

What stage is this document in the process?

- 01 Initial Written Assessment
- 02 Definition Procedure
- 03 Assessment Procedure
- ▶ 04 Report Phase

## Stage 04: Draft Modification Report

# P294: 'Addition of Offshore Transmission System and OTSUA to the definition of the Total System'

Amend the BSC definition of Total System to include Offshore Transmission System User Assets (OTSUA).



The BSC Panel:

- Initially recommends **Approval** of P294



High Impact:

- Offshore generators



Medium Impact:

- ELEXON and the Transmission Company

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### Any questions?

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## About this document:

This is the P294 Draft Modification Report, which ELEXON will present to the Panel at its meeting on 14 November 2013. It includes the responses received to the Report Phase consultation on the Panel's initial recommendations. The Panel will consider all consultation responses and will agree a final recommendation to the Authority on whether the change should be made.

There are four parts to this document:

- This is the main document. It provides details of the solution, impacts, costs, benefits/drawbacks and proposed implementation approach. It also summarises the Workgroup's key views on the areas set by the Panel in its Terms of Reference, and contains details of the Workgroup's membership and full Terms of Reference.
- Attachment A contains the draft redlined changes to the BSC for the P294 Proposed solution.
- Attachment B contains the full responses to the Workgroup's Assessment Procedure consultation.
- Attachment C contains the full responses to the Panel's Report Phase Consultation

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## Why Change?

Currently when a new Offshore site is commissioned and constructed there is a requirement to install Code of Practice (CoP) compliant Settlement metering. This Settlement metering must be installed onshore at the Boundary Point between the Offshore infrastructure (known as Offshore Transmission System User Assets (OTSUA)) and the Transmission System.

After a short period of operation onshore Settlement metering becomes redundant as it is no longer required once the offshore development is completed and the OTSUA are transferred to the Offshore Transmission System Owner (OFTO). At this point the generator only needs to have Settlement metering Offshore at the Boundary Point where the generator connects to the Offshore Transmission System.

Installing this temporary onshore Settlement metering is costly (in the region of £158,000 to £338,000 per circuit).

In addition to stop ambiguity, BSC definitions require amendment to be clear around what is considered as part of the Offshore Transmission System.

## Solution

P294 would remove the requirement to install CoP1 compliant Settlement metering at the onshore Boundary Point.

P294 would also update the definitions in Section-X, Annex X-1 to add OTSUA as a new definition and reflect that OTSUA is part of; Total System; System; and Offshore Transmission System. The definition of System Connection Point would also be amended to capture where an OTSUA connects to the Transmission System.

## Impacts & Costs

P294 will impact Offshore generators, in particular those undertaking new developments under the 'Generator Build' phase, as it will remove the requirement to install Settlement metering at the onshore Boundary Point.

Under P294, Transmission losses along the OTSUA will be socialised. This is consistent with transmission losses along new Transmission System extension work carried out by the Transmission Company onshore or an OFTO Offshore.

## Implementation

P294 will be implemented 5 Working Days (WD) after an Authority decision.

### What are Offshore Transmission System User Assets (OTSUA)?

OTSUA are defined in the Grid Code as: '*Offshore Transmission System Development User Works (OTSDUW) Plant and Apparatus constructed and/or installed by a User under the OTSDUW Arrangements that once transferred to a Relevant Transmission Licensee under an Offshore Tender Process will form the Offshore Transmission System*'.

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## The Case for Change

The Panel unanimously agrees with the P294 Workgroup that:

- P294 would remove the cost burden of installing Settlement metering at the onshore Boundary Point (as that metering has a limited operational life until the OTSUA are transferred to an OFTO);
- socialising the transmission losses along the OTSUA would mean greater consistency, in that they would be treated in the same manner to when the Transmission Company extends to the Transmission System onshore or when an OFTO extends the Offshore Transmission System;
- the change would improve the clarity around the definitions in the BSC and Grid Code; and
- the changes would improve clarity around definitions in the BSC and DCUSA with respect to where OTSUA connects to a Distribution System<sup>1</sup>.

