**5,672,164**
% of total costs	100%	98.60%	0.35%	1.06%

Impact of cost assessment

	CAT reference	Section	£
Cost of Transmission Assets per CAT dated 23 December 2020 (excluding IDC)			537,569,686
Adjustments where the amount verified differs to the amount included in the CAT			
Decrease in Devex costs due to items removed from the Devex schedule	CR8	5	[redacted]
Decrease in Devex costs due to items removed from the Devex schedule	CR8	5	[redacted]
Decrease in Devex costs due to items removed from the Devex schedule	CR8	5	[redacted]
Decrease in costs due to surplus forecast costs	CR3	7	[redacted]
Decrease in costs due to non OFTO items in relation to wind farm communications removed from the cost assessment	CR3	7	[redacted]
Increase in costs due to correction of the allocation rates applied to Geotechnical Services	CR8	5	[redacted]
Increase in costs due to additional Onshore Ecology Environmental Impact Assessment costs identified	CR8	5	[redacted]
Decrease in costs due to insurance costs removed from the cost assessment	CR8	5	[redacted]
Developer adjustments where the amount has been updated in CAT Rev B			
Decrease in Devex costs due to updated allocation rates in revised Devex schedule and revision of land transactions costs within Devex	CR8	5	[redacted]
Decrease in costs due to updated allocation rates used in CAT Rev B	CR8	5	[redacted]
Increase in costs due to change in allocation method for foundation supply	CR2	6	[redacted]
Increase in land transaction costs due to items ommitted in previous version of the CAT	CR4	8	[redacted]
Total adjustments			(2,304,534)
Revised cost of Transmission Assets			**535,265,152**

Executive summary (continued)

The below unsubstantiated costs, are costs that are included in the CAT Rev A which have not been verified by Grant Thornton due to the level of supporting documentation provided by the Developer being insufficient to form a view as to whether the cost estimates have been calculated on a reasoned basis:

Unsubstantiated costs

	CAT reference	£
Shared - Offshore (Partially substantiated)	CR2	[redacted]
Land Transactions - Land Agent and Other	CR4	[redacted]
Land Transactions - Landowner Liaison	CR4	
Crop Losses	CR4	
Shared - Onshore (Partially substantiated)	CR5	[redacted]
Shared - Onshore (Partially substantiated)	CR6	[redacted]
Shared - Offshore (Partially substantiated)	CR6	[redacted]
Forecast internal transactional support	CR9	[redacted]
LEGAL - OFTO Transactional	CR9	[redacted]
Total		**1,871,714**

Section 2: Introduction and background

Instructions and background

Instructions

- Grant Thornton has been instructed by Ofgem to prepare an Ex-Ante Cost Review of the cost information and cost templates prepared for Ofgem by the Developer in relation to the Transmission Assets
- As instructed, in this review we established whether the costs greater than £100,000 provided in the Developer's cost template can be matched to specific contracts or other supporting information. Further, we ascertained whether appropriate metrics exist for cost allocation between transmission and generation assets
- Our work involved tracing the amounts stated in the CAT to supporting contracts, schedules and other supporting information that shows how costs have been derived. The review also involved a virtual meeting with the Developer in order to discuss the information provided, together with the basis for the cost allocation metrics used
- The purpose of a review at this stage is to:
  - determine if a developer's cost estimate requires updating for the next stage of the transfer process, ITT
  - assist in the identification of technical issues by noting 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
  - assist determination of the ITV for ITT by reviewing accuracy, allocation and completeness of cost information
- The Ex-Ante Cost Review is based upon the Developer's current estimates of the costs to be incurred in developing and constructing the Transmission Assets. Following construction of the Wind Farm, we expect to carry out a forensic review of the actual expenditure incurred by the transmission business (the Ex-Post Review)
- Grant Thornton's review of the Ex-Ante cost information prepared 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
- Our review and this report is based upon the cost template submitted to Ofgem on 23 December 2020 and incorporates information and explanations provided regarding the costs in this version of the cost template, both during our meeting with and correspondence with the Developer up to 15 April 2021
- 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
- This work does not constitute an audit performed in accordance with Auditing Standards
- 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 information we have relied upon are not established as accurate, it may be necessary to review our conclusions
- The report has been prepared using Microsoft Excel. The report may contain minor rounding adjustments due to the use of computers for preparing certain calculations

Background

- TKOWFL is owned by RWER (59%), J-Power (25%) and Kansai (16%). Through an MSD with TKOWFL, RWER has responsibility for managing construction of the Wind Farm and will also continue to manage the operations on behalf of the shareholders
- The lease to develop the Triton Knoll site was awarded by The Crown Estate under the Round 2 tender in 2003, with planning consent to develop the offshore elements of the wind farm being granted in 2013
- The Triton Knoll site is approximately 149km^2, located within the Greater Wash strategic area, off the east coast of England, approximately 20 miles off the coast of Lincolnshire and 28 miles from the coast of north Norfolk. The offshore and onshore electrical infrastructure connect the Wind Farm to the electricity network. Sub-sea export cables from the offshore wind farm make landfall just north of Anderby Creek, with the power entering the electricity network at Bicker Fen Substation, near Boston, via a network of underground cabling

Background (continued) and purpose and method of the review

Background (continued)

- The 857MW wind farm comprises 90 MHI Vestas V164-9.5 MW WTGs rated at 9.525MW, which are supported by monopole foundations located in water depths of between 15 metres and 24 metres. The WTGs are connected to the two 66kV/220kV OSPs by 66kV array cables, which are arranged in a radial branch formation
- The Transmission Assets include two offshore substations (including two 220/66kV transformers and 220kV switchgear), two 220kV subsea export cable circuits (each approximately 50km in length), which connect to two onshore cable circuits (each approximately 57km in length) at the TJB, one onshore substation, and two 400kV export cable circuits (approximately 2km in length) connecting the onshore substation to the existing National Grid Bicker Fen 400kV onshore substation
- The main supply and installation contracts, the Tier 1 contracts, are:
  - WTG supply
  - Foundation supply
  - Transportation and Installation contracts (WTG, Foundation and OSP)
  - Cable contracts (onshore, offshore export, offshore array) – supply and installation
  - Substation contract
- Construction of the Transmission Assets is complete and the Wind Farm will be fully operational in the second half of 2021
- The Transmission Assets are expected to deliver an availability of 97.58%, taking into account both planned and unplanned maintenance

Purpose and method of the review

- The main purpose of the Ex-Ante Cost Review of the Wind Farm's Transmission Assets is to:
  - determine if a developer's cost estimate requires updating for the next stage of the transfer process, ITT
  - assist in the identification of technical issues by noting 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
  - assist determination of the ITV for ITT by reviewing accuracy, allocation and completeness of cost information. In particular:
    - whether the costs as set out in the Developer's cost template for the Transmission Assets are appropriately stated to use in the cost assessment
    - whether costs not directly attributable to either the Generation or Transmission Assets have been allocated to each on a reasonable basis
- The starting point in our review of the cost information was the CAT Rev A which is based upon the Developer's estimates of the costs of the Transmission Assets for the October 2020 reporting period
- Our review has considered confirmation that costs included in the CAT Rev A 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 upon:
  - whether the costs can be directly attributed to either the transmission or generation businesses (as in the case of the main capital contracts)
  - what is considered the main driver behind the relevant development or project management cost (this is usually capital cost or the degree of time/activity required in relation to different components of the Wind Farm development)
- 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 the costs included in the CAT Rev A to actual payments, as that will be done for selected contracts as part of the Ex-Post Cost Review

Section 3: Triton Knoll processes

Introduction, decision making process and procurement

Introduction

- In this section, we set out the processes that 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
- 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:
  - competitive tendering
  - specific planning and budgeting tools, including building on experience obtained from similar projects
  - controls over variation orders and large expenditure items

Decision making process

- The decision governance in the Triton Knoll project is set out in the Management of Change Procedure document which ensures management oversight to all budget increases and drawdowns from contingency, in addition to interface, programme, legislative or other material changes
- The Delegation of Authority levels are:
  - up to £750,000 - Change Approvers (Senior Project Manager and Finance Director must both agree)
  - > £750,000 – the Senior Manager is responsible for escalating change requests for approval to the Project Director
- All CAR papers have to be sent to the Project Director, Finance Director and Deputy Project Director. These will then be signed by two of three, with contracts generally signed by the Project Director. Any CAR that exceeds £2 million must be approved by the project board
- As the Tier 1 contracts were executed when the project was owned by Innogy, the approval to enter into the Tier 1 contracts was granted as part of the approval of the Financial Investment Decision by the Innogy SE board in May 2018

