

Greater Gabbard OFTO

Asset Condition and New O&M Arrangements

9 November 2018

Confidential

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Contents

1	Introduction	1
2	Asset Condition Assessment	3
2.1	Introduction	3
2.2	Summary	3
2.3	Maintenance records	3
2.4	SF6 gas inventory and monitoring requirements	3
2.5	General housekeeping	4
2.6	Corrosion and surface contamination	4
2.7	Leiston Onshore Substation	4
2.8	Greater Gabbard Offshore Substation	5
2.9	Inner Gabbard Offshore Substation	6
3	Asset Management Strategy Review	8
3.1	Introduction	8
3.2	New O&M Arrangements	8
3.3	Asset Management Strategy	9
3.3.1	Philosophy	9
3.3.2	Non-Critical Assets	10
3.3.3	Payment Incentive	10
3.3.4	Management of Major Failure Events	10
3.3.5	Spares Strategy	11
3.3.6	Maintenance Activity Strategy	11
3.4	Draft O&M Contract	11
3.4.1	Contractor Scope of Services	11
3.4.2	Commercial Arrangements between the OFTO and EDS	11
3.4.3	Price	13
3.4.4	Efficiency Payment Incentive	13
3.4.5	Availability Deductions	14
3.4.6	Guarantee	14
3.4.7	Service Levels	14
3.5	Contingency and Emergency Planning	14
3.6	Safety Systems	15
3.7	OFTO Transition Plan	15
3.8	Procurement Management	16
3.9	Health, Safety and Environmental Management	16
3.10	Operations and Maintenance Summary	16
4	Conclusion	18

5 Reference Documents

1 Introduction

Mott MacDonald Ltd is the Technical Adviser appointed to monitor the operational performance of the Greater Gabbard OFTO (the OFTO) on behalf of investors.

The OFTO has owned, operated and maintained its transmission assets for approaching 5 years, achieving a Transmission Availability rate of 99.84%.

As detailed in our Technical Engineers Report for Lenders (dated November 2013), the OFTO contracted with Balfour Beatty Utility Services Limited (BBUSL) at asset transfer to provide Operation and Maintenance (O&M) services for 20 years. BBUSL has subcontracted with Scottish & Southern Energy (SSE) via Greater Gabbard Offshore Wind Ltd (GGOWL) for operation and logistic services, with Briggs Marine Contracting Limited (BMCL) for marine work, and with Siemens Transmission and Distribution Ltd (STDL) for maintenance of electrical plant. BBUSL has additionally subcontracted with other small contractors as required.

Our report concluded that all the Contractors were established companies with relevant experience in the field and we were satisfied that appropriate arrangements had been made to provide necessary O&M services to the OFTO.

As reported in our March 2018 and September 2018 TA reports, whilst the assets have achieved a high level of availability, the OFTO has become concerned that their long-term performance is not being adequately addressed. This has prompted the OFTO to review its asset management strategy and to consider, in the light of experience, whether the current O&M arrangements are the most effective to achieve the desired objectives.

The baseline for this review is the current condition of its assets and the strategy has considered the O&M expenditure and activities required to maintain a high level of availability for the remaining 15 years of the Revenue Period. To this end a procurement event was carried out by the OFTO in which EDS HV Management (EDS) were found to be the best technical and commercial fit for the assessment. The OFTO commissioned EDS to conduct a condition assessment during the summer of 2018 on its offshore and onshore transmission assets. EDS's scope included:

- Conducting a condition monitoring assessment of the OFTO's assets.
- Compilation of a condition monitoring report.
- Assistance with the generation of a new maintenance programme.
- Compile associated costing for the new maintenance programme.
- Provide the following documentation:
 - Health Safety and Environmental Plan.
 - Quality Assurance Plan.
 - Operational Transition Plan.
 - Emergency Response Plan.
 - Incident Response Plan.

The revised OFTO asset management strategy proposes that the O&M Contract with BBUSL should be terminated and that EDS should be appointed as O&M Contractor under a new Contract better suited to delivering the desired outcomes. The OFTO will also engage Marine

Space to support environmental and consents services and retain more control in engaging third parties to undertake major reactive maintenance works.

Mott MacDonald in its role as Lender's Technical Advisor has been asked to review these proposals and a revised draft O&M Contract and confirm that the amendments proposed are in accordance with Good Industry Practice, that they do not breach the terms of the Transaction Authorisations and will not substantially or adversely alter the risk profile of the contracts.

2 Asset Condition Assessment

2.1 Introduction

EDS performed an asset condition assessment during the summer of 2018. The scope of the assessment included the inspection of all the OFTO onshore and offshore assets including a desktop review of the O&M manuals and maintenance records. EDS provided recommendations and suggestions against key areas of improvement.

2.2 Summary

The findings of the asset condition assessment found that generally the O&M contractor has conducted regular inspections, but maintenance records suggest that limited planned preventative maintenance work has been performed. However, the transmission assets were generally in a good and functional condition consistent with their age. A few items were highlighted in the assessment reports which were a common theme throughout the reports:

- Maintenance records.
- SF₆ gas inventory and monitoring requirements.
- General housekeeping.
- Corrosion.

The key findings for the Leiston Onshore Substation, Galloper Offshore Substation and, Inner Gabbard Offshore substation are summarized in Sections 2.7, 2.8 and 2.9 of this report respectively.

2.3 Maintenance records

A general issue throughout the inspections and desktop review process conducted by EDS, was the absence and recording of preventative planned maintenance work or testing conducted by BBUS for many OFTO assets. This led the assessors to believe that none of the Original Equipment Manufacturer (OEM) routine maintenance had been executed for most of the equipment. Therefore, EDS has provided recommendations to maximise the long-term availability of the equipment.

Up to date inspection reports were available for all equipment.

2.4 SF₆ gas inventory and monitoring requirements

SF₆ is a synthetic gas used in electrical equipment, particularly in switchgear, due to its excellent insulating properties which facilitates compact designs. However, SF₆ is a potent greenhouse gas that has 24,000 times the Global Warming Potential per kilogramme than carbon dioxide. The OFTO has an obligation to report SF₆ volumes and emissions to Ofgem, but currently the total volume of SF₆ gas held within equipment and stored in inventory is not known. Gas top up values, which provide a measure of leakage, have also not been recorded.

BBUSL has been diligently recording SF₆ pressure levels in relevant equipment and we are satisfied that operational integrity of the assets has not been compromised.

2.5 General housekeeping

General housekeeping for the onshore and offshore substation was identified in the EDS reports as an area that required improvement. Specific points raised were as follows:

- Weed control in the onshore substation switchyard, filter compound and SVC area.
- SVC heat exchangers radiator contaminated with vegetation.
- 132kV HIS switchgear has surface contamination and requires a washdown and anti-corrosion agent checked.
- Porcelain insulators and bushings require cleaning.
- High level of bird guano on the offshore substations.

2.6 Corrosion and surface contamination

Corrosion on the onshore substation was isolated to a few pieces of equipment, such as earth switch mechanisms, based on visual inspection. The offshore substations, as expected, showed more signs of corrosion.

A paint survey was conducted by a corrosion specialist employed by EDS during the condition assessment. The surveys covered, steel structures, access walkways, containers, helideck and launch davits. Generally, the findings found visible signs of breakdown and corrosion throughout the offshore substations. The onshore Leiston Substation surveys found little corrosion with only a few areas requiring remedial work.

2.7 Leiston Onshore Substation

Table 1: Onshore Substation key findings.

Item	Description	Key Findings
1	Reactive power assets (SVCs)	<ul style="list-style-type: none"> • The Hydran oil sampling units on the Compensation transformers required servicing and alarms to be addressed. • Bund pumps and control panel need to be checked for functionality. • Based on the failure rate of the SVC IGBT modules, EDS recommend a budgetary provision of one IGBT replacement per SVC module per year. • Heat exchanger radiators are contaminated with pollen and dust which would affect cooling performance. Historical performance trends are to be analysed to determine if the SVCs have been operating. • HVAC replacement was currently taking place at the time of assessment. A few installation issues were identified which need to be corrected. • Converter transformer 1 has an oil leak near the Buchholz device and requires further investigation.
2	132kV Harmonic Filters	<ul style="list-style-type: none"> • The general condition of the earth switches indicate that maintenance should be brought forward to year 10. • The switchyard requires weed control measures to be taken. • Porcelain insulators require a wipe down to remove surface contamination.
3	132kV HIS Switchgear	<ul style="list-style-type: none"> • The switchgear surfaces require cleaning in order to inspect the anti-corrosion coating. • Surface corrosion found on the earth switch operating mechanism.
4	Low Voltage and DC Battery System	<ul style="list-style-type: none"> • OEM recommended replacement of the batteries is due this year.
5	Capacitive voltage transformers (Leiston PQM compound)	<ul style="list-style-type: none"> • Maintenance records have no reference to the CVTs which could be a gap in the current maintenance philosophy. • Switchyards required weed control.

Item	Description	Key Findings
6	National Grid Substation assets owned by the OFTO	<ul style="list-style-type: none"> Module 3 cable sealing end has a high oil level in the header site glass indicating a gas leak. This is a known issue and the OFTO will be addressing the issue in 2019.

2.8 Greater Gabbard Offshore Substation

Table 2: Greater Gabbard key findings.