## Recommendations

The Panel unanimously agrees with the Workgroup's view that P294 would better facilitate Applicable BSC Objectives (c) and (d), and therefore initially recommends that P294 is approved.

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<sup>1</sup> This is called an Offshore Transmission Connection Point under the BSC and the Transmission Company is responsible for registering the associated Metering Systems for Settlement purposes.

### Background

The [Offshore Transmission](#) regime went live in 2009. It was developed and introduced by Ofgem and the Department of Energy and Climate Change (DECC) as a regulatory regime for the construction and operation of Offshore Transmission networks

Currently when a new Offshore site is commissioned by a generator under the 'Generator Build' provisions of the enduring Offshore Transmission regime, Balancing and Settlement Code (BSC) Section L 'Metering' requires the generator to install Code of Practice (CoP) compliant Settlement metering onshore. This onshore Settlement Metering must be installed at the Boundary Point between the Offshore cables (known as Offshore Transmission System Users Assets (OTSUA), as defined in the Grid Code) and the onshore Transmission System.

This onshore Settlement metering is required because the site is treated like a normal generator connecting to the Transmission System and any Import or Export from the new generator (which during the commissioning and building includes the OTSUA) needs to be measured at the point it leaves or enters the Transmission System.

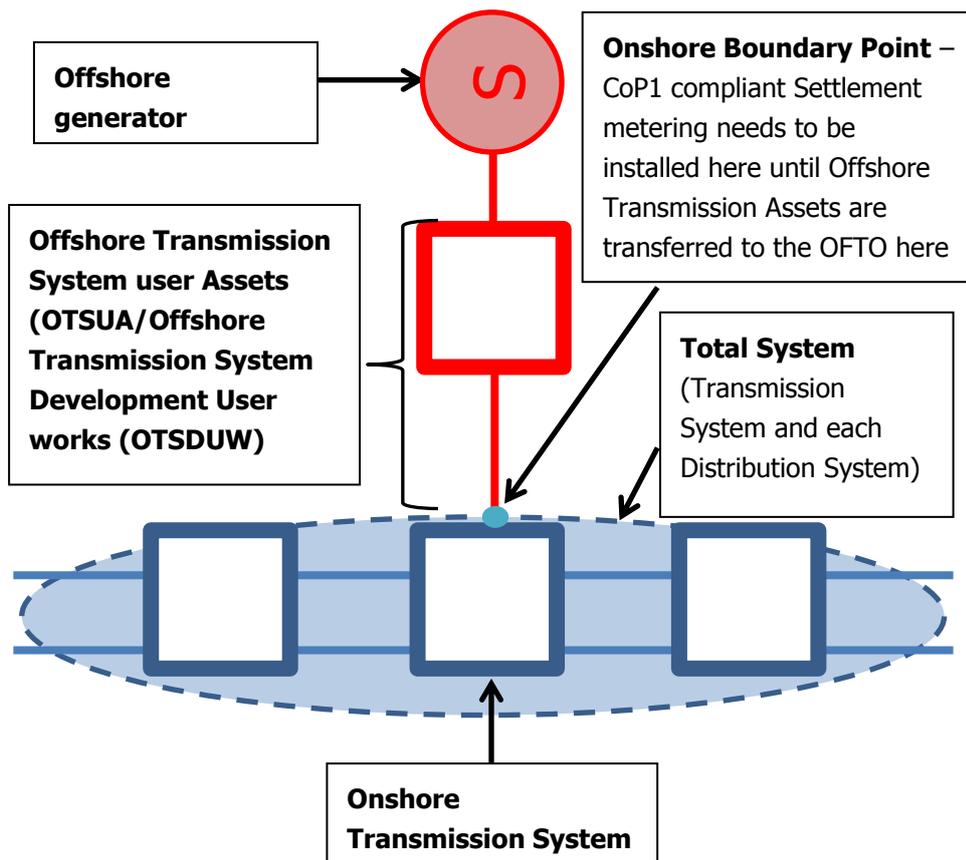


Diagram 1: The current situation where, prior to the transfer of the OTSUA to the OFTO, the generator is required to have CoP1 compliant Settlement metering at the onshore Boundary Point.