Procurement process

- The overall procurement strategy used by Triton Knoll was developed in 2015 and approved in January 2016 by the joint venture consortium of Innogy and Statkraft

Multi-contract strategy

- The Triton Knoll Information Memorandum explains that TKOWFL's contracting strategy aims at achieving the optimum balance between limiting the number of contracts and selecting competent contractors working within their knowledge and experience areas
- During the procurement phase the approach to the market for the main work packages was carried out by one of the following methods: RFI enquiries, RFP enquiries, PQQ, ITT and/or use of frameworks
- A contract strategy was prepared by each Package Procurement Manager and approved by the Package Manager, Procurement Manager and Project Director prior to issue of an ITT
- The contracting strategy was to tender individually for the array cables, export cables and onshore cables, with tenders being invited individually on the basis of a design and fabrication being combined and a separate tender for installation of the individual cable packages. For the onshore and offshore substation it was more granular with the design, fabrication and installation being tendered as individual contracts. The switchgear was captured by additional lots, the engineering and fabrication of the switchgear was combined and installation of the switchgear was a separate lot
- Following a competitive procurement process which allowed initially separated contracts to be amalgamated in accordance with offers received and the evaluated strengths of the supply chain, TKOWFL has adopted a limited multi-contract strategy
- The Transmission Assets are being built using five main contracts (including three EPCI contracts for the onshore export cables, offshore export cables and the electrical systems infrastructure) and a contract for the National Grid Unlicensed Works. It is considered that the multiple contract approach balances the interface risk between the project and the contractors and thus achieves a good balance between cost and risk

Procurement process (continued) and accounting and budgeting process

Procurement process (continued)

Competitive tendering

- 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 main elements of construction of the Wind Farm
- Details of the contract strategy for the onshore cables contract, offshore cables contract and the onshore and offshore substation contracts including the use of a competitive tendering process are set out in Appendix B
- The final selection of preferred bidders was made using an evaluation model, which typically focuses on costs, contractual terms and conditions, technical solutions and QHSE. This model is adapted for each contract on a case by case basis, with the detailed weighting for each package being varied to take account of factors such as the profile of the package up for tender, and is based upon the experience from former tenders, executed contracts and the market situation
- As part of our work we have reviewed the tender evaluation documentation in relation to these contracts, including the reason behind the award for each contract and ensured the processes are in line with the overall Procurement Strategy

Contracting

- All construction contracts for the Triton Knoll project are entered into by TKOWFL

Accounting and budgeting process

- As service provider for the Wind Farm (under the MSD with TKOWFL), RWER provides the accounting team that supports the Wind Farm project and undertakes the budgeting process
- RWER operates a SAP system for the Wind Farm, with a WBS coding system to assign costs of the Wind Farm and allocate responsibilities to packages
- An Excel based Cost Book is managed by the cost engineering function to report forecast costs, cash utilisation and profiled future requirements in each period for each package of works
- Inputs to the Cost Book are based upon:
  - actual costs to date, being derived from payment applications and/or invoices received, and
  - monthly meetings with the package managers assisted by their contract managers, responsible for their respective contracts for the future profiled spend
- The Cost Book is set up with costs profiled on the basis of when the Wind Farm expects to pay its suppliers for contract payment milestones achieved or work achieved and completed. It is used to measure actual costs against the original estimated costs and provide a comparative view of the current costs and costs to project completion
- The Cost Book is a live workbook used to inform the monthly commercial report (which forms part of the Construction Report, which is used to inform internal and external stakeholders of the project`s current position). Once a reporting period is completed, the Cost Book is saved and then copied over for the next period
- Actual costs are added to the Cost Book once a UR has been prepared, reviewed and signed off by the Lender's Technical Advisor. This represents when the project has drawn down the funds to pay the vendors for a given month
- The UR is prepared by the cost engineer with input from the Commercial Administrator, Financial Controller and reviewed by the Finance Director prior to issue to the Lender's Technical Advisor. The UR is based upon supplier applications for payment, timed (contractually) such that receipt by the fifth working day of the month allows the UR to be agreed five business days prior to the last business day of the month for receipt of cash on the last business day of the month, for payment of all invoices in the following month

Cost controlling

- As a consequence of updating the Cost Book with the actual costs from the UR, any differences in the forecasted amount for spend willl be identified and therefore the re-phasing of the budget line is considered

Accounting and budgeting process (continued)

Accounting and budgeting process (continued)

Cost controlling (continued)

- Monthly review meetings are arranged by the cost engineer with each responsible package manager and their contract manager to review and update their package forecasts. Expected progress is reviewed against plan or contract milestones, valuations made and variations issued. If the forecast commitment is greater than the approved budget, then the budget is updated within the project Cost Book by way of the Management of Change process (as set out in the Management of Change Procedure document), drawing budget from contingency

Management of Change

- As part of the updates to the Cost Book, the cost engineer must review all of the project approved change notes under the Management of Change process in the reporting period
- Only approved change notes covering budget increases and budget transfers can be added to the Cost Book to adjust the final costs for a contract sum or specific scope of work
- The cost engineers are involved in the process of reviewing the change note approvals so are aware of any potential changes to the forecast. However, the change manager provides an up to date register summarising all of the approved changes and this shows the movements within a package, between packages or between a package and contingency
- The cost engineers are closely aligned to the risk manager to ensure that once a change note is approved, the risks and budget position are updated within the same reporting period

Invoice and approval process

- The Developer operates a rigid invoice and purchase order approval process to ensure that payments are made in accordance with the payment process. The process details what information is required by the project and relevant persons and how that information is managed and expedited through each stage from receipt of the supplier's AfP through to invoice payment, as summarised below
- Purchase orders
  - a request is made by the package manager for a PO, for the costs expected to be incurred, to be raised using the AfC process which is managed by the commercial administration team
  - the AfC process runs a number of checks, including budget availability before the being circulated for approval. If the budget is not yet in place, the separate change process will need to approve funding of the item before coming back to the AfC process to raise the PO
- Application for Payment
  - a supplier must issue an AfP (in the agreed format) to the AfP mailbox and copy in any relevant persons involved in that work stream. The AfP must include a breakdown of the amount applied for such as hours via timesheets, delivery receipts, signed certification and any other relevant documentation used for proof of vendor expenditure
  - the commercial administrator will monitor the AfP mailbox on a daily basis and log any received AfPs (invoices) into the AfP register
  - the AfP register is populated with the details from the suppliers AfP
  - in some instances, where the use of an AfP is not appropriate eg one off supplier payments or low value procurement of services or materials, the vendor may raise invoices without an AfP and the invoice details are used. Invoices received in this way will be viewed internally as being equivalent to the AfP from the supplier and will therefore follow the same approval steps as outlined below
  - the package/contract manager will review the contents of the supplier's AfP to ensure the data aligns with current achieved progress and contract milestones. Providing the reported work scope is acceptable and the package manager is satisfied that the work has been executed to the required standards, then the AfP can be authorised

Accounting and budgeting process (continued)

Accounting and budgeting process (continued)

Invoice and approval process (continued)

- Application for Payment (continued)
  - for Tier 1 contracts, the package/contract managers have 14 days to review the AfP and then draft and issue a relevant payment certificate
  - where the scope of work falls outside of the Tier 1 contracts, the package manager must make a request via the AfP mailbox for a payment certificate to be drafted and prepared by the procurement co-ordinator
  - for invoices, the commercial administrator will forward the invoice to the relevant person and will request them to review, approve/reject the invoice and if approved, make a request via the AfP mailbox for a payment certificate to be drafted and prepared by the procurement co-ordinator
  - in order to track the management of expected AfPs and payment certificates, a list of live POs is downloaded from SAP. For each PO, the following is set out:
    - vendor name
    - a description of works
    - technical officer
    - procurement/commercial approver
  - this list is then reviewed on a monthly basis to update for new POs, closed POs and/or to update for new approvers following resource adjustments
- Payment certificate
  - payment certificates must set out the amount the supplier can invoice for and any other relevant invoicing instructions (as detailed in the contract)
  - should the package manager have any concerns or disagree with the work scope or value contained within the AfP, they are able to make their own assessment and give reasons for the amendment including reference to any documentation substantiating the changes made within the drafted payment certificate
  - the payment certificate requires the following two signatories:
    - the AfP requestor linked to the PO on the payment certificate, typically the technical officer
    - the contract/procurement manager
  - in the event the contract/procurement manager is not available, then the relevant member of the Project Leadership Team can authorise and sign or in the event that procurement were not involved with the contract set up, the second signatory would be the Finance Director
  - once the payment certificate is fully authorised, a scanned version can be issued to the supplier, complete with invoicing instructions. A copy of the payment certificate issued must be sent to the AfP mailbox
- SAP Goods Receipt Note
  - the commercial administrators will pick up the payment certificate from the AfP mailbox allowing them to GRN the final value in SAP
  - the SAP administrator must align the payment certificate to the supplier, PO number and WBS code in SAP and the payment certificate must be uploaded into SAP as backup for the entry
- Invoicing
  - upon receipt of the payment certificate the supplier is entitled to raise their invoice for the full amount approved
  - to be processed for payment, an invoice must include
    - PO number
    - the amount applied for
    - VAT amount (if applicable)
    - description of works
    - cost certified to date (split OFTO/Non OFTO)
    - a deduction for any amount previously certified
    - VAT registration number