Item	Description	Key Findings
1	90MVA Grid Transformer	<ul style="list-style-type: none"> The bolted lid is leaking oil on both transformer GT1 and GT2. This is a known issue and the OFTO has taken measures to carry out repair on the lids in 2019. The oil levels are current being monitored by remote camera and monthly inspections. The hydran unit for GT1 requires servicing with no records of PPM works available. During the inspection data could not be accessed from the front HMI. The hydran gas analyser device for GT2 is missing. The radiator fans are showing signs of corrosion and bearing mechanism failure. Radiator cooling fins require minor touch up works. The transformer sump and dump tank pipework is blocked with debris and requires cleaning. Transformer water mist suppression system needs to be tested. The records do not show a test begin performed over 9 years.
2	33kV 30KVA Reactors	<ul style="list-style-type: none"> Radiator cooling fins require minor touch up works. The reactor compartment and sump and dump tank pipework requires cleaning. Oil breather to be replaced.
3	Earthing transformers	<ul style="list-style-type: none"> The oil level in the conservator tanks requires atop up of oil.
4	Low Voltage and DC Battery System	<ul style="list-style-type: none"> Batteries were replaced in 2018 but no recommissioning records were found. EDS proposes that a discharge test is undertaken according to the manufacturer's requirements.
5	Substation HVAC	<ul style="list-style-type: none"> The HVAC units require replacing based on the condition of the asset. The O&M contractor is in the process of replacing them in 2018.
6	Steel structure (corrosion)	<ul style="list-style-type: none"> The specialist corrosion contractor, International paints, was employed by EDS to perform detailed inspection of the offshore platforms. The findings for Greater Gabbard are summarised as follows: <ul style="list-style-type: none"> The north facing section of the platform had mostly minor to moderate corrosion damage on certain items with a few severe cases identified. The eastern facing section of the platform had mostly minor corrosion. The south facing section of the platform has generally good to minor corrosion damage. The western the face of the platform was mostly minor with a few moderate signs of corrosion damage. The remedial work for the entire platform consisted of spot repairs at localised minor to moderate cases and a spot repair and full top coating for moderate to severe cases.
7	Lifeboat Davits	<ul style="list-style-type: none"> Davit crane pedestal base and bolts corroded. Hook is starting to seize. Broken wire along the length of the brake wire.

Item	Description	Key Findings
8	Fire System	<ul style="list-style-type: none"> No records could be found for documented preventative maintenance work Manual call points are not suitable for the environment. The water ingress into these devices may be causing the false alarms. Fire detection and suppression system has frequent false alarms. Operatives do not have trust the system as a reliable indication. Condemned fire extinguishers on the on platform need to be replaced. Bird guano.
9	Diesel generators	<ul style="list-style-type: none"> Jacket water heater needs replacing. Starter batteries are approaching expiry and will require replacing. Radiator is blocked but the unit is still functional.
10	Palfinger crane	<ul style="list-style-type: none"> Corrosion and bird guano have been identified on the crane. Load cell sensor cables not connected. This is a known issue and the crane has been derated to 2 tonne capacity. The remedial work and recertification will be conducted in October 2018.
11	Water systems	<ul style="list-style-type: none"> The potable water, grey water and black water systems are no longer working or required to support offshore maintenance works. EDS recommends that these system be decommissioned and removed from the platform as part of the wider decommissioning programme. The deck-wash system has been isolated and shows high levels of corrosion. EDS recommends that this system also be decommissioned based on the current condition.
12	Life saving equipment	<ul style="list-style-type: none"> High level of bird guano on life saving equipment. There is no record of any PPM works completed. EDS recommends a replacement programme is undertaken to align with statutory requirements.

2.9 Inner Gabbard Offshore Substation

Table 3: Greater Gabbard key findings.

Item	Description	Key Findings
1	90MVA Grid Transformer	<ul style="list-style-type: none"> The hydran unit for all GT transformers requires servicing with no records of PPM works available. During the inspection data could not be accessed from the front HMI. Radiator cooling fins are showing early signs of corrosion. The transformer sump and dump tank pipework is blocked with debris and requires cleaning. Transformer waiver mist suppression system needs to be tested. The records do not show a test begin performed over 9 years.
3	Earthing transformers	<ul style="list-style-type: none"> The oil level in the conservator tanks requires a top up of oil.
4	Low Voltage and DC Battery System	<ul style="list-style-type: none"> Batteries were replaced in 2018 but no recommissioning records were found. EDS proposes that a discharge test is undertaken according to the manufacturer's requirements.
5	Substation HVAC	<ul style="list-style-type: none"> The HVAC units require replacing based on the condition of the asset showing high levels of corrosion. The O&M contractor is in the process of replacing them in 2018.
6	Steel structure (corrosion)	<ul style="list-style-type: none"> The specialist corrosion contractor, International paints, was employed by EDS to perform detailed inspection of the offshore platforms. The findings for Inner Gabbard are summarised as follows:

Item	Description	Key Findings
		<ul style="list-style-type: none"> – The north facing section of the platform had mostly minor t and some moderate corrosion damage on certain items. – The eastern facing section of the platform had mostly minor corrosion and moderate corrosion. – The south facing section of the platform has mostly minor and moderate damage. – The western the face of the platform was mostly minor with a few moderate signs of corrosion damage. • The remedial work for the entire platform consisted of spot repairs at localised minor to moderate cases and a spot repair and full top coating for moderate to severe cases.
7	Lifeboat Davits	<ul style="list-style-type: none"> • Davit crane pedestal base and bolts corroded.
8	Fire System	<ul style="list-style-type: none"> • No records could be found for documented preventative maintenance work. • Manual call points are not suitable for the environment. The water ingress into these devices may be causing the false alarms. • Fire detection and suppression system has frequent false alarms. Operatives do not have trust the system as a reliable indication. • Condemned fire extinguishers on the on platform need to be replaced. • Bird guano.
9	Diesel generators	<ul style="list-style-type: none"> • Jacket water heater needs replacing. • Starter batteries are approaching expiry and will require replacing. • Radiator is blocked but the unit is still functional. • A fire integrity test was performed on the diesel generator container. The generator failed the test due the back wall rotting away and the test gas could not be retained in the enclosed volume for the minimum duration. Remedial work is required on the container.
10	Lifting Cranes	<ul style="list-style-type: none"> • Aviation light is broken on the Kenz crane. • Helia crane has general corrosion, oil leaking from the hydraulic cylinder and there are no slew limits installed.
11	Water systems	<ul style="list-style-type: none"> • The potable water, grey water and black water systems are no longer working or required to support offshore maintenance works. EDS recommends that these system be decommissioned and removed from the platform as part of the wider decommissioning programme. • The deck-wash system has been isolated and shows high levels of corrosion. EDS recommends that this system also be decommissioned based on the current condition.
12	Life saving equipment	<ul style="list-style-type: none"> • High level of bird guano on life saving equipment. • There is no record of any PPM works completed. EDS recommends a replacement programme is undertaken to align with statutory requirements.

3 Asset Management Strategy Review

3.1 Introduction

The OFTO has developed a new asset management strategy based on the findings of the asset condition assessment. This was undertaken with the objective of assessing the work required and the associated costs over the remainder of the Revenue Period (15 years).

The following sections provide an overview of the proposed changes to the O&M arrangements and our view of the proposed changes. The following documents were reviewed:

- Asset Management Strategy.
- Draft O&M Contract dated 4th September 2018.
- Health Safety and Environmental Plan.
- Quality Assurance Plan.
- Operational Transition Plan.
- Emergency Response Plan.
- Incident Response Plan.

3.2 New O&M Arrangements

The new O&M strategy proposed by the OFTO is based on the current O&M Contractor (BBUSL) being replaced by EDS through a formal transition plan (See Section 3.7).

EDS will assume maintenance and operation responsibilities under a new O&M Contract after the effective date of termination of the existing O&M Contract with BBUSL.

EDS propose to subcontract to James Fisher Marine Services (JFMS), its parent company to procure marine vessel services. EDS will provide control room and operation services in-house and use specialist subcontractors for crane, HVAC and Fire System maintenance via long term agreements within the EDS and James Fisher Marine Services Group supply chains. Maintenance work previously performed by STDL on behalf of BBUS such as GIS and protection related services will be performed by EDS. EDS will use STDL on an ad-hoc basis to provide technical support for the SVC system.

The OFTO will contract directly with marine contractors for export cable repair and installation services and with Marine Space for environment and consents consulting services.

The OFTO will contract directly with contractors to procure subsea cable and offshore jacket structure surveys.

A comparison of the O&M arrangements is shown below in Table 1.

Table 4: Scope comparison between the old and new O&M strategy

Description	Existing Strategy	New Strategy
Overall operations and management of the transmission assets	BBUSL	EDS
Fault Management	BBUSL	EDS

Description	Existing Strategy	New Strategy
Outage planning and liaison with NETSO.	BBUSL	EDS
Testing of cables in line with manufacturer's and industry recommendations.	BBUSL	EDS
Environmental and consents management.	BBUSL	OFTO via Marine Space
Surveying of onshore route and structures	BBUSL	EDS
Provision and coordination of emergency contingency plans.	BBUSL	EDS
Statutory and regulatory reporting.	BBUSL	EDS
Provision of Safe Systems of Work	BBUSL via SSE	EDS
Electrical switching by authorised persons	BBUSL via SSE	EDS
24 hour alarm monitoring and control of the OFTO assets. (Control room)	BBUSL via SSE	EDS
Spare parts maintenance, procurements and testing (excluding cables and accessories) at Lowestoft Marine Base.	BBUSL via SSE	EDS
Marine coordination including managing logistics, monitoring vessels and people and coordinating emergency response and contingency plans.	BBUSL via SSE	EDS via JFMS
Subsea cable surveys.	BBUSL via BMC	OFTO
Inspection and maintenance of the offshore platform below the splash zone.	BBUSL via BMC	OFTO

3.3 Asset Management Strategy

The OFTO has developed a new asset management approach, together with a bespoke O&M contract, to achieve the desired long-term levels of asset performance. The salient sections of the asset management strategy document are summarised below:

3.3.1 Philosophy

The overarching approach of the new asset management strategy is to adopt a risk-based approach to maintenance activities based on asset condition and asset loss risk. This approach is intended to optimise asset availability, whilst reducing costs by adjusting maintenance frequencies to eliminate unnecessary maintenance and increasing maintenance that improves asset condition and performance. At the same time, an acceptable level of risk must be maintained.