#### What is a Boundary Point?

A Boundary point is a point at which a Plant or Apparatus not forming part of the Total System is connected to the Total System.



#### What is the Transmission System?

Transmission System in the BSC has the meaning given to the term 'National Electricity Transmission System' in the Transmission Licence and comprises of the elements that make up the Transmission System onshore in Great Britain and Offshore within Great Britain's territorial waters and are operated by Transmission Licensees.



#### What is the Offshore Transmission System?

The Offshore Transmission System is defined in the Grid Code and describes what elements make up an Offshore Transmission System owned or operated by an Offshore Transmission Licensee.

Following the completion of the offshore development, the OTSUA connecting the Offshore generator to the Transmission System onshore are transferred to an Offshore Transmission Operator (OFTO). At this point the OTSUA becomes part of the Offshore Transmission System and the generator is only required to meter Imports and Exports offshore at the Boundary Point (between the Offshore generator and the Offshore Transmission System) on the Offshore platform.

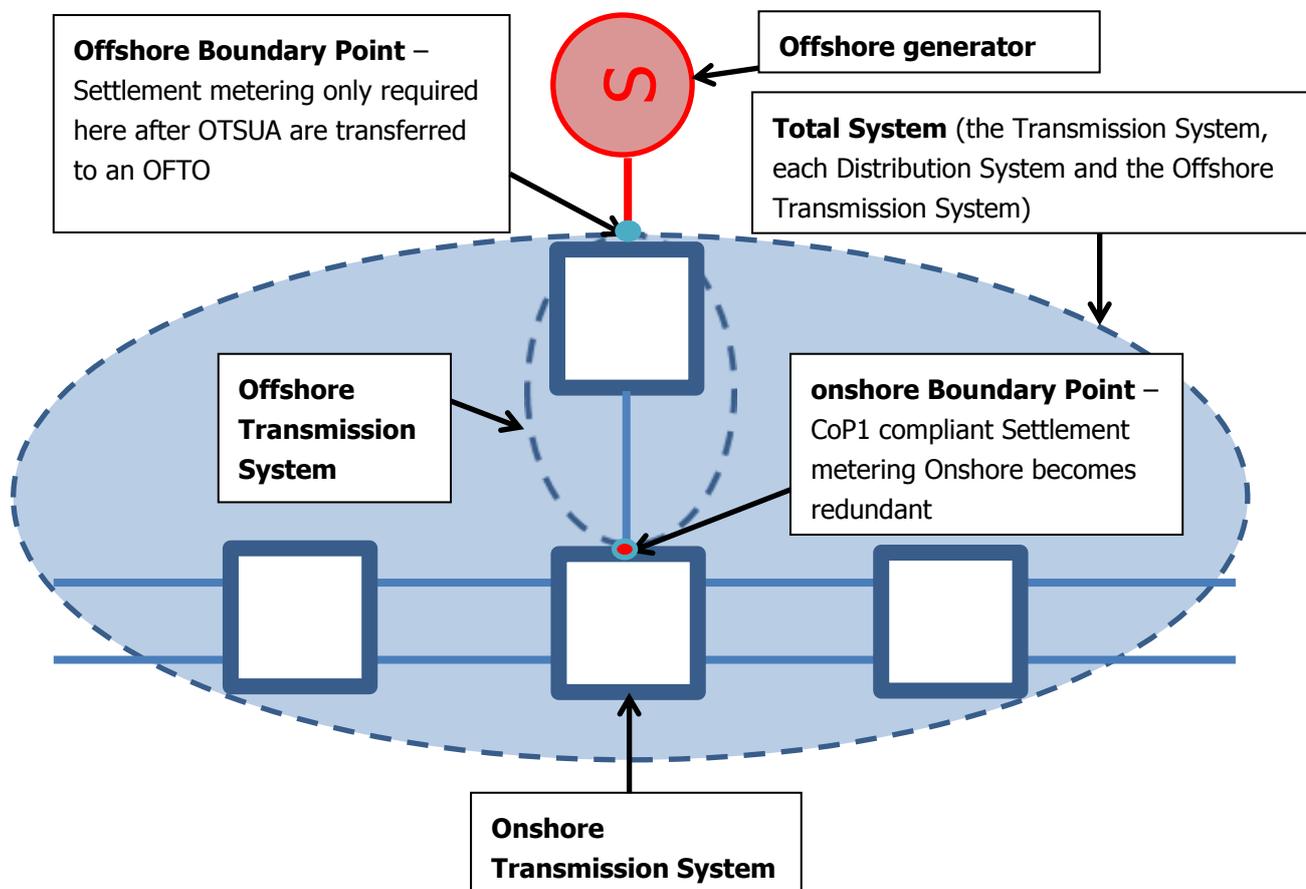


Diagram 2: The current situation, following the transfer of the OTSUA to an OFTO, is that the generator only needs to meter at the Offshore Boundary Point.

### BSC Definitions

The BSC refers to the Grid Code for its definition of Offshore Transmission System and to the Transmission Licence for the definition of Transmission System.

### What is the Issue?

There are two main issues:

1. After a short period of operation, during the development of the Offshore generator and the OTSUA connecting the generator onshore, the CoP1 compliant metering that is initially installed at the onshore Boundary Point becomes redundant.

The costs of installing such onshore metering can be very high, and in the region of £150,000 per circuit, as indicated by the P294 Proposer. Additional indicative cost analysis considered and agreed by the P294 workgroup is provided in Section 4.

The only existing option is to apply for a Metering Dispensation, as has been the case with some transitional projects. A Metering Dispensation could then allow, for

example the use of Settlement metering on the Offshore platform only. However such Metering Dispensations require the application of an accuracy adjustment to account for the Boundary Point being located onshore for the purpose of transmission losses.