Cost accounting and allocation methodology

Cost accounting and allocation methodology

- The CAT Rev A has been prepared using the forecast total costs from the Cost Book for the October 2020 reporting period
- Each package has been assessed as to whether the package relates entirely to Transmission or Generation Assets, or to the Wind Farm as a whole (shared costs) and then the total project costs input into the respective section of the CAT (in both project utilised currencies (GBP and EUR))
- An OFTO allocation percentage is then applied to the total costs based upon the below cost allocation methodology

Cost allocation methodology

- Where project costs are not fully attributable to the Transmission Assets, ie they relate to the Wind Farm as a whole (shared costs), estimates have been made of the proportion of the costs that should be attributed to the Transmission Assets based on the nature of the shared costs
- Shared (or indirect) 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 eg procurement, cost control, health and safety
  - general consultants eg legal/environment and consent
  - SCADA equipment benefitting both the Transmission and Generating Assets
- Triton Knoll has developed allocation keys to allocate specific shared costs depending on their nature. Cost allocation of shared costs has been performed using several different CAKs. Further detail on our review of cost allocation is set out in the next section

Section 4: Costs common to the Transmission Assets as a whole

Introduction and resourcing costs

Introduction

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

Resourcing costs

- The CAT Rev A includes approximately £[redacted] relating to the time costs of project management resource on the project, including time spent by both RWER employees and contractors on the Transmission Assets, as summarised in the table below

Resource costs

	£
[redacted]	

- The Developer has provided a copy of the resource plan, an Excel spreadsheet which lists all project roles, durations, rates, shift pattern derived estimated working days and inflation (as per the governing MSD), by type of personnel to calculate a forecast total cost by month across the relevant personnel categories
- Each role in the resource plan is also assigned an estimated OFTO percentage allocation based upon their role (cost category). The allocation percentages used are set out in the table on page 28
- For roles such as general management, which are unable to be assigned using the specific allocation rates described in the table on page 28, a sub-CAK (the 'Management CAK') is assigned. The 'Management CAK' (also set out in the table on page 28) is derived monthly from those roles than are assignable to OFTO/non-OFTO assets
- The estimated OFTO allocation percentages are assigned to each resource line to derive the OFTO resource cost. These percentages are 'trued up' retrospectively using the timebooking system derived actual OFTO percentage per role per month
- The result is a monthly OFTO allocation percentage (Resource Based allocation – CAK 2) that is applied to the appropriate section of the Cost Book (C.1.1.01.01A-04A) and areas associated to personnel eg expenses, office costs, IT and software. The Developer has calculated and applied a Resource Based allocation rate (CAK 2) of [redacted]% in the 23 December 2020 CAT. This is considered further under cost allocation below
- We have agreed the calculations of total resources costs and where applicable the daily rates used have been agreed to the MSD
- The Developer confirmed that no profit element is included within internal staff costs and contractor's rates are at cost plus 10% to cover administration costs and other overheads such as IT costs
- However, as the spreadsheets provided by the Developer are complex, we have only performed a high level review of the detailed workings in order to confirm the process described by the Developer
- Furthermore, although the rates used appear to be reasonable, we do not have the technical expertise to determine whether the time spent or rates used are economically or efficiently incurred, and therefore we recommend Ofgem's technical advisers should review the spreadsheets in order to assess whether the amount of time spent and rates are efficiently incurred and that the percentages allocated to the Transmission Assets are reasonable

Interest during construction, boundaries and contingencies

Interest during construction

- Interest should be included within the Transmission Assets costs up to the end of construction (after which, the project is expected to be generating power)
- The Developer's current interest cost for the construction period of the Transmission Assets totals approximately £[redacted]. For the avoidance of doubt, we have not verified the Developer's assessment of interest during development or construction, as this is outside the scope of our review

Boundaries used for the purposes of cost allocation

- The Triton Knoll Information Memorandum confirms the boundary points of the Transmission Assets as follows:

Offshore

  - on the HV export circuits at the termination of the 66kV busduct from the Grid Transformer to the 66kV switchgear (ie busduct and termination will belong to the OFTO and the entire 66kV switchgear will belong to the offshore wind farm)
  - the main LV side boundary will be located at the low voltage side of the auxiliary transformer behind the transformer LV circuit breaker, ie the cable will belong to the OFTO, the circuit breaker will belong to the offshore wind farm
  - the LV AC boundary point will be located on the feeder from the main LV AC board to the offshore wind farm LV AC system
  - the LV DC boundary points will be located behind the AC/DC converters

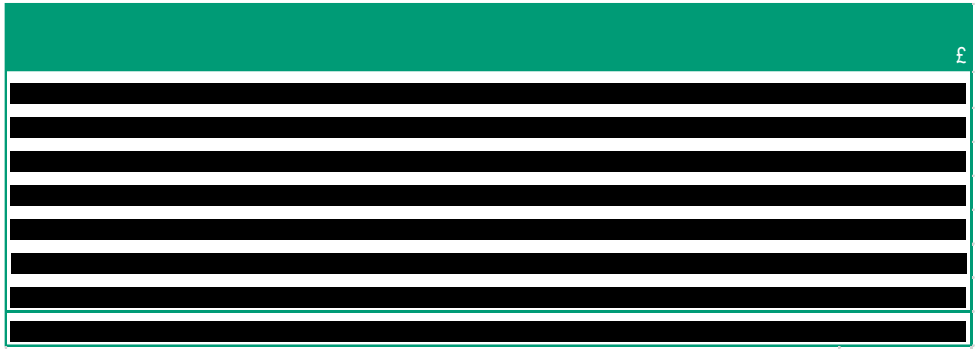
Onshore

  - NGET Substation - located at the NGET substation at Bicker Fen, where NGET's 400kV substation will include two 400kV OFTO owned circuit breakers. The boundary will be between NGET owned busbars and OFTO owned circuit breaker bays (at busbar clamp to the disconnectors). The two circuit breakers, and 'downstream' assets at the Onshore Substation will be part of the Transmission Assets
  - Onshore Substation - on the OSS LV AC feeders from the main LV AC board to the Wind Farm loads

Contingencies

- The CAT Rev A includes a contingency provision of £[redacted] ([redacted]% of pre contingency capital costs excluding IDC) , as summarised in the table below

Contingencies



- The contingency provision included in the CAT Rev A is based on the risk register at October 2020
- The Developer has calculated the contingency provision based upon its assessment of risks in relation to the Transmission Assets (and a share of common costs where appropriate), with the contingency amounts being calculated by multiplying the expected amount which would be incurred if the risk materialised, by the probability that the risk will materialise
- The package managers are responsible for identifying all potential risks in connection with their specific packages, based upon issues that have arisen from previous projects, and then with support from the project risk manager, they estimate the probability of the risk materialising and the cost

Contingencies (continued)

Contingencies (continued)