The flexible approach to maintenance is implemented through a requirement in the O&M contract for the Contractor to update and submit, on an annual basis, a proposed Asset Management Plan covering the remainder of the service period.

This flexible approach to maintenance is an established concept and is similar to reliability-based optimization (RBO), where routine maintenance frequencies are adjusted based on the condition of the asset and probability/consequence of failure. It requires that the O&M providers and the OFTO have a good technical knowledge and understanding of the assets and can access reliable condition monitoring data. We note that EDS is an established O&M service provider in the offshore wind energy industry and we consider that their knowledge and experience is suitable to deliver the new asset management approach.

Appropriate measures have been put in place to ensure that a cycle of continuous improvement and monitoring takes place through the requirements of the new O&M Contract.

3.3.2 Non-Critical Assets

The O&M Contract will pass the lifetime loss risk for certain “non-critical/ low impact” auxiliary assets to the Contractor. Corrective maintenance costs for this equipment will be the responsibility of the Contractor up to a cap of £10,000 per annum. The auxiliary systems covered under this arrangement are:

- Onshore and Offshore Fire Systems
- Onshore and Offshore Security Systems
- Onshore and Offshore DC Battery Systems
- Onshore and Offshore Heating, Ventilating and Air Conditioning systems including the offshore Air handling unit and associated systems
- Offshore Diesel Generator
- Offshore cranes
- Offshore safety and rescue equipment

We consider the £10,000 cap to be an appropriate value for normal corrective maintenance for the equipment identified.

3.3.3 Payment Incentive

A payment is provided in the O&M Contract to incentivise the Contractor to manage the budget and achieve a high level of availability. The incentive will be split 80/20 between the Contractor and the OFTO respectively to account for the lifetime risk given to the Contractor on non-critical equipment. More information is provided in the Commercial section below.

3.3.4 Management of Major Failure Events

The new asset management strategy describes the roles and responsibilities, resources and contracts required to realise the Major Failure Event response plan. Two contracts will be developed to deliver a repair:

- A fault management contract with JFMS to deliver all management resources to deliver the repair
- A framework contract with several cable repair specialists. An initial framework has been developed for VBMS which will be used to engage further contractor with the view that all contractors will bid against the pre-agreed terms. These contracts are designed for minimum time to mobilise and effect repair.

We have not reviewed these contracts but consider this to be prudent measures in the event of a major failure.

3.3.5 Spares Strategy

Spares are currently stored at a BBUSL facility in Sunderland. Under the new strategy, all the spares excluding the spare export cables will be transferred to a storage facility at the Leiston site where EDS will build a suitable storage building in the large car park. An agreement will be maintained with BBUSL to store the export cables in Sunderland to avoid a costly cable move and risk damage to the cable. We consider the storage of the spares to be an appropriate arrangement.

EDS will be responsible for the management of spares with the responsibility to ensure they are cared for in accordance with OEM requirements and available for immediate use.

3.3.6 Maintenance Activity Strategy

The OFTO has developed a detailed maintenance strategy and maintenance requirements for each asset to ensure that plant performance requirements are met. The strategy includes Planned Preventative Maintenance, Planned Corrective Maintenance (where applicable), Lifecycle Replacement, loss risk strategy and Spares strategy are set out for each asset category and type. In preparation of the strategy, the OFTO considered the Developer Dataroom including OEM Operation and Maintenance manuals, drawings and reference to experience gained from the existing OFTO portfolio, condition assessment recommendations and international experience where relevant.

We have reviewed the items in Appendix 3 of the OFTO's Asset Management Strategy document listing the activities for each asset item. We are satisfied that the learnings and recommendations from the asset condition assessment have been incorporated into the strategy for the relevant items and that the strategies have been tailored to the current condition of the asset.

3.4 Draft O&M Contract

3.4.1 Contractor Scope of Services

We have reviewed Schedule 1 of the draft O&M Contract dated 4 September 2018. The scope for Marine license compliance services has been included in the Contractor scope. However, according to the Asset Management Strategy, the OFTO will contract with Marine Space to provide routine marine O&M and day-to-day services and support for Environmental and Consent in the event of a Major Failure Event. The OFTO has confirmed that this scope will be removed in the later revisions of the O&M Contract.

In summary, subject to the above revision we are satisfied with the adequacy of the Contractor's scope of work.

3.4.2 Commercial Arrangements between the OFTO and EDS

The proposed commercial arrangements between the OFTO and EDS based on the draft O&M Contract dated 4th September 2018 are outlined in Table 3.

Table 3: Proposed Commercial Arrangements between the OFTO and EDS

Item	Existing O&M Contract	New O&M Contract	Comment
Period of Contract	20 years	15 years	None

Item	Existing O&M Contract	New O&M Contract	Comment
Price	Fixed Annual Charge varies each year of the agreement.	Fixed annual charge paid in twelve equal instalments which varies each year of the agreement based on the revised Asset Management Plan at the end of each year.	Refer to Section 3.4.3 for assessment of price.
OFTO Termination Rights	<p>OFTO may terminate:</p> <ul style="list-style-type: none"> - Immediately if Operator enters into insolvency - Upon 10 days if Operator guilty of gross negligence - Upon 30 days if material failure by the Operator to perform its obligations - Upon 5 days if Operator abandons operation for a period of 48 hours - Forthwith in event the OFTO licence is revoked - Upon 30 days if the Operator fails to procure a valid and enforceable Guarantee - Upon 30 days in the event of Force Majeure affecting Operator from more than 180 days - Upon 30 days in event of change of control of the Operator - Forthwith in the event of persistent breach 	<p>OFTO may terminate:</p> <ul style="list-style-type: none"> - Immediately if Operator enters into insolvency - Upon 10 days if Operator guilty of gross negligence - Upon 30 days if material failure by the Operator to perform its obligations - Upon 5 days if Operator abandons operation for a period of 48 hours - Forthwith in event the OFTO licence is revoked - Upon 30 days if the Operator fails to procure a valid and enforceable Guarantee -if an Insolvency Event occurs in respect of the Guarantor and the Operator fails to procure a valid and enforceable replacement guarantee within 30 days - Upon 30 days in the event of Force Majeure affecting Operator from more than 180 days - Upon 30 days in event of change of control of the Operator - Forthwith in the event of persistent breach - In the event that the total aggregate liability of the Operator to the OFTO exceeds the cap during any one regulatory period. - In the event following a Review Notice and both Parties cannot agree on amendments to this Agreement, The OFTO termination will take place at the expiry of the current Five Year period. -Upon involuntary transfer of the Transmission System pursuant to the “OFTO of Last Resort” mechanism in the offshore Transmission License 	<p>A number of additional termination mechanisms are included in the new contract. A noteworthy item is the inclusion of a review period following the expiration of a Five Year Period where if both Parties cannot agree on amendments to this Agreement, the OFTO is entitled to terminate the contract on the Expiry of the Five Year Period.</p> <p>From a technical perspective we consider the OFTO termination rights acceptable.</p>
Operator Termination Rights	<p>Operator may terminate:</p> <ul style="list-style-type: none"> - Immediately if OFTO enters into insolvency - Upon 30 days if failure by the OFTO to perform its payment or other material obligations - After involuntary transfer of the OFTO assets to a third party 	<p>Operator may terminate:</p> <ul style="list-style-type: none"> - Immediately if OFTO enters into insolvency - Upon 30 days if failure by the OFTO to perform its payment or other material obligations - After involuntary transfer of the OFTO assets to a third party 	<p>From a technical perspective we consider the Operator termination rights acceptable.</p>

Item	Existing O&M Contract	New O&M Contract	Comment
Limit of Liability	Normally maximum £1m cap in one Regulatory Year If liability arises out of or in connection with any act or omission of Operator which results in the owner terminating the agreement then the Operators liability is capped at £2.5m	OFTO's maximum £1m cap per individual claim. If liability arises out of or in connection with any act or omission of Operator which results in the Owner terminating the agreement then the Operators liability is capped at 250% of the forecasted average annual feed.	We consider this sufficient; refer below for further discussion.
Change in law risk	Legal advisor to comment		Legal advisor to comment
Dispute resolution process (DRP)	Legal advisor to comment		Legal advisor to comment
Security package	Legal advisor to comment		Legal advisor to comment
Interface between sub-contractors	The Operator is entitled to subcontract services to Siemens, NGET, and the Generator	The Operator is entitled to subcontract some but not all of the Services. If the Operator intends to subcontract with non-affiliates of the Operator, the OFTO notified and is entitled to object the awarding of a contract.	We consider these conditions to be adequate

We have reviewed the limitation of liability clauses within the draft agreement between the OFTO and EDS and observe that the liability of EDS in event of termination of the agreement due to any act of omission of EDS is 250% of forecast average annual fees. From a technical perspective we consider this sufficient mitigation for the risk associated with the change of O&M provider.

We have reviewed a draft version of the new proposed O&M contract. The documentation that we have reviewed adequately covers the objectives and requirements of the new strategy. The final draft version will require review as there are a few clauses with placeholders to be completed during contract negotiations.