The treatment of such transmission losses, through the application of a accuracy adjustment, is inconsistent with the intent of the enduring generator Build Offshore Transmission System arrangements. The Transmission System owner or OFTO extending the Transmission System does not need to apply a compensatory adjustment for the transmission losses and instead they are socialised. Therefore the transmission losses along the OTSUA that a generator builds should be treated in the same manner and socialised as well.

2. The BSC definition of Offshore Transmission System refers to the [Grid Code](#). In December 2010 the Grid Code definition of Offshore Transmission System was amended to include OTSUA.

This addition of OTSUA in the Grid Code definition of Offshore Transmission System may cause confusion as it could be interpreted that due to OTSUA being part of the Offshore Transmission System it is part of the Total System. This would mean that metering is only required at the Offshore Boundary Point where the Offshore generator connects to the OTSUA.

In order to address these areas of confusion, changes to the BSC are required.

### 3 Solution

P294 proposes to amend the BSC definitions of Total System and System to include Offshore Transmission System User Assets, amend the definition of System Connection Point to capture a connection between an Offshore Transmission System User Assets and the Transmission System, add OTSUA to the definition of Offshore Transmission System and add a new definition of OTSUA.

By amending the BSC in this way P294 would remove any confusion between the Grid Code definition of Offshore Transmission System, which includes OTSUA where the context permits, and the BSC provisions relating to what is covered by the definitions of 'Transmission System' and the 'Total System'.

The changes to the definitions would also remove the requirement for Offshore generators to temporarily install CoP compliant Settlement metering at the onshore Boundary Point, as the OTSUA would be part of the Offshore Transmission System and Total System. This means that the Offshore generator would only need to meter at the Offshore Boundary point where the Offshore generator connects to the Offshore Transmission System User Assets.

This solution only applies to Settlement metering requirements where OTSUA connects to the Transmission System. Where OTSUA connects to a Distribution System, Settlement metering would still be required.