Calculation and OFTO allocation

- Each risk is assessed using a three-point estimate of cost and/or programme impact, referred to as the low, central and high cases and considered as a minimum, most likely and maximum values should the threat materialise
- The initial contingency amount will be derived via Quantitative Risk Assessment, which takes the average of 1 x min, 4 x most likely and 1 x max and applies a probability factor
- The contingency reported within the project is scenarios based using a Monte Carlo simulator to generate a probability distribution of contingency values, each run using a total of 10,000 iterations
- The Developer has provided a schedule containing the full risk register with the expected monetary value, OFTO categorisation and OFTO allocation based upon that category and the risk description
- This leads to a calculated [redacted]% OFTO allocation based upon the entire risk register
- In addition to the 'allocated contingency' from the risk register, the project also holds 'unallocated contingency' for unknowns. This unallocated contingency amounts to £[redacted] of the total contingency provision of £[redacted] and has been distributed proportionally between each CR category
- The Developer has provided us with the Risk Management Plan that sets out the approach to quantifying risks and the key risks by area, alongside a schedule (an extract of the risk register) setting out a breakdown of the contingency provision between the different aspects of the Transmission Assets as summarised below

Offshore substation

- Contingencies of £[redacted] in relation to the offshore substation have been made to cover risks related to:
  - COVID-19 and weather related delays and downtime
  - coating remediation works
  - Marine coastguard agency requirements for AIS, VHF and Weather Data
  - OSP hook-up and commissioning

Submarine cable

- Contingencies of £[redacted] in relation to the submarine cable have been made to cover risks related to:
  - replacements for defective 220kV bushings
  - landfall HDD ground conditions
  - presence of chalk on export cable route
  - impact of COVID-19 quarantine and testing by VBNK
  - OSP not adequately prepared prior to the commencement of the Export Cable installation
  - additional post lay survey requirements

Onshore cable

- Contingencies of £[redacted] in relation to the onshore cable have been made to cover risks related to:
  - COVID-19 delay at TJB interface
  - landfall Transition Joint design and testing issues
  - tidal breach
  - additional site maintenance costs
  - landowner claims for crop loss (greater than budget)

Onshore substation

- Contingencies of £[redacted] in relation to the onshore substation have been made to cover risks related to:
  - OSS commissioning extends client resource requirements
  - employer delays to onshore substations works

Contingencies (continued), global discounts, related party transactions and cost allocation

Contingencies (continued)

Onshore substation (continued)

- transient studies re-run (PSCAD model)
- offsite disposal of stone

Connection

- Contingencies of £[redacted] in relation to connection costs have been made to cover risks related to Modification Application, being the process for requesting a change to the electricity connection offer from National Grid, and cancellation charges

Other

- Contingencies of £[redacted] in relation to other items have been made to cover risks related to:
  - additional or longer use of SOV
  - additional CTV duration and costs due to Siemens completion
  - increase in third party legal costs
  - SOV crane repairs delay
  - additional resource requirements
  - COVID-19 and Brexit disruption and tariff increases
- By the time of the Ex-Post Review, the value of the contingencies will fall to zero, as all costs will be known by this stage
- We have reviewed the risk provisions included within the list of contingencies in relation to the Transmission Assets, which appear reasonable provisions concerning the Transmission Assets at the time of the CAT submission, and the percentage of contingencies is not out of line with what we have seen on other projects. However, 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

Application of overriding global discounts

- The Developer has confirmed that no global discounts have been obtained in the course of the project

Related party transactions

- The Developer has confirmed that there have been no related party transactions in the course of the project

Cost allocation

- Where costs are not directly attributable to either the transmission or generation business (shared/indirect costs), the Developer has allocated costs to the Transmission Assets using different CAKs. Each key is used depending on the nature of the indirect costs and the Developer explained that in order to facilitate sufficiently accurate allocation of costs, it has developed several of these allocation keys
- The table on the following page sets out a summary of the various CAKs and their application, with each one being considered in further detail below (excluding CAK 5, CAK 6, CAK 8 and CAK 11 which relate to direct costs and CAK 9 and CAK 10 which have not been applied in the CAT Rev A)

Cost based CAK (CAK 1)

- The allocation rate of [redacted]% is derived from the total costs of the OFTO main works contracts (Electrical Systems, Onshore Cables, Export Cables and OSP elements of Foundations) divided by the total costs of the Capex Main works contracts (Electrical Systems, Onshore Cables, Foundations, Turbines, Exports and Arrays)
- The Developer has explained that this rate is applied to non-specific Capex where the other allocation methods are not considered appropriate. We have verified the high level calculation of the allocation provided by the Developer for OFTO main contract expenditure as a proportion of total capital expenditure, and this appears to have been determined in line with the stated methodology
- This methodology and resulting allocation rate is in line with the cost based CAK seen on previous projects

Cost allocation (continued)

Cost allocation (continued)

Cost Allocation Keys

CAK	Title	Allocaiton rate	Use
CAK1	Cost Based	[redacted]%	General allocation rule for shaed costs where the other allocation methods are not conidered appropriate e.g. Insurance, advisory, cross project engineering
CAK2	Resourced Based	[redacted]%	Applied to all project management costs from the project resource plan that is not directly booked to either Generation or Transmission
CAK3.1	Area Based: pre-construction	[redacted]%	To allocate offshore site costs based upon the area in pre-construction e.g. Pre-Construction Surveys
CAK3.2	Area Based: in- construction	[redacted]%	To allocate offshore site costs based upon the area e.g. Construction period Surveys, Consenting, Fisheries
CAK4.1	Foundations (Supply)	[redacted]%	Foundations supply contract and related personnel (Project and Contract Management, Engineering, Quality and Document Control)
CAK4.2	OSP TP & Cage	[redacted]%	Foundations supply contract specific milestones and related specific personnel (Quality Inspectors)
CAK4.3	WTG Foundations & OSPs Install.	[redacted]%	Foundations installation contract & related personnel (Client Reps)
CAK5	Onshore Export Cable	[redacted]%	Onshore cable and installation, associated works, landowner cost, consents and agreements (Direct cost - Transmission Assets)
CAK6	Electrical OSS	[redacted]%	OSS section Electrical systems contract (Direct cost - Transmission Assets)
CAK7.1	Electrical OSP – AWC/STDL	[redacted]%	Relevant personnel, quality, certification & AWC e.g. JUB
CAK7.2	Electrical OSP – STDL	[redacted]%	Structure and loadout items within the OSP section of the Electrical Systems contract
CAK8	Offshore Export Cable	[redacted]%	Export Cable supply and installation, related works & personnel (Direct cost - Transmission Assets)
CAK9	CTR Based	[redacted]	We note that this CAK has not been applied in the 23 December 2020 CAT
CAK10	Cables Package Allocation	[redacted]%	Cables Personnel & Quality roles whereby a split between exports and arrays cannot be ascertained. We note that this CAK has not been applied in the 23 December 2020 CAT
CAK11	Direct non-OFTO	[redacted]%	Array Cable supply and installation, WTG supply & T&I. Preparation for Operations (Direct cost - Generation Assets)

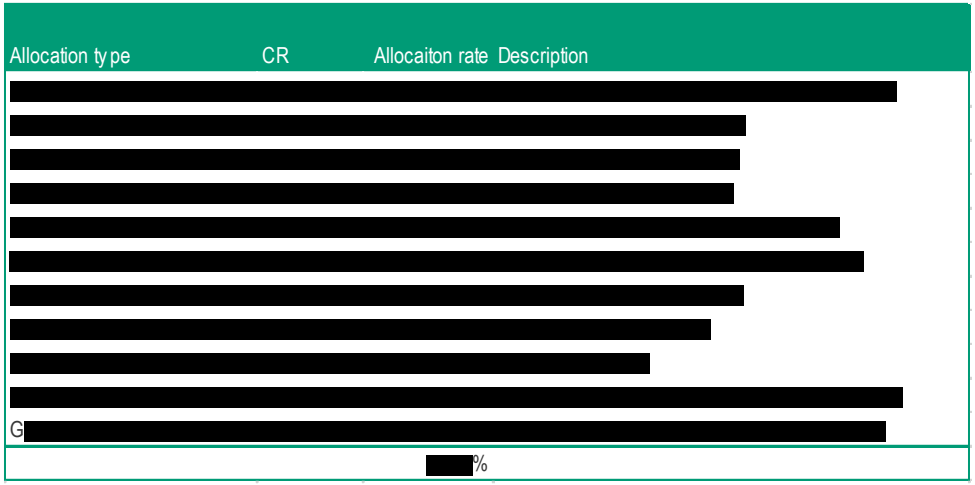
Cost allocation (continued)

Cost allocation (continued)

Resource Based CAK (CAK 2)

- As set out above, each role in the resource plan is assigned an estimated allocation rate dependent upon their role (cost category) from the list in the table below. From this the Developer has derived the overall Resource Based allocation rate of [redacted]%