3.4.3 Price

EDS costs are approximately £718k on average per annum and the OFTO's total projected maintenance costs for the remainder of the 15-year Revenue Period is £1.13m on average per annum.

The projected maintenance costs are broadly similar to the average maintenance costs anticipated in the financial model that we reviewed during the Preferred Bidder due diligence process. The maintenance costs presented to us for the new maintenance arrangement are in line with our expectations for the operation and maintenance of three substations (two offshore and one onshore).

3.4.4 Efficiency Payment Incentive

A performance incentive is provided in the draft O&M contract for the Contractor to receive an additional payment at the end of every Five Year Period. This Efficiency Payment rewards the Contractor for performance against two criteria; for maintenance outturn costs relative to the agreed budget and the Availability Performance Revenue Adjustment payment the OFTO receives for exceeding the Ofgem target availability of 98%. If the net sum of these quantities is positive, the Contractor will receive an 80% share of the financial benefit'. If the sum of the

quantities is negative, the Contractor will not receive an Efficiency Payment and the negative result will be carried over to the next Five Year Period.

There are two separate calculations to the incentive; looking at the cumulative maintenance budget performance to date and the other calculation looking at the current 5-year maintenance budget window. The Efficiency Payment is the lesser of the two calculations.

We assess the Efficiency Payment to be a suitable mechanism to incentivise the Contractor to exceed targets rather than meet minimum standards. The availability and maintenance criteria are appropriate measures for performance and assessing cumulative performance over the contract duration.

3.4.5 Availability Deductions

If the OFTO incurs any Availability Deductions as a result of the Contractor's negligence, the Contractor will be liable for full payment to the OFTO in respect of these amounts to an annual cap of 100% of the forecasted average annual maintenance fees. Any Availability Deduction liability exceeding the Annual Cap will be carried over to the next regulatory year.

We consider this to be a reasonable and fair limit to the Contractor's liability in relation to availability deductions.

3.4.6 Guarantee

Immediately upon execution of the new O&M Agreement, EDS will provide a Guarantee to the OFTO. The maximum aggregate liability of the Guarantor is £10,000,000. The aggregate liability value is sufficient to cover the 14 years based on the Contractor's forecasted average annual fees (£718k per year). We consider the maximum aggregate liability of the Guarantor to be adequate.

3.4.7 Service Levels

We have reviewed the service level matrix in Schedule 13 of the O&M Contract. The service levels include measurable criteria to evaluate the performance of the services provided by the Contractor. Non-performance by the Contractor may cause a Persistent Breach procedure in Clause 14 of the O&M Contract. The O&M Contract allows the service level matrix to be amended by the OFTO once per year with agreement from the Contractor.

The categories contained in the service level matrix broadly cover the main areas of Contractor service including, safety, quality of work, environment, outage performance, response time and fault management. We consider these categories to be appropriate. The current form of the draft O&M Contract has placeholders for the criteria values for each category and it is not possible to comment on these at this stage. We expect these values to be negotiated between the OFTO and the Contractor.

3.5 Contingency and Emergency Planning

EDS has provided an Emergency Response Plan specific for the Greater Gabbard OFTO. We have reviewed the emergency response plan and conclude that it covers most of the emergency scenarios that could take place offshore and on onshore environments. Suitable detail is provided on the procedure to be followed and the emergency contact details per scenario.

The Contingency Plan has not been developed at this stage. The OFTO has advised that this document will be formally produced if a contract with EDS is finalised and will be completed within the first few months post contract award.

3.6 Safety Systems

Documentation detailing EDS's safety systems has been received and appears to be acceptable. EDS use an electronic database system for keeping track of authorisations and for electrical switching planning. This assists in the management of safe systems of work and operation. We expect the OFTO maintenance activities to be carried out under these systems under the new arrangement.

3.7 OFTO Transition Plan

A Transition Plan document compiled by EDS was reviewed and we conclude that the document adequately addresses the requirements to transfer the O&M services from BBUS to EDS. The salient points covered by the Transition Plan are:

- Current control point services are provided by SSE. These services will eventually be provided by EDS from their Belfast control centre in the new regime, however there are a number of technical changes that will be required. Whilst these changes are implemented and EDS staff trained, EDS will enter into a commercial agreement with SSE to secure their services during the transition process so there is no interruption in service. The EDS control room will be established to operate in parallel with the SSE team during the interim transfer process.
- Under the current O&M Agreement, SSE perform many of the site-based operations such as electrical switching, marine coordination and logistics and landlord services for the onshore and offshore installations belonging to the OFTO. These services will transition to EDS.
- As site operation will transition from SSE to EDS, the SSE Operation Safety Rules will be replaced by EDS Electrical & Mechanical Safety Rules after review and approval of the documentation by key stakeholders- the Generator and National Grid.
- In advance of the transition date the core EDS operational team will be trained to familiarize themselves with the OFTO site and systems.
- Key stakeholders at the interface points namely National Grid Electricity System Operator (NGESO) and SSE as the Generator will be notified of the O&M contractor change.
- A day before the transition date both SSE and EDS senior authorised persons will perform a walk-down of the onshore and offshore substations to complete the following tasks:
 - SSE will remove their operational locks and EDS will replace with their locks.
 - SSE will remove any signage referring to SSE's control centre. This may be delayed subject to the establishment of the EDS control room facilities for Greater Gabbard.
 - EDS will apply the necessary signage in accordance with the EDS Electrical & Mechanical Safety Rules.
 - SSE shall remove all other items relating to the SSE Operational Safety Rules from all three substations including but not limited to; SSE unique key safes, safety locks and document books, demarcation equipment, earthing equipment belonging to SSE and all other tools and equipment belonging to SSE.
 - EDS shall install any and all equipment they require to manage operations and safety from the system in accordance with the EDS Electrical & Mechanical Safety Rules.

- Marine coordination and logistics services will be transitioned from SSE to EDS's parent company JFMS.

We consider the transition plan to be robust with milestone dates provided to ensure a planned and orderly transition of services.

3.8 Procurement Management

EDS have provided sample procurement process flow maps and supplier report forms. We would expect that if EDS is appointed as the new O&M Contractor that project-specific process maps are compiled and revised as part of continuous quality improvement.

3.9 Health, Safety and Environmental Management

EDS have provided sample HSE and Quality Assurance documentation from another wind farm project. We consider these documents to be reasonable. We would expect that if EDS is appointed as the new O&M contractor that project-specific requirements and processes are compiled and revised as part of continuous quality improvement.

3.10 Operations and Maintenance Summary

We have reviewed all the documentation provided by the OFTO and highlight the following:

- The asset management strategy and approach has been amended to follow a risk-based approach to asset management. This entails flexible structuring of maintenance activities to align with the condition of the asset and the asset loss risk. From our experience this type of strategy has been used in the industry and is a suitable approach to maintenance.
- The asset management strategy proposes that the incumbent O&M contractor (BBUSL) is replaced by EDS HV Engineering for the remainder of the Revenue Period. We consider EDS to be a competent contractor.
- Non-critical items to the OFTO's availability including diesel generators, cranes, fire systems and HVAC equipment will be the O&M Contractor's responsibility where the Contractor will carry life-time risk up to cap of £10,000 per annum.
- The scope for cable repair and environmental monitoring and consents has been removed from the O&M contractor responsibilities and the OFTO will contract directly with specialist contractors. The new O&M contractor will assist where required for these scope items.
- Operation services provided by SSE on behalf of BBUS such as control room services and senior authorised persons, will be provided by EDS. We consider this an improvement to the operating arrangement with all services provided by one provider using in-house skills.
- The Transition Plan provided by EDS is robust and provides a systematic approach for the transfer of services.
- The new draft O&M contract has been reviewed and is aligned with the objectives and strategy outlined in the asset management strategy and we consider it fit for purpose:
 - A 'flexible' maintenance approach is a requirement of the O&M contract. The Contractor will be required to review the maintenance plan forward looking to the end of the Revenue Period on an annual basis. Forecast annual maintenance costs will also be revised in this exercise.
 - Performance of the O&M Contractor is incentivised through an Efficiency Payment. This payment mechanism incentivises long term performance of the Contractor by evaluating cumulative budget performance to date and five year performance.

- A Five Year Review process is implemented in the Contract that allows both parties to amend the O&M Contract.
- Termination mechanisms of the contract have been expanded from the previous contract. Notable new termination options include failure by the Operator to deliver a valid Guarantee and the option to terminate if agreement cannot be reached during the Five Year Reviews mentioned above. We consider this to be an improvement to the old contract.
- Aggregate maximum liability for both the OFTO and the Contractor are reasonable and are broadly similar to the previous contract.
- We have reviewed the HSE Plan, Safe Systems of Work document, Incident Response Plan and QA Plan and the content provided in each document is reasonable.

4 Conclusion

In conclusion, the condition assessment performed by EDS during the summer of 2018 highlighted the following:

- There were many issues identified in the condition assessment, however the findings of the inspections found that the main/core assets were in a good condition and that there are no immediate risks to the integrity of the core assets. The core assets are relatively maintenance free with little intervention required.
- Most of the findings were related to peripheral equipment such as, cranes, water systems, fire systems, metal structures and balance of plant systems. The findings on these pieces of equipment were not of any immediate concern and generally related to house-keeping, corrosion and record keeping issues, particularly documenting planned preventative maintenance activities.
- Recommendations were made in the condition assessment report to address the findings and these have been incorporated into the revised OFTO Asset Strategy Plan.