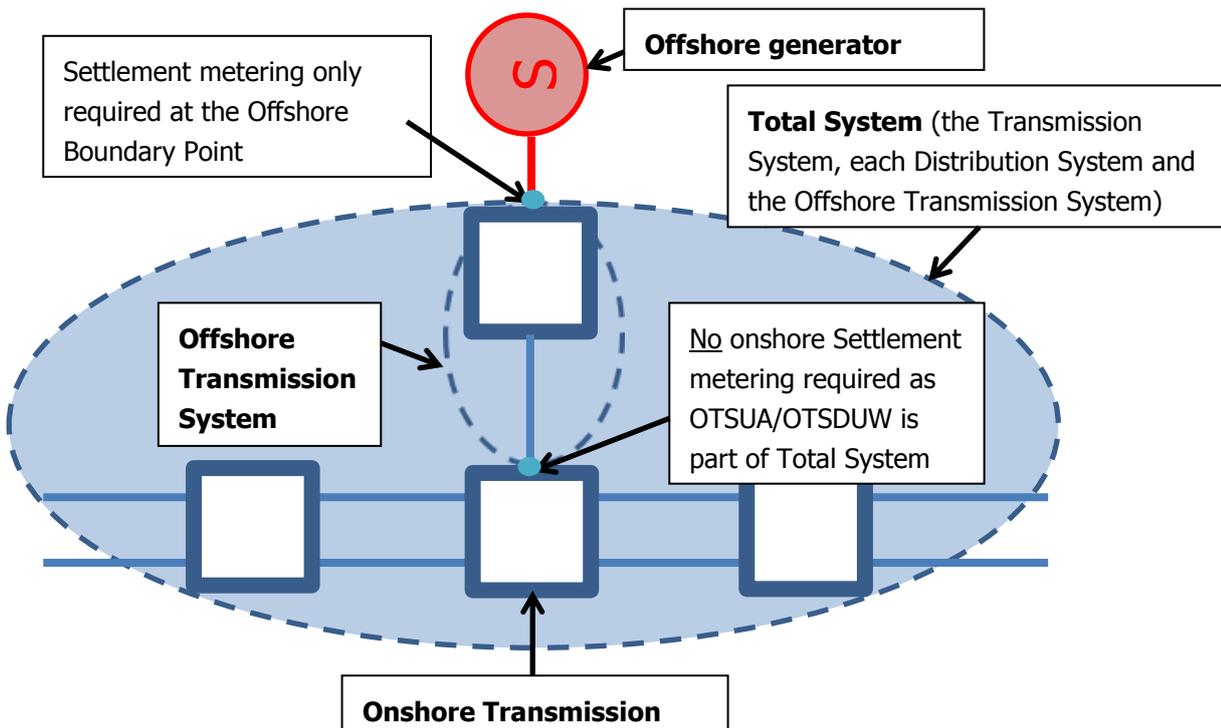


Diagram 3: The P294 solution would mean that the OTSUA are as part of the Total System, therefore the generator would only need to install Settlement metering at the Offshore Boundary Point prior to OFTO transfer.

## Treatment of Transmission Losses along the OTSUA

P294 also ensures that the transmission losses along the OTSUA are treated in the same consistent manner as any losses that occur during Transmission System extension work carried out by the Transmission Company onshore or an OFTO Offshore.

Further details on the Workgroup's discussion around transmission losses can be found in Section 7.

### Legal Text

To deliver the P294 solution the BSC will require the following amendments:

BSC Section X – Annex X1:

- Add the definition of Offshore Transmission System User Assets (OTSUA), by adding a cross reference to the definition included in the Grid Code;
- Amend the definition of Offshore Transmission System to include OTSUA;
- Amend the BSC definition of Total System to include each Offshore Transmission System User Asset;
- Amend the BSC definition of System to include Offshore Transmission System User Assets; and
- Amend the BSC definition of System Connection Point to capture a connection between the Offshore Transmission System User Assets and the Transmission System.

The proposed redlined changes to the BSC to deliver P294 can be found in Attachment A.