Resource Based CAK



- The overall OFTO derived rate of [redacted]% is applied to costs where it is reasonable to allocate indirect costs based on how much direct project team time is spent on different assets. For example, general project management costs and admin personnel costs
- Whilst the methodology is consistent with that seen by us on previous projects, the Resource Based allocation rate derived is higher than the rate seen for resources on previous projects. The Developer explained that as the resources costs for TKOWFL have been allocated based on actual time spent as recorded in timesheets, this should result in a representative allocation rate

Area based CAKs (CAK 3.1 and 3.2)

- For costs such as site investigation, offshore consenting and general marine/offshore site operations, where there are clear geographical areas in relation to the costs incurred, the allocation has been made based on the proportion of offshore lease area related to the Transmission Assets as a percentage of total offshore lease area
- The Developer has explained that there are two allocation rates, pre-construction (CAK3.1) and in-construction (CAK3.2) due to the areas changing between these two stages, mainly due to construction vessels anchor patterns, moving from a jack up vessel to an anchored vessel for the installation of foundations and OSPs
- The Developer has determined that the Transmission Assets share of the offshore lease area is [redacted]% and [redacted]% in relation to pre-construction and in-construction areas respectively
- We have verified the calculation of the allocation rates for the offshore lease area and these appear to have been determined in line with the stated methodology

Foundations CAKs (CAK 4.1, 4.2 and 4.3)

- The Foundations CAKs relate to foundations supply and installation
- Foundations Supply (CAK 4.1) - The foundations supply contract includes two OSP foundations and 90 WTG foundations. Contractor costs and resource working on that package have an estimated allocation rate of [redacted]. However, CAK4.1 is calculated based on a reduction for the proportional weight of generator equipment that the foundations support. As such, CAK4.1, which is applicable to foundations supply together with associated ancillary works and project management resources is calculated at [redacted] to reflect the generator equipment impact upon the foundation
- OSP TP and cage supply (CAK 4.2) - as the OSP TP and cage structure holds a proportion of non-OFTO equipment (array cable i-tube and j-tube structures), the Developer has applied a weight based proportional adjustment. This equipment is calculated as being [redacted]% of each structure's total weight, therefore CAK4.2 is applied in the CAT at [redacted]%

Cost allocation (continued) and foreign exchange

Cost allocation (continued)

Foundations CAKs (CAK 4.1, 4.2 and 4.3) (continued)

- Foundations Installation (CAK4.3) - the milestone split of the foundation installation contract is used to calculate an OFTO allocation rate of [redacted]%. This has then been reduced to [redacted]% to reflect the proportional weight of generator equipment in line with CAK4.1
- We have verified CAK4.1, CAK4.2 and CAK4.3 calculations included in the CAT provided by the Developer have been calculated in line with the stated methodology

Electrical Systems contract allocation (CAK 7.1 and 7.2)

- Electrical OSP – STDL/AWC (CAK 7.1) - The OSP contains both OFTO and non-OFTO elements. The non-OFTO assets (SCADA controls and instrumentation and 66kV switchgear) and contract sum elements shared between OFTO and non-OFTO represent [redacted]% of the OSP costs as per the original STDL contract costs Therefore, for CAK7.1, an allocation rate of [redacted]% is applied by the Developer to OSP associated works, whether with STDL or any similar works by others
- Electrical OSP – STDL (CAK 7.2) –We understand that Ofgem has instructed that a proportional weight-based reduction is required for OSP associated works impacted by the weight of the OSP (and the generator equipment on the OSP). The Developer has calculated this as a [redacted]% reduction which is applied to the OSP Topside Structure and Topside Loadout cost lines of the Electrical Systems contract. The revised split of OSP related costs between OFTO and non-OFTO results in a derived allocation rate for CAK7.2 of [redacted]%
- We have verified the CAK7.1 calculations included in the CAT provided by the Developer have been calculated in line with the stated methodology. We note that CAK7.2 has not been applied in the 23 December 2020 CAT

Devex

- Where possible, Devex costs are allocated as direct costs. However, where the costs are shared CAKs are utilised depending on the nature of the costs in line with those set out in the table on page 27 above

Foreign exchange

- TKOWFL has contracted with vendors in both GBP and EUR for both the Transmission Assets and the Generation Assets. The CAT Rev A includes the following costs which are payable are EUR

Foreign exchange costs

Package WBS	Description	Vendor	Forecast (EUR)
[redacted]			
[redacted]			
[redacted]		[redacted]	
	[redacted]		
[redacted]			
Total			[redacted]

- As part of the financial close process TKOWFL entered into hedges for EUR foreign exchange for those Tier 1 contracts that have Euro denominated payments. On the first working day of the month the hedges mature and the EUR payments are received at the same time payment of the equivalent GBP Fund is made
- A total of €[redacted] was hedged, at a rate of [redacted] GBP/EUR, with the expectation that this hedge would cover the expected EUR package requirements
- In 2019, TKOWFL placed additional hedges totalling €[redacted], at a rate of [redacted] GBP/EUR, for additional foundations supply costs from the contractual steel remeasurement, increased costs of the SOV and array contract drop down cables, which were not originally expected to be incurred in EUR
- On the basis that the second hedge was to mainly cover the Generation Assets, the costs included in the CAT have been converted to GBP using the initial hedge rate
- The Developer explained that for pre-FID payments made in foreign currency, the spot rate has been taken from the SAP payment system
- We consider the approach taken by the Developer in relation to the costs incurred in foreign currencies, with a focus on mitigating the impact of foreign currency movements, to be reasonable

Section 5: Project common costs and development costs

Project common costs and development costs

CR8 – project common costs

Costs overview	£
[redacted]	

Overview

- The table above summarises the costs that are common to the project as a whole, which have been allocated to the Transmission Assets, together with the early development costs related to the Transmission Assets

Verification work

- Our verification work in relation to the project common costs is set out in Appendix C
- Based upon our review, subject to our observations in relation to the allocation rates and resources costs as further detailed in section 4, we have been able to agree project common costs and development costs totalling £[redacted] to supporting documentation
- The remaining £[redacted] of project common costs and development costs comprises costs below £100,000 which fall outside the scope of our review
- Whilst most project common costs appear to be appropriately stated, the table opposite has highlighted eight items where the amount included in the CAT Rev A requires amendment

Conclusion

- Based upon our review, subject to the amendments highlighted in the table opposite, our comments in relation to overhead allocation rates and the unsubstantiated costs, as detailed in the executive summary, the project common costs and development included in the CAT Rev A are appropriately stated

CR8 adjustments

	£ Adjustment £	Reasons for adjustment	Revised CAT amount £
Devex - Personnel & Expenses	[redacted]	A credit note has been issued for this item therefore it has been removed from the Devex	[redacted]
Devex - Triton Knoll Bird Surveys	[redacted]	The OFTO allocation for this item has been reduced to 0%	[redacted]
Devex - Personnel & Expenses	[redacted]	The OFTO allocation for this item has been reduced to 0%	[redacted]
Devex and land transactions - CAT Rev B adjustment	[redacted]	The Developer has provided a revised Devex schedule with updated allocation rates. Therefore an adjustment has been proposed for the difference between the two schedules	[redacted]
Resource CAK CAT Rev B adjustment	[redacted]	The resource based CAK applied to the relevant CR8 costs has been updated in the CAT Rev B to the correct allocation rate of 46.55% (previously at 49%)	[redacted]
Geotechnical Services	[redacted]	The Developer has highlighted that as per the invoices this should be allocated to the OFTO at 100%, therefore an adjustment has been proposed for the difference	[redacted]
Onshore Ecology EIA	[redacted]	A difference was noted between the invoices receipted as per SAP and the amount in the breakdown provided, therefore an adjustment has been proposed for the difference	[redacted]
Insurance	[redacted]	The Developer has highlighted that these costs are not OFTO related and should therefore be removed from the cost assessment, therefore an adjustment has been proposed	[redacted]
Total	[redacted]		[redacted]

Section 6: Offshore substation

Offshore substation costs

CR2 – Offshore substation costs

Costs overview	£
Foundation Supply	[redacted]
Foundation Installation	[redacted]
Electrical Systems Contract	[redacted]
Provisional Sums, Normalisation Sum, Variations and Other approved budget	[redacted]
Offshore Services	[redacted]
Consents	[redacted]
Category specific project management	[redacted]
Category specific project contingency	[redacted]
Total	[redacted]

Overview

- The table above summarises the costs of construction of the offshore substation and associated works