The revised O&M arrangements have been reviewed and the salient points have been summarised as follows:

- A revised asset management strategy has been developed by the OFTO and is a reasonable technical approach to maintaining the transmission asset. The strategy describes a flexible approach to maintenance activities based on the asset condition and the asset loss risk.
- The revised strategy proposes replacing BBUS as the incumbent O&M Contractor with EDS as the new O&M Contractor. Under the current maintenance arrangement, the OFTO has become concerned that their long-term performance is not being adequately addressed. We note that EDS is an established O&M service provider in the offshore wind energy industry and we consider that their knowledge and experience is suitable to deliver the new asset management approach. EDS will contract with specialist contractors such as Siemens for ad hoc services and other specialists as required.
- An incentive payment mechanism is proposed in the revised O&M arrangement and we consider it appropriate to promote long term and short-term performance of the Contractor.
- A bespoke draft O&M Contract was reviewed and is aligned with the objectives of the asset management strategy and suitable to deliver the outcomes expected of the Contractor.
- The revised O&M maintenance costs were updated and included the recommendation activities proposed in the condition assessment report compiled by EDS. The total O&M costs projected for the remaining 15 years of the Revenue period are broadly similar to the initial financial model with the average per annum cost of £1.13m for the revised costs and £1.17m forecasted in the financial model for the 20-year period.
- A Transition Plan has been reviewed and is suitable for the transfer of operational services from SSE to EDS.

We conclude that the changes proposed by the OFTO are in accordance with Good Industry Practice, that they do not breach the terms of the Core Transaction Authorisations and will not adversely alter the risk profile of the contracts.

5 Reference Documents

The following documents were reviewed in this report:

Table 5: Documents reviewed in the analysis of this report

Item	Description	Date received
1	Greater Gabbard 2018 Asset Management Strategy v draft 0.2.docx	24/10/2018
2	Attachment 13 - Service Provider's HSE Plan.pdf	08/10/2018
3	Attachment 14 - Service Provider's Quality Assurance Plan.pdf	08/10/2018
4	PROC-P-001 Procurement Process Flow Chart.pdf	08/10/2018
5	CORP-QA-P-003-F-03 Supplier AUDIT Report Form.pdf	08/10/2018
6	CORP-QA-P-003 AUDITING & MGMT SITE VISITS.pdf	08/10/2018
7	Safe Systems of Work & Operations.docx	08/10/2018
8	080118_GG_Leiston_ACA_Rev3.docx	08/10/2018
9	080118_GG_IGSUB_ACA_Rev2.docx	08/10/2018
10	080118_GG_GASUB_ACA_Rev2.docx	08/10/2018
11	Gabbard_Offshore_EastFacing.pdf	08/10/2018
12	Gabbard_Offshore_NorthFacing.pdf	08/10/2018
13	Gabbard_Offshore_SouthFacing.pdf	08/10/2018
14	Gabbard_Offshore_WestFacing.pdf	08/10/2018
15	Galloper East Facing Report opt.pdf	08/10/2018
16	Galloper North Facing Report opt.pdf	08/10/2018
17	Galloper South Facing Report opt.pdf	08/10/2018
18	Galloper West Facing Report opt.pdf	08/10/2018
19	Leiston Onshore Sub Station Report opt.pdf	08/10/2018
20	M00124-OPS-50-REP-AAA-0001 - Gabbard Life raft davit Equipment Service Report 001.pdf	08/10/2018
21	M00124-OPS-50-REP-AAA-0001 - Inner Gabbard Life raft davit Equipment Service Report.pdf	08/10/2018
22	2018133-RP-001.pdf	08/10/2018
23	2018133-RP-002.pdf	08/10/2018
24	SWR0552 Galloper.pdf	08/10/2018
25	SWR0553 Gabbard.pdf	08/10/2018
26	M00124-OPS-50-REP-AAA-0001 - Heila Crane Equipment Service Report.pdf	08/10/2018
27	M00124-OPS-50-REP-AAA-0001 - Kenz Crane Equipment Service Report.pdf	08/10/2018
28	M00124-OPS-50-REP-AAA-0001 - Palfinger Crane Equipment Service Report.pdf	08/10/2018
29	M00124-OPS-50-REP-AAA-0001 - Stahl electric chain hoist Equipment Service Report.pdf	08/10/2018
30	B McMorro Service Sheet.pdf	08/10/2018
31	Greater Gabbard OFTO - Operational Transition Plan.docx	08/10/2018
32	Greater Gabbard OFTO - Emergency Response Plan.docx	08/10/2018
33	OM Contract 040918.docx	08/10/2018
34	GG Incident Management Plan v0.3.pdf	08/10/2018
35	080618_GG_Cost_Matrix_Maintenance_Frequency_Plan_Rev08	26/10/2018

GREATER GABBARD REPLACEMENT O&M CONTRACT

LEGAL REPORT

Draft 1: 28 October 2018

INTRODUCTION

This report provides a summary and commentary on the key terms of a draft Operation & Maintenance Contract (draft 3 dated 4 September 2018) which may, subject to corporate and funder approvals, be entered into between Greater Gabbard OFTO PLC (the "**OFTO**" or the "**Owner**") and [Electricity Distribution Services Limited] (the "**Operator**") for the provision of operation and maintenance services for the Greater Gabbard Offshore Transmission System (the "**Agreement**").

Unless otherwise defined, capitalised terms used in this note have the meaning given to them in the Agreement. This report is addressed to Greater Gabbard OFTO PLC and may not be relied upon by any other person save that this report may be disclosed to financiers providing finance in relation to the OFTO but those financiers shall only be entitled to the benefit of this report in their capacity as providers of finance to the OFTO Business and subject to the financiers signing a letter in the form set out in the appendix to this note and solely on the terms of that letter.

KEY:

Blue Advice from technical, insurance or other third party consultants is recommended.

Reference	Comment
Parties	(1) Greater Gabbard OFTO PLC (registered number 08180541) (the " Owner " or the " OFTO ") (2) [Electricity Distribution Services Limited (registered number 04712381)] (the " Operator ")
Subject Matter	The provision of operation and maintenance services for Greater Gabbard Offshore Transmission Assets.
Term (clause 2)	The Agreement is effective immediately and will subsist until 1 April 2034 (i.e. the full twenty year revenue period under the OFTO's transmission licence.

Reference	Comment
	<p>The Owner may extend the term for a further five year period upon agreeing the Operator's fee proposal for this period (or any negotiated alternative fees agreed between the parties).</p> <p>The Owner enjoys the ability to review the Services at five yearly intervals and propose amendments to the Agreement which it considers necessary to ensure the Services are fit for purpose, having regard to prevailing Good Industry Practice and other factors. If the Operator does not agree to the Owner's proposed amendments (or any negotiated alternative amendments) then the Owner enjoys the option to either: (a) continue with the Agreement in its existing form, un-amended; or (b) terminate the Agreement. Note: we consider the terms of the five yearly review and break option in favour of the Owner to be more favourable than current OFTO Market O&M offerings.</p>
<p>Interim Services (clause 4.1)</p>	<p>During the period from execution of the Agreement until 1 April 2019, "Interim Services" are to be provided. These are essentially the full Services (discussed below) plus various items of Backlog Maintenance which have been identified as being necessary in order to bring the Assets up to standard.</p> <p>Unlike the full Services, the Interim Services are paid for on a fixed price basis, payable monthly in arrears. This is in order to: (a) simplify the transition of the Operator into the more sophisticated payment mechanism at the start of the next Regulatory Year; and (b) ensure that the Operator is assuming time and cost risk on completion of the Backlog Maintenance.</p>
<p>Scope of Services (clause 4 & Schedule 1)</p>	<p>The scope of Services is set out in Schedule 1 and includes:</p> <ul style="list-style-type: none"> (a) development and maintenance of the Asset Management Plan; (b) provision of an asset database and management system for the storing of all operational logs and maintenance records; (c) performance monitoring to ensure the Performance Objectives (discussed below) are fulfilled and the Performance Standards are met and taking corrective action to remedy performance or to improve it or the efficiency of delivering the service; (d) undertaking all of the OFTO's obligations under the System Operator – Transmission Owner Code (STC); (e) HV safety management; (f) maintenance and inspection in accordance with the Asset Management Plan;

Reference	Comment
	<p>(g) Provision of all vessels and associated marine safety management and on-land marine co-ordination and control;</p> <p>(h) Marine Licence compliance;</p> <p>(i) Transmission Licence and other consent compliance;</p> <p>(j) asset management;</p> <p>(k) Reporting breach of Regulatory Requirements, and health and safety incidents etc.</p> <p>(l) Storage, maintenance and management of spare parts;</p> <p>(m) Outage planning in accordance with the requirements of the STC;</p> <p>(n) assistance with insurance claims and disputes;</p> <p>(o) assistance with liaison with funders, funders' technical adviser, Ofgem, HSE and other stakeholders.</p> <p>Note: your technical adviser should review and confirm the adequacy of the scope of services.</p>
<p>Performance Standards & Performance Objectives (clause 5)</p>	<p>The Operator is required to operate and maintain the Offshore Transmission System and perform the Interim Services and the Services in good faith in accordance with the following Performance Standards:</p> <p>(a) the Standards of a Reasonable and Prudent Operator;</p> <p>(b) the Asset, Operational, and HSEQ Performance Requirements;</p> <p>(c) all relevant health and safety legislation and environmental consents;</p> <p>(d) all Applicable Laws and Industry Documents;</p> <p>(e) the Approved Asset Management Plan;</p>

Reference	Comment
	<p>(f) the Operating Approvals, the Property Agreements, the Interface Agreement, the Financing Documents and (subject to any permitted relaxations) the Commercial Contracts (i.e. repair contracts and other third party contracts entered into by the OFTO for the supply or installation of new parts etc.);</p> <p>(g) Good Industry Practice; and</p> <p>(h) the terms of the Agreement,</p> <p>in order to fulfil the following Performance Objectives:</p> <p>(i) maximising the Owner's economic interests;</p> <p>(ii) maximising amounts paid to the Owner under the Transmission Licence;</p> <p>(iii) minimising unplanned outages and Unavailability; and</p> <p>(iv) developing a culture of continuous improvement leading to potential reductions in annual operating costs through use of leading edge asset management techniques.</p> <p>If there is any conflict between the Performance Standards and the Performance Objectives, the Performance Standards must take priority.</p> <p>Note: the Performance Objectives are more beneficial to the Owner than equivalent terms we typically see on other OFTO O&M contracts.</p>
<p>Acceptance of Asset Condition (clause 5.2)</p>	<p>The Operator accepts the Assets in their current state and condition and is responsible for the ascertainment and rectification of Existing Defects other than those (if any) which are specifically listed as being the cost responsibility of the Owner (<i>Excluded Defects</i>) which the Operator must rectify but is entitled to receive reimbursement for. At present Schedule 17 (<i>Excluded Defects</i>) is not populated.</p>
<p>Records and Audits (clause 8)</p>	<p>The Operator must maintain a full record of particulars of the cost of performing the Services and provide a summary of these to the Owner. The Operator must also maintain a full record of each Insured Event, Allowable Event (being those which the Operator is entitled</p>

Reference	Comment
	<p>to additional cost reimbursement, discussed below), events of Force Majeure and Exposures (a situation which constitutes an Emergency or imposes an immediate risk of Unavailability or material economic loss to the Owner).</p> <p>The Operator must maintain open book accounting showing administrative overheads, payments to Sub-Contractors, capital and revenue expenditure and such other items as the Owner may require to conduct cost audits for verification of cost expenditure or estimated expenditure.</p> <p>The Owner enjoys extensive audit rights for both financial and management audits, including rights of access to and inspection of the Operator's personnel and all management information.</p>
<p>Asset Management Plan (clause 9)</p>	<p>The Operator is required to submit an Asset Management Plan not later than 31 December each Year for the Owner's approval for the following Regulatory Year (1 April – 31 March). The Asset Management Plan is subject to detailed requirements set out in Part 1 of Schedule 7 to the Agreement and must also:</p> <ul style="list-style-type: none"> (a) include an inspection and renewal regime based on asset condition, performance and system criticality; (b) include a methodology for forecasting future investment levels in systems, processes and resources to provide the Services; (c) include detailed costing of maintenance and renewal activities; (d) include planned and actual investment profiles showing investment by Regulatory Year; (e) provide for development of optimum operating requirements to integrate delivery of renewal and maintenance activity to minimise disruption; (f) provide an appropriate balance of innovation compared with convention to ensure a cycle of continuous improvement. <p>The Owner enjoys the right to approve and/or amend the Asset Management Plan. The Operator enjoys limited rights to object to any amendments required by the Owner only on grounds that it would result in the Operator breaching the Agreement or is likely to result in injury to persons or damage to property but if the Owner disagrees whether either of these two grounds applies, the matter can be referred to an Expert for determination.</p>
<p>Spare Parts</p>	<p>The Operator is responsible for the procurement, testing, maintenance and storage of Spare Parts (other than any provided by the</p>

Reference	Comment
(clause 10.1)	<p>Generator as part of the initial asset transfer).</p> <p>If either party becomes aware that the manufacture of certain Spare Parts will be discontinued the Operator is obliged, if required to the Owner, to order such quantities as the Owner may require or use reasonable endeavours to procure that the original equipment manufacturer provides drawings, patterns and specifications necessary to enable the manufacture of the discontinued parts.</p> <p>Upon utilisation, the Operator gives a spare parts warranty against defects for a period equal to the equivalent manufacturer's or supplier's warranty period but this must be not less than 12 months following installation.</p>
<p>Sub-Contracting (clause 10.2)</p>	<p>The Operator is entitled to subcontract some (but not all or substantially all) of the Services to any person who the Operator is satisfied has the requisite expertise and technical and financial resources provided that</p> <p>(i) for any material element of the Services (either by reference to contract value or criticality) subcontracted to a person other than an Affiliate of the Operator, the Owner may object on grounds that the proposed person doesn't have the requisite experience etc. or that the Owner has any other legitimate concerns; and</p> <p>(ii) the Operator must not subcontract any element of the Services to a person the Owner has previously notified the Operator it has legitimate concerns over.</p> <p>The Operator is prohibited from entering into contracts with its Affiliates in connection with the Services unless they are on arm's length commercial terms and the Owner has previously given its approval.</p> <p>The Operator is required to ensure that material contracts are freely assignable to the Owner in the event of termination of the Agreement and that the Operator enjoys rights of recovery for losses, damages etc. suffered by the Owner resulting from breach of the relevant contract (subject to limitations and exclusions of liability etc.).</p>
<p>Payment Mechanism (Schedule 2)</p>	<p><u>Categorisation & Allocation of Cost Responsibility</u></p> <p>Maintenance activities fall into three categories: (a) Planned Preventative Maintenance; (b) Planned Corrective Maintenance; and (c) Unplanned Corrective Maintenance.</p> <p>Cost Responsibility for these three categories of maintenance are allocated to the Operator (i.e. it is part of the Fixed Annual Charge) or to the Owner (i.e. it is reimbursable by the Owner as an allowed additional cost) on an Asset by Asset basis as specified in the Asset</p>

Reference	Comment
	<p>Schedule set out in Appendix 2 to Schedule 2.</p> <p><u>Annual Operating Charge</u></p> <p>The Operating Charge payable in a Regulatory Year is the sum of</p> <p>(A) the Total Fixed Charge (i.e. the fixed price services);</p> <p>+</p> <p>(B) the Owner Approved Planned Maintenance Costs (i.e. those planned maintenance costs for which the Owner has Cost Responsibility which have been identified and provided for in the Approved Asset Management Plan)</p> <p>+</p> <p>(C) an Adjustment Value for certain contract Variations which have not otherwise been accounted for and any difference between the budgeted spend on planned maintenance for which the Owner has Cost Responsibility for the previous Regulatory Year and the actual spend on that planned maintenance during the previous Regulatory Year (i.e. the budgeted spend for this category is fixed at the beginning of the year and then reconciled against actual expenditure at the end of the year with the reconciliation amount then carried forward into the following year's Operating Charge).</p> <p>The Operating Charge is payable in twelve equal monthly instalments in arrears.</p> <p><u>Extraordinary Additional Costs</u></p> <p>In addition to the Operating Charge, if an Allowable Event occurs (Excluded Defects the Operator is not taking Cost Responsibility for, defects in third party works which the Owner has commissioned itself, Insured Events or other events beyond the Operator's reasonable control which were not foreseeable or caused by the Operator's breach but always excluding Existing Defects and defects in the Operator's own work) which results in the Operator incurring:</p> <p>(a) planned corrective maintenance costs on those Assets for which the Operator has Cost Responsibility but only to the extent that the Operator has demonstrated the costs arose solely as a result of the Allowable Event, are justified by demonstration through cost/benefit analysis of all options, including the "do nothing" option, in aggregate exceed £10,000 in a single Regulatory Year and are approved by</p>

Reference	Comment
	<p>the Owner (discussed below); or</p> <p>(b) unplanned corrective maintenance costs on Assets for which the Owner has Cost Responsibility, which, in both cases, have not been provided for in the Updated Residual Budget.</p> <p>If an Allowable Event occurs, the Parties must agree a mitigation plan showing how the Additional Costs will be mitigated and including a cost-benefit analysis of all available options.</p> <p>Once approved, these Additional Costs are factored into the Approved Asset Management Plan for the year (assuming there is time to do so) which then feeds into the annual Operating Charge, failing which they will be reimbursed on an ad hoc basis as and when incurred as Unplanned Additional Costs.</p> <p><u>RPI Indexation</u></p> <p>The Fixed Annual Charges, the Budgeted Corrective Maintenance Costs and the Budgeted Planned Maintenance Costs (both specified in the Original Budget) all benefit from indexation by reference to RPIx (all items excluding mortgages).</p> <p><u>Efficiency Savings Payment</u></p> <p>At the end of every Five Year period, the Operator is entitled to an Total Efficiency Savings Payment of 80% of cost efficiency savings calculated on a whole contract life basis (i.e. it not only takes into account actual savings realised against budgeted costs for which the Owner has Cost Responsibility for the immediately previous Five Year period but also the cumulative total actual costs and savings to date for all previous Five Year periods and the Updated Residual Budget for the remainder of the contract term). This is designed to ensure that the Owner is protected against making an Efficiency Savings Payment in circumstances where expenditure has been deferred to the following period (rather than more efficiently incurred) or future budgeted costs have inflated from that originally provided.</p> <p>The Availability Performance Revenue Adjustment made under the OFTO's Transmission Licence for good or poor Availability is also factored into the five yearly Total Efficiency Savings Payment.</p> <p>The Total Efficiency Savings Payment is designed to help ensure the Operator's interests are fully aligned on minimising cost reimbursable expenditure on a whole contract life basis.</p>