Verification work

- Our verification work in relation to the offshore substation costs is set out in Appendix D
- Based upon our review, subject to our observations in relation to resources costs as further detailed in section 4, we have been able to agree offshore substation costs totalling £[redacted] to supporting documentation
- The Developer has been unable to provide supporting documentation for onshore substation costs in relation to the STDL contract totalling £[redacted] of which is included in CR2, and this is included within the list of unsubstantiated costs set out in the executive summary
- The remaining £[redacted] of offshore substation costs comprises costs below £100,000 which fall outside the scope of our review
- Whilst most offshore substation costs appear to be appropriately stated, the table opposite has highlighted one item where the amount included in the CAT Rev A requires amendment

CR2 adjustments

	£	Adjustment £	Reasons for adjustment	Revised CAT amount £
Foundation supply - CAT Rev B adjustment	[redacted]		In previous versions of the CAT the allocation of costs to OFTO of the Foundation Supply (by 3SF) has been via Milestone descriptions. However, the Developer has explained that this method of allocation is not the most accurate as milestone values are not in general directly related to the costs of the items within the milestone. The remeasured Bill of Quantities to the contract price is now available which provdes for a more accurate method of allocation based upon steel weights, quantities and prices of WTG foundations, OSP foundations and the OSP TP and Cage	[redacted]
Total	[redacted]			[redacted]

Conclusion

- Based upon our review, subject to the amendment highlighted in the table above and the unsubstantiated costs, as detailed in the executive summary, the offshore substation costs included in the CAT Rev A appear to be appropriately stated

Section 7: Submarine cable supply and installation

Submarine cable supply and installation costs

CR3 – Submarine cable supply and installation costs

Costs overview	£
Main Contract Sum Breakdown	[redacted]
Offshore Export Cable Contract Variations and Options	[redacted]
Other Offshore Export Cable related Contracts	[redacted]
Offshore Services	[redacted]
Consents	[redacted]
Category specific project management	[redacted]
Category specific project contingency	[redacted]
Total	[redacted]

Overview

- The table above summarises the costs associated with the supply and installation of the submarine cable

Verification work

- Our verification work in relation to the submarine cable supply and installation costs is set out in Appendix E
- Based upon our review, subject to our observations in relation to the resources costs as further detailed in section 4, we have been able to agree submarine cable supply and installation costs totalling £[redacted] to supporting documentation
- The remaining £[redacted] of submarine cable supply and installation costs comprises costs below £100,000 which fall outside the scope of our review
- Whilst most submarine cable supply and installation costs appear to be appropriately stated, the table above has highlighted two items where the amount included in the CAT Rev A requires amendment

CR3 adjustments

	£	Adjustment £	Reasons for adjustment	Revised CAT amount £
Lot 9 Crew Transfer Vessel	[redacted]	[redacted]	These are forecast costs. The Developer has explained that £189,854 are surplus costs unlikely to be incurred and therefore an adjustment is proposed to remove this amount	[redacted]
Lot 9 Crew Transfer Vessel - Fuel	[redacted]			
WIND FARM COMMUNICATIONS ,Consultancy services Vodafone	[redacted]	[redacted]	This item has been highlighted to Ofgem as not OFTO related therefore it has been removed from the cost assessment	[redacted]
Total	[redacted]	[redacted]		[redacted]

Conclusion

- Based upon our review, subject to the amendment highlighted in the table above and the unsubstantiated costs, as detailed in the executive summary, the submarine cable supply and installation costs included in the CAT Rev A appear to be appropriately stated

Section 8: Land cable supply and installation costs

Land cable supply and installation costs

CR4 – Land cable supply and installation costs

Costs overview	£
Section 1 - Project Management and SITE Establishment including removal	[redacted]
Section 2 - TEMPORARY WORKS, including (but not limited to) Temporary Bridges, Road Management, Hardstandings required for TEMPORARY WORKS (and the like)	[redacted]
Section 3 - General Installation	[redacted]
Section 4 - Commissioning	[redacted]
Section 5 - Requested Option Prices From EMPLOYER'S REQUIREMENTS	[redacted]
Onshore Cable Contract Variations and Options	[redacted]
Other Onshore Cable related Contracts	[redacted]
Devex	[redacted]
Consents	[redacted]
Category specific project management	[redacted]
Category specific project contingency	[redacted]
Total	[redacted]

Overview

- The table above summarises the costs associated with the supply and installation of the land cable

Verification work

- Our verification work in relation to the land cable supply and installation costs is set out in Appendix F
- Based upon our review, subject to our observations in relation to the resources costs as further detailed in section 4, we have been able to agree land cable supply and installation costs totalling £[redacted] to supporting documentation
- The Developer has been unable to provide supporting documentation for land cable supply and installation costs of £[redacted], and these are included within the list of unsubstantiated costs set out in the executive summary
- The remaining £[redacted] of land cable supply and installation costs comprises costs below £100,000 which fall outside the scope of our review

CR4 adjustments

	£	Adjustment £	Reasons for adjustment	Revised CAT amount £
Land transactions - CAT Rev B adjustment	[redacted]	[redacted]	The total amount for land transactions per the summary schedule provided included some items which had not been included in the CAT. Thus, CAT Rev B has been updated to correctly include these amounts	[redacted]
Total	[redacted]	[redacted]		[redacted]

- Whilst most land cable supply and installation costs appear to be appropriately stated, the table above has highlighted one item where the amount included in the CAT Rev A requires amendment

Conclusion

- Based upon our review, subject to the amendment highlighted in the table above and the unsubstantiated costs, as detailed in the executive summary, the land cable supply and installation costs included in the CAT Rev A appear to be appropriately stated

Section 9: Onshore substation costs

Onshore substation costs

CR5 – Onshore substation costs

Costs overview	£
4.4.1 Design / Engineering / Project Management	[redacted]
4.4.2 Procurement & Supply	[redacted]
4.4.3 Installation	[redacted]
4.4.4 Commissioning	[redacted]
4.4.5 Additional items	[redacted]
4.4.7.1 Not Used	[redacted]
Provisional Sums, Normalisation Sum, Variations and Other approved budget	[redacted]
Other Onshore Substation related Contracts	[redacted]
Consents	[redacted]
Category specific project management	[redacted]
Contingency	[redacted]
Total	[redacted]

Overview

- The table above summarises the costs of construction of the onshore substation and associated works

Verification work

- Our verification work in relation to the onshore substation costs is set out in Appendix G
- Based upon our review, subject to our observations in relation to resources costs as further detailed in section 4, we have been able to agree onshore substation costs totalling £[redacted] to supporting documentation, with no issues arising
- The Developer has been unable to provide supporting documentation for onshore substation costs in relation to the STDL contract totalling £[redacted] of which is included in CR5, and this is included within the list of unsubstantiated costs set out in the executive summary
- The remaining £[redacted] of onshore substation costs comprises costs below £100,000 which fall outside the scope of our review

Conclusion

- Based upon our review, subject to the unsubstantiated costs, as detailed in the executive summary, the onshore substation costs included in the CAT Rev A appear to be appropriately stated

Section 10: Reactive substation costs

Reactive substation costs

CR6 – Reactive substation costs

Costs overview	£
Onshore - 4.4.1 Design / Engineering / Project Management	[redacted]
Onshore - 4.4.2 Procurement & Supply	[redacted]
Onshore - 4.4.3 Installation	[redacted]
Onshore - 4.4.4 Commissioning	[redacted]
Onshore - 4.4.5 Additional items	[redacted]
Onshore - 4.4.7.1 Not Used	[redacted]
Offshore - 1.1.1 Design / Engineering / Project Management	[redacted]
Offshore - 1.2.1 Procurement & Supply	[redacted]
Offshore - 4.4.3 Installation	[redacted]
Offshore - 4.4.4 Commissioning	[redacted]
Offshore - 4.4.5 Additional items	[redacted]
Provisional Sums, Normalisation Sum, Variations and Other approved budget	[redacted]
Other Reactive Substation related Contracts	[redacted]
Consents	[redacted]
Category specific project management	[redacted]
Contingency	[redacted]
Total	[redacted]

Overview

- The table above summarises the costs incurred for the reactive substation

Verification work

- Our verification work in relation to the reactive substation costs is set out in Appendix H
- Based upon our review, subject to our observations in relation to resources costs as further detailed in section 4 as further detailed in the executive summary, we have been able to agree reactive substation costs totalling £[redacted] to supporting documentation, with no issues arising
- The Developer has been unable to provide supporting documentation for onshore substation costs in relation to the STDL contract totalling £[redacted] of which is included in CR6, and this is included within the list of unsubstantiated costs set out in the executive summary
- The remaining £[redacted] of reactive substation costs comprises costs below £100,000 which fall outside the scope of our review