Reference	Comment
<p>Payment Terms (clause 12)</p>	<p>The Monthly Charge (1/12th of Operating Charge) and any Unplanned Additional Costs incurred (both discussed above) are payable monthly in arrears.</p> <p>Invoices are payable within 20 Business Days, subject to disputed amounts which may be withheld pending resolution of the dispute.</p> <p>The Owner enjoys the right to set-off any amount which the Operator either disputes or has failed to pay.</p> <p>Interest accrues on late payments at 2% above Barclays Bank base rate.</p> <p>Payments are inclusive of all Taxes (other than applicable VAT).</p>
<p>Force Majeure (clause 13)</p>	<p>Relatively standard relief is available to both parties for the performance of obligations which are prevented by Force Majeure. As is standard for this market, force majeure is defined broadly to include all events beyond a party's control but, in the case of the Operator has an additional requirement that the event must be one which an experienced operator could not have foreseen. Force Majeure excludes events caused by breach of contract or statutory duty of the affected party or its subcontractors, employees or agents.</p> <p>In order to benefit from relief for Force Majeure the affected party must promptly notify the other party, exercise all reasonable efforts to mitigate and provide regular updates as to the actions it is taking.</p> <p>If Force Majeure prevents either party performing any material obligation for more than 180 days then the Owner (only) can terminate the Agreement.</p>
<p>Persistent Breach (clause 14 and Schedule 13)</p>	<p>If the Operator fails to achieve any of the service levels set out in Schedule 13 (<i>Service Levels</i>), the Owner can serve a Warning Notice. If the Owner has served two Warning Notices in respect of the same breach within a twelve month period, the Owner can serve a Final Warning Notice.</p> <p>If the same breach recurs during the six month period following a Final Warning Notice, the Owner can elect to terminate the Agreement for the Operator's default.</p> <p>Two Warning Notices in a twelve month period also entitles the Owner to require that a remedial plan be submitted to the Owner for approval and thereafter implemented. Failure to implement the Remedial Plan is deemed to constitute a valid Warning Notice and so may result in termination for Operator's default.</p>

Reference	Comment
	Note: your technical adviser should review the Service Levels set out in Schedule 13.
Termination (clause 15)	<p><u>Termination by Owner</u></p> <p>Extensive termination rights are available to the Owner for:</p> <ul style="list-style-type: none"> (a) insolvency related events; (b) Gross Negligence or Wilful Default (subject to a maximum thirty day remedy period); (c) material breach, including payment default (subject to thirty day remedy period); (d) abandonment; (e) revocation of the Offshore Transmission Licence; (f) repudiation of the Guarantee or insolvency of the Guarantor (subject to thirty day remedy period); (g) a change of control of the Operator; (h) Persistent Breach (discussed above); (i) exceedance of the Operator's Annual Cap (discussed below); (j) following a Five Year Review (discussed above) if the parties cannot agree on the necessary amendments to the Agreement; and (k) involuntary transfer of the Offshore Transmission System to an OFTO of Last Resort. <p><u>Termination by Operator</u></p> <p>Limited termination rights are afforded to the Operator for</p>

Reference	Comment
	<p>(i) insolvency of the Owner;</p> <p>(ii) non-payment or material breach (subject to thirty day remedy period); and</p> <p>(iii) involuntary transfer of the Offshore Transmission System to an OFTO of Last Resort.</p> <p><u>Termination Payments</u></p> <p>Upon termination either party shall pay to the other party the net amount owed to it which:</p> <p>(a) may include the costs to the Owner of contracting a replacement operator and the cost of debt repayments and associated costs and interest under the Financing Documents if the Operator's breach or negligence leads to the Offshore Transmission Licence being revoked;</p> <p>(b) excludes compensation for loss of profit to the Operator unless terminated due to the Owner's default, in which case the Operator is entitled to Breakage Costs (terminating subcontracts, demobilisation and redundancies) plus a fair and reasonable proportion of the Total Efficiency Savings Payment the Operator would have been entitled to at the end of the Five Year Period in which the termination date occurred.</p> <p><u>Transition</u></p> <p>The Operator is obliged to provide various transitional services during the period of 12 months following termination to facilitate a successor operator being appointed provided that any material expenditure on third parties must be paid for by the Owner. The Operator provides an appropriate TUPE indemnity in favour of the Owner against claims by any employees who transfer across to the Owner or its successor operator.</p>
<p>Indemnities (clause 16)</p>	<p><u>Damage to Offshore Transmission System</u></p> <p>The Operator is obliged to make good any loss or damage to the Offshore Transmission System caused by it in the course of performing its obligations (or failing so to perform), subject to the Annual Cap (discussed below).</p> <p><u>Third Party Damage</u></p>

Reference	Comment
	<p>The Operator indemnifies the Owner, its Affiliates, contractors, employees and agents against personal injury or death to third parties and third party property damage to the extent caused by a negligent act, omission or default by the Operator Group (Operator, Affiliates, Subcontractors, their respective officers, employees, agents).</p> <p>The Operator is not obliged to indemnify the Owner Group against third party death, personal injury or property damage to the extent caused by negligence or default of the Owner Group and the Owner must indemnify the Operator Group and hold it harmless from all such claims.</p> <p><u>Pollution</u></p> <p>The Operator indemnifies the Owner Group against claims for pollution, clear up, wreck and debris removal resulting from the acts or omissions of the Operator Group.</p> <p><u>Limited Mutual Hold Harmless</u></p> <p>There is a limited mutual hold harmless indemnity regime whereby each party indemnifies the other party against liability for death or personal injury to its own personnel save to the extent that the death or injury has been caused by the negligence of the other party.</p> <p><u>Conduct of Claims</u></p> <p>The Indemnifying Party is entitled to take-over and conduct proceedings for the defence / settlement of any claim subject of an indemnity.</p>
<p>Liability Limit (clause 17)</p>	<p>The aggregate liability of the Operator Group in any Regulatory Year is limited to an Annual Cap equivalent to 100% of forecast annual average fees.</p> <p>The Operator's liability for termination of the Agreement is limited to an amount equivalent to 250% of forecast annual average fees.</p> <p>Other than decommissioning and claims for death or personal injury, the Operator is released from liability 12 months after the Expiry Date (save for any claims notified before that date).</p> <p>The limitations on liability are subject to extensive exclusions (i.e. unlimited liability) in respect of: (a) the Third Party Damage indemnity; (b) the Limited Mutual Hold Harmless indemnity; (c) death or personal injury caused by the Operator's negligence; (d) Wilful Default by</p>

Reference	Comment
	<p>the Operator; (e) amounts recovered by the Operator under the insurances the Operator is obliged to maintain or which would have been recovered but for breach of that obligation; (f) amounts recovered under the Owner's insurances; (g) insurance deductibles suffered by the Owner which (i) the Operator is obliged to reimburse because it's default has resulted in an increase in the deductible level; or (ii) has resulted from damage to the Assets caused by the Operator.</p> <p>The Owner benefits from a limit of liability of £1 million per incident or series of related incidents, save for fraud or death or personal injury caused by the Owner's negligence.</p> <p>Save for Availability Deductions (which are factored into the Total Efficiency Savings Payment, above), neither party is liable to the other for consequential or indirect losses etc.</p> <p>The rights and remedies expressly provided under the Agreement for a specific matter are the exclusive remedies for that matter (save for equitable relief).</p>
<p>Guarantee (clause 18 & Schedule 6).</p>	<p>The Operator is obliged to provide a parent company guarantee from [James Fisher and Sons PLC]. The Guarantee is a full performance guarantee on appropriate terms with an aggregate limit of liability of £10 million. The Guarantee subsists until 12 months after the Expiry Date, save for any accrued obligations and liabilities as at that date.</p> <p>If a Material Adverse Change (a material and significant deterioration in the business, condition etc. of the Guarantor or its ability to perform the Guarantee) occurs in respect of the Guarantor, the Owner can require that the obligations of the Operator are secured by additional or replacement security to the satisfaction of the Owner.</p>
<p>Insurance (clause 19)</p>	<p><u>Owner Insurances</u></p> <p>The Owner is obliged to ensure that the Operator is an additional named insured on the physical damage and loss policy relating to the Assets (including Spares) and third party liability policy and that the insurance contains a waiver of subrogation against the Operator and the Operator Group.</p> <p>The Owner is relieved from insuring against a risk which becomes Uninsurable (cover either not available or prohibitively expensive).</p> <p><u>Operator Insurances</u></p>

Reference	Comment
	<p>The Operator must maintain:</p> <ul style="list-style-type: none"> (a) employer's liability insurance; (b) marine hull and machinery insurance including war risk and collision liability in respect of all vessels used in an amount not less than declared vessel value; (c) protection and indemnity (P&I) insurance including wreck and debris removal and oil pollution in respect of all vessels etc. owned, leased or hired for an amount not less than the greater of: (i) declared vessel value(s); and (ii) £25 million; (d) such other insurances required by law. <p>The insurances must contain a waiver of subrogation against the Owner Group.</p> <p>If the Operator fails to maintain the required insurances, the Owner can effect such insurance and recover the costs (subject to 60 day remedy period).</p> <p>If insurance premiums or deductibles are increased due to Operator's Wilful Misconduct, Gross Negligence or material or repeated breach, the Operator is liable for the increased premium / deductible.</p> <p>Note: your insurance advisers should review and comment on the insurance provisions.</p>
<p>Intellectual Property (clause 20)</p>	<p>IP created by the Operator Group in the course of performance of the Services remains vested in the Operator but the Owner receives an irrevocable royalty free non-exclusive perpetual, transferable, sub-licensable licence of the same for the purposes of operating and maintaining the Offshore Transmission System.</p> <p>The Operator also grants a royalty free licence of all IP owned or used by the Operator required in connection with the performance of the Operator's obligations under the Agreement for the purpose of operating and maintaining the Offshore Transmission System. This licence expires 2 years after termination of the Agreement.</p> <p>The Owner grants a royalty free licence to the Operator of IP owned or licensed to the Owner to the extent necessary to enable the Operator to perform its obligations.</p>

Reference	Comment
	The Operator indemnifies the Owner against third party claims for infringement of IP.
Assignment (clause 21)	<p>The Operator is prohibited from transferring the Agreement other than an assignment or transfer to its Affiliate provided the Guarantee continues to cover the obligations of the transferee and assignments of its right to receive monies due but in each case provided this does not contravene the Owner's obligations under the Financing Documents.</p> <p>The Owner is entitled to assign or transfer all or any benefit of the Agreement to any entity for the purpose of financing the Offshore Transmission System and enforcement of that security.</p> <p>The Operator is required to enter into a direct agreement with the Funders and to co-operate and provide information as the Owner may reasonably require in order to comply with the Financing Documents.</p>

APPENDIX
RELIANCE LETTER

[Note: insert agreed form of draft reliance letter in favour of senior lenders.]