Conclusion

- Based upon our review, subject to the unsubstantiated costs, as detailed in the executive summary, the reactive substation costs included in the CAT Rev A appear to be appropriately stated

Section 11: Connection costs

Connection costs

CR7 – Connection costs

Costs overview	£
NGET Unlicenced works contract	[redacted]
Category specific project contingency	[redacted]
Total	[redacted]

Overview

- The table above summarises the costs incurred connecting the Transmission Assets to the National Grid

Verification work

- Our verification work in relation to the connection costs is set out in Appendix I
- Based upon our review, we have been able to agree all connection costs, totalling £[redacted] (100.00 %) to supporting documentation, with no issues arising

Conclusion

- Based upon our review, the connection costs included in the CAT Rev A appear to be appropriately stated

Section 12: Transaction costs

Transaction costs

CR9 – Transaction costs

Costs overview	£
Transaction costs	[redacted]
Total	[redacted]

Overview

- The table above summarises the transaction costs incurred in connection with the Transmission Assets

Verification work

- Our verification work in relation to the transaction costs is set out in Appendix J
- Based upon our review, subject to our observations in relation to the resources costs as further detailed in section 4, we have been able to agree transaction costs totalling £[redacted] to supporting documentation
- However the Developer has been unable to provide supporting documentation for transaction costs of £[redacted]. This is made up of two items, as included within the list of unsubstantiated costs set out in the executive summary, as follows:
  - Forecast internal transaction support costs of £[redacted]
  - Legal costs forecasted at £[redacted]
- The remaining £[redacted] of transaction costs comprises costs below £100,000 which fall outside the scope of our review

Conclusion

- Based upon our review, subject to our observations above regarding the unsubstantiated costs, the transaction costs included in the CAT Rev A that we have been provided with supporting documentation for appear to be appropriately stated

Appendices

A.	Restrictions on circulation, disclosures of interest, forms of report and information relied on
B.	Summary of key contracts tender process and award
C.	Project common costs and development costs verification work
D.	Offshore substation costs verification work
E.	Submarine cable supply and installation costs verification work
F.	Land cable supply and installation costs verification work
G.	Onshore substation costs verification work
H.	Reactive substation costs verification work
I.	Connection costs verification work
J.	Transaction costs verification work

A. Restrictions on circulation, disclosures of interest, forms of report and information relied on

Restriction on circulation

- 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
- In the preparation of our report, Grant Thornton has been provided with material by Ofgem (and by third parties at Ofgem's request) relating to third parties. We have relied upon warranties and representations provided by Ofgem that it is fully entitled to disclose such information to us for inclusion within our report, free of any third party rights or obligations, and that Ofgem will only permit circulation of this report in accordance with any rights to confidentiality on the part of any third party. Any objections to the inclusion of material should be addressed to Ofgem. Accordingly, Grant Thornton acknowledges no duty or obligation to any party in connection to the inclusion in the report of any content referring to any third party material or the accuracy of such material

Disclosures of interest

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

Forms of report

- 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

Information relied on

- Grant Thornton has relied upon the following information in reviewing the cost assessment for the Wind Farm:
  - Triton Knoll Information Memorandum 2020
  - information contained in the Ofgem developer data room for the Triton Knoll project
  - information and explanations provided to us by the Developer. This includes a virtual meeting with the Developer on 1 March 2021 to discuss the Transmission Assets and email correspondence with the Developer

B. Summary of key contracts tender process and award

Introduction

- As set out in section 3, 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 main elements of construction of the Wind Farm
- In this section, we summarise the tender award process for the key capital components of the Transmission Assets

Onshore cabling –

B. Summary of key contracts tender process and award (continued)

Array and export cables – [redacted]

- [redacted]
- [redacted]
- [redacted]

Package/combination	Number of Offers
[redacted]	

- [redacted]
  - [redacted]
  - [redacted]
  - [redacted]
  - [redacted]
  - [redacted]
  - [redacted]

– [redacted]
  - [redacted]
  - [redacted]

[redacted]

[redacted]

Assessment section details	Maximum weighting	VBNK	PPL/SOC	PPL/SOC/JDR
[redacted]				

- [redacted]

[redacted]

B. Summary of key contracts tender process and award (continued)

Array and export cables – [redacted]

Assessment section details	Maximum weighting	VBNK	PPL/SOC
[redacted]			

- [redacted]
- [redacted]
- [redacted]
  - [redacted]
  - [redacted]
- [redacted]

[redacted]

- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]
- [redacted]

B. Summary of key contracts tender process and award (continued)

Onshore and offshore substations(continued)

- The results of the tender evaluation were as follows

Option	£
[redacted]	

- [redacted]

[redacted]

Offshore Substation	GE £	STDL £
[redacted]		

Onshore Substation	GE £	STDL £
[redacted]		

[redacted]

- [redacted]
- [redacted]

C. Project common costs and development costs verification work

[redacted]

[redacted]					
[redacted]					
[redacted]					
[redacted]					
[redacted]					
Total	[redacted]				

Other items

Cost overview	£	% Allocation to OFTO	Supplier	[redacted]	
[redacted]					

C. Project common costs and development costs verification work (continued)

Other items (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Variation order	Documentation seen	Cost verifed
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
Total	[redacted]					

Development costs

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
D[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						

C. Project common costs and development costs verification work (continued)

Development Costs (continued)

C. Project common costs and development costs verification work (continued)

Development Costs (continued)

C. Project common costs and development costs verification work (continued)

Development Costs (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						

C. Project common costs and development costs verification work (continued)

Development Costs (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						

C. Project common costs and development costs verification work (continued)

Development Costs (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verified
[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]
Total	[redacted]					

C. Project common costs and development costs verification work (continued)

Insurance

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

Category specific project contingency

Cost overview	£	% Allocation to OFTO	Supplier	Contract /variation number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

D. Offshore substation costs verification work

Foundation Supply

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total						

Foundation Installation

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						

D. Offshore substation costs verification work (continued)

Foundation Installation (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

Electrical Systems Contract

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						

D. Offshore substation costs verification work (continued)

Electrical Systems Contract (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						

D. Offshore substation costs verification work (continued)

Electrical Systems Contract (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total						

Provisional Sums, Normalisation Sum, Variations and Other approved budget

Cost overview	£	% Allocation to OFTO	Supplier	Contract/ variation number	Documentation seen	Cost verifed
[redacted]						
Total						

D. Offshore substation costs verification work (continued)

Offshore Services

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total						

D. Offshore substation costs verification work (continued)

Consents

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	**71,220**					

Category specific project management

Cost overview	£	% Allocation to OFTO	Supplier	Contract/variation number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

Category specific project contingency

Cost overview	£	% Allocation to OFTO	Supplier	Contract/variation number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

E. Submarine cable supply and installation costs verification work

Main Contract Sum Breakdown

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						

E. Submarine cable supply and installation costs verification work (continued)

Main Contract Sum Breakdown (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						

E. Submarine cable supply and installation costs verification work (continued)

Main Contract Sum Breakdown (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						

E. Submarine cable supply and installation costs verification work (continued)

Main Contract Sum Breakdown (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

Offshore Export Cable Contract Variations and Options

Cost overview	£	% Allocation to OFTO	Supplier	Variation order	Documentation seen	Cost verifed
[redacted]						

E. Submarine cable supply and installation costs verification work (continued)

Offshore Export Cable Contract Variations and Options (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Variation order	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

Other Offshore Export Cable related Contracts

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

E. Submarine cable supply and installation costs verification work (continued)

Offshore services

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total						

E. Submarine cable supply and installation costs verification work (continued)

Consents

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
Total	[redacted]					

Category specific project management

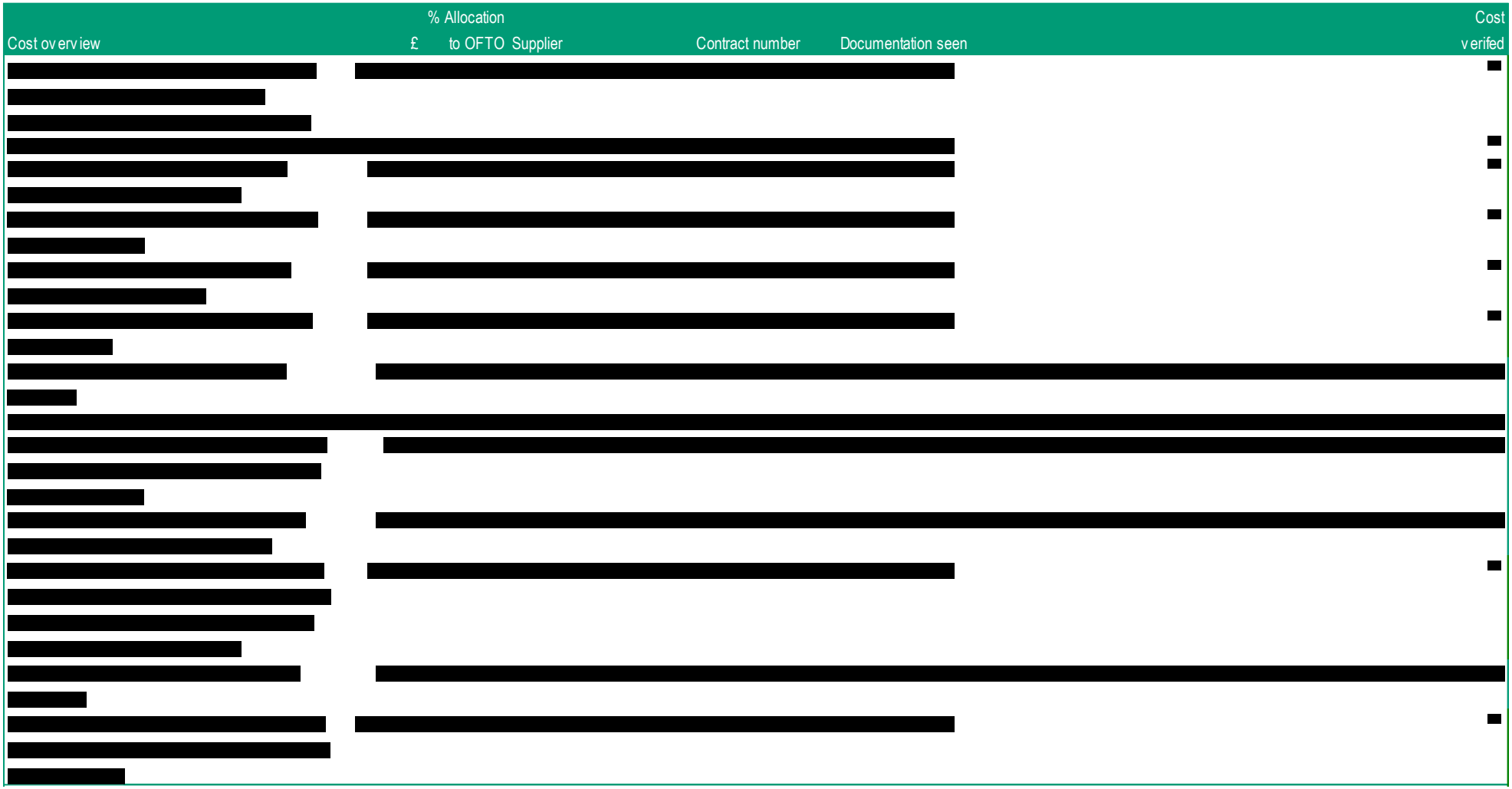
Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

Category specific project contingency

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

F. Land cable supply and installation costs verification work

Section 1 - Project management and SITE establishment including removal



F. Land cable supply and installation costs verification work (continued)

Section 1 - Project management and SITE establishment including removal (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total						

Section 2 - TEMPORARY WORKS, including (but not limited to) temporary bridges, road management, hardstandings required for TEMPORARY WORKS (and the like)

Cost overview	£	% Allocation to OFTO	Supplier	Contract/variation number	Documentation seen	Cost verifed
[redacted]						

F. Land cable supply and installation costs verification work (continued)

Section 2 - TEMPORARY WORKS, including (but not limited to) temporary bridges, road management, hardstandings required for TEMPORARY WORKS (and the like) (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Contract/variation number	Documentation seen	Cost verifed
[redacted]						
Total						

Section 3 - General installation

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						

F. Land cable supply and installation costs verification work (continued)

Section 3 - General installation (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total						

F. Land cable supply and installation costs verification work (continued)

Section 4 - Commissioning

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
Total						

Section 5 - Requested option prices from employer's requirements

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						
[redacted]						
[redacted]						
Total						

Onshore cable contract cariations and options

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						

F. Land cable supply and installation costs verification work (continued)

Onshore cable contract variations and options (continued)

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total						

F. Land cable supply and installation costs verification work (continued)

Other onshore cable related contracts

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total						

Devex

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total						

F. Land cable supply and installation costs verification work (continued)

Consents

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verified
[redacted]						[redacted]
					[redacted]	
[redacted]						
					[redacted]	
[redacted]						
					[redacted]	
[redacted]				[redacted]		
			[redacted]			
Total	[redacted]					

Category specific project management

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verified
[redacted]						[redacted]
					[redacted]	
Total	[redacted]					

Category specific project contingency

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verified
[redacted]						[redacted]
Total	[redacted]					

G. Onshore substation costs verification work

4.4.1 Design/engineering/project management

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total						

4.4.2 Procurement and supply

Contract Overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						

G. Onshore substation costs verification work (continued)

4.4.2 Procurement and supply (continued)

Contract Overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
Total	[redacted]					

4.4.3 Installation

Contract Overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
Total	[redacted]					

G. Onshore substation costs verification work (continued)

4.4.4 Commissioning

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						
Total	[redacted]					

4.4.5 Additional items

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

G. Onshore substation costs verification work (continued)

4.4.7.1 Not used

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

Provisional sums, normalisation sum, variations and other approved budget

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

G. Onshore substation costs verification work (continued)

Other onshore substation related contracts

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]	[redacted]					
[redacted]						
[redacted]						[redacted]
Total	[redacted]					

Consents

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						[redacted]
Total	[redacted]					

Category specific project management

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						[redacted]
					[redacted]	
					[redacted]	
					[redacted]	
Total	[redacted]					

Category specific project contingency

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						[redacted]
Total	[redacted]					

H. Reactive substation costs verification work

Onshore - 4.4.1 Design/engineering/project management

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total						

Onshore - 4.4.2 Procurement and supply

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total						

Onshore - 4.4.3 Installation

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total						

H. Reactive substation costs verification work (continued)

Onshore - 4.4.4 Commissioning

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						
Total	[redacted]					

Onshore - 4.4.5 Additional items

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

H. Reactive substation costs verification work (continued)

Onshore - 4.4.7.1 Not used

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						[redacted]
[redacted]						[redacted]
[redacted]						
[redacted]						[redacted]
[redacted]						[redacted]
[redacted]						[redacted]
[redacted]						
[redacted]			[redacted]			[redacted]
[redacted]						
[redacted]						
[redacted]						
Total	[redacted]					

Offshore - 1.1.1 Design/engineering/project management

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						[redacted]
[redacted]						[redacted]
[redacted]						[redacted]
[redacted]						[redacted]
Total	[redacted]					

H. Reactive substation costs verification work (continued)

Offshore - 1.2.1 Procurement and supply

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						
[redacted]						
[redacted]						
Total	[redacted]					

Offshore - 4.4.3 Installation

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

Offshore - 4.4.4 Commissioning

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						
Total	[redacted]					

Offshore - 4.4.5 Additional items

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]	[redacted]					
[redacted]						
[redacted]						
Total	[redacted]					

H. Reactive substation costs verification work (continued)

Provisional sums, normalisation sum, variations and other approved budget

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
[redacted]						
Total	[redacted]					

Other reactive substation related contracts

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						
[redacted]						
Total	[redacted]					

Consents

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						
Total	[redacted]					

Category specific project management

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
[redacted]						
Total	[redacted]					

H. Reactive substation costs verification work (continued)

Category specific project management

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
					[redacted]	
Total	[redacted]					

Category specific project contingency

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

I. Connection costs verification work

NGET unlicenced works contract

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
C[redacted]						
[redacted]						
					[redacted]	
Total	[redacted]					

Category specific project contingency

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]					

J. Transaction costs verification work

Transaction costs

Cost overview	£	% Allocation to OFTO	Supplier	Contract number	Documentation seen	Cost verifed
[redacted]						
Total	[redacted]