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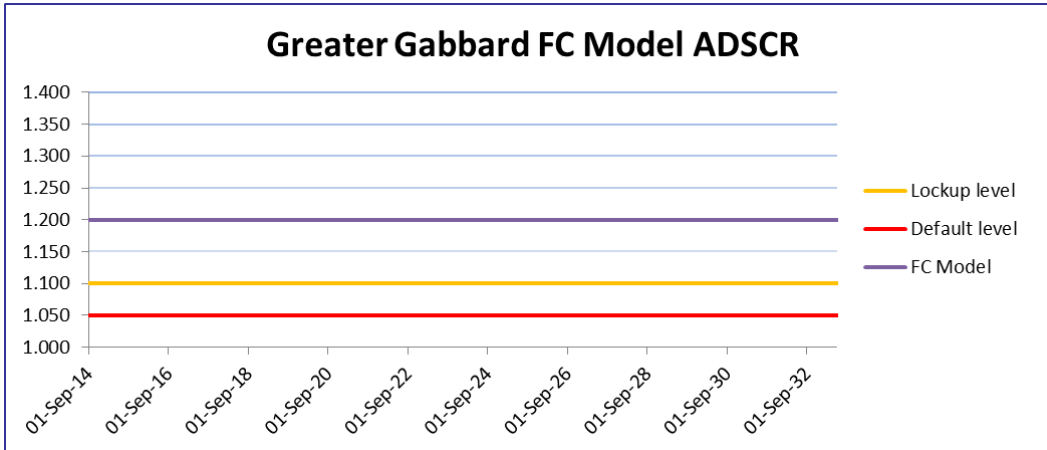
GREATER GABBARD OFTO

DEBT COVER RATIOS NOVEMBER 2018



1. GREATER GABBARD – Current Ratios

Chart 1 - FC Model



NB this does not include availability bonus.

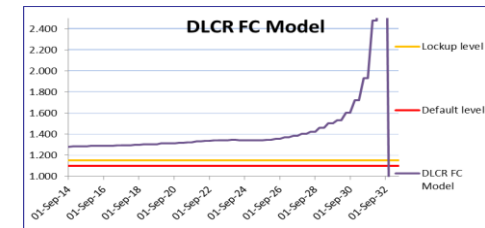
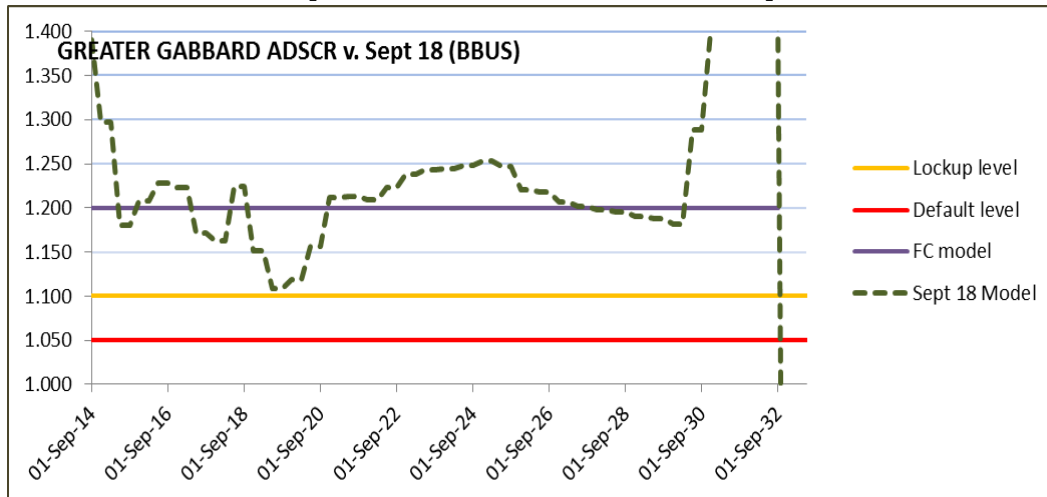
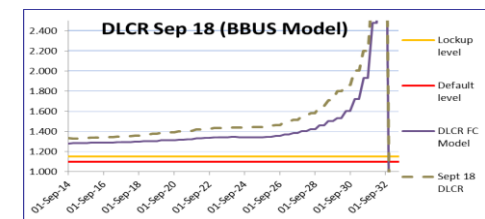


Chart 2 - September 18 Model Update



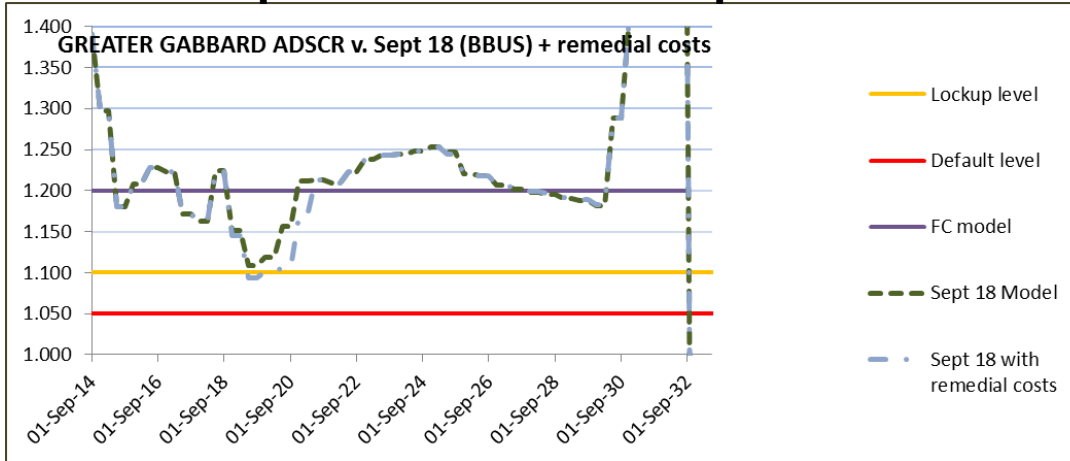
This chart compares the actual costs as previously reported in the September 18 model and compares to the FC model.

NB this does not include availability bonus beyond 2019



1. GREATER GABBARD – New Ratios

Chart 3 September 18 Model Update



This chart builds on chart 2 and also compares the dilapidation costs identified from the condition assessment and remedial costs to deal with known issues (e.g. cable reburial) that have previously been reported.

NB this does not include availability bonus.

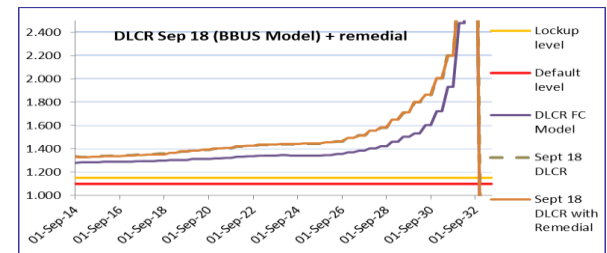
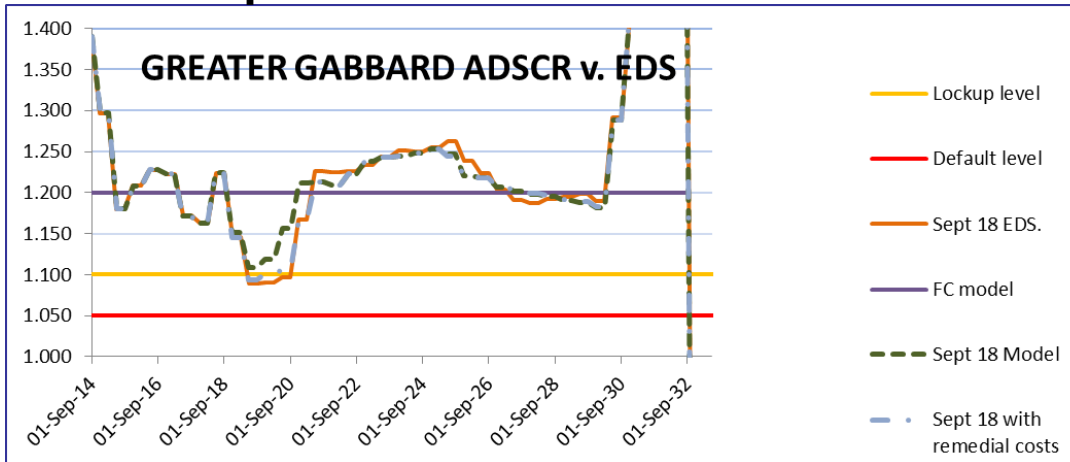


Chart 4 Replace BBUS with EDS



This chart builds on chart 3 and adds the comparison of the change to EDS (on a like for like basis). The comparison also includes extra legal costs incurred to manage the transfer.

NB this does not include availability bonus beyond 2019