## 4 Cost and Benefit Analysis

### Metering cost benefit analysis

The following table provides an indicative overview comparing the current costs of installing Settlement metering at the onshore Boundary Point, using indicative metering costs provided by National Grid and the P294 Workgroup.

The first column describes each of the metering elements or associated metering cost. The second column shows the current indicative cost, of installing onshore Settlement metering. The remaining column shows the indicative costs involved under the P294 solution.

The first row and 'Total' rows have three costs in each column, to reflect the costs associated with onshore metering depending on the voltage at the onshore Boundary Point.

Metering item	Current Baseline	Under P294
Onshore Settlement metering instrument transformers (Current Transformers (CTs) and Voltage Transformers (VTs))	400kV = £250,000 275kV = £150,000 132kV = £60,000	400kV = £0 275kV = £0 132kV = £0
Onshore Settlement metering cubicle	£35,000	£0
Operational metering cubicle using Settlement metering instrument transformers (CTs and VTs)	£30,000	n/a
Operational metering cubicle fed from protection CTs and VTs	n/a	£30,000
Onshore Settlement metering registration cost	£2,000	£0
Annual onshore Settlement metering costs (MOA costs) Range of £25,000 - £50,000 (upper figure used in table)	£50,000	£0
Onshore Settlement metering maintenance cost (per circuit)	£1,000	£0
<b>Total cost of onshore metering</b>	400kV = £368,000 275kV = £268,000 132kV = £178,000	400kV = £30,000 275kV = £30,000 132kV = £30,000

The indicative figures provided in the table show that the P294 Proposed solution, depending on the Boundary Point voltage, could avoid costs to Offshore generators developing new Offshore sites of c. £158,000 to £338,000 pounds per circuit. This would

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be the result of not being required to install Settlement metering at the onshore Boundary Point.

The Workgroup agreed that this supports and expands on the potential £150,000 cost saving identified originally by the Proposer when P294 was initially raised.

## Other Benefits

### Consistent treatment of Transmission Losses

The Workgroup agreed that transmission losses along the OTSUA should be socialised in the same manner as other Transmission System extension work under taken by the Transmission Operator onshore or by and OFTO offshore. This would mean that transmission losses are treated consistently.

Further details on the Workgroup discussion around transmission losses is detailed in Section 7.

### Further alignment of the BSC with DCUSA

The P294 solution would ensure that the BSC and DCUSA requirements, for the metering located where OTSUA connects to an onshore Distribution System, are aligned. The changes will make the National Electricity System Operator (NETSO) responsible for the metering. The NETSO then ensures the generator installs the necessary metering.

This was supported by respondents to the Assessment Procedure Consultation, provided in Attachment B. Further details on the Workgroups discussion around OTSUA connecting to onshore Distribution Systems is detailed in Section 7.

## 5 Impacts & Costs

### Estimated central implementation costs of P294

As the P294 solution only involves documentation changes and no system related changes the implementation costs are limited to the effort to update the Code as set out below.

ELEXON Cost		Total Cost
Man days	Cost	
1	£240	<b>£240</b>

### P294 Impacts

#### Impact on BSC Systems and process

None

#### Impact on BSC Parties and Party Agents

The impact on BSC Parties should be minimal with the exception of any Parties that are undertaking or about to undertake Offshore generator development works.

#### Impact on Transmission Company

None

#### Impact on ELEXON

ELEXON effort

ELEXON would manage the implementation of the changes to the BSC.

#### Impact on Code

Code section

Potential impact

Section X – Annex X-1

Changes are required to amend the definitions of:

- 'Total System'
- 'System'
- System Connection Point
- Offshore Transmission System
- Add definition of Offshore Transmission System User Asset

#### Impact on Code Subsidiary Documents

None

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### Impact on Core Industry Documents and other documents

Document	Potential impact
Distribution Connection and Use of System Agreement	No direct impact from P294 on the DCUSA, however the P294 Proposed solution should bring the BSC and DCUSA further into alignment with regard to the responsibility for metering at the point where OTSUA connects to an onshore Distribution System.

### Impact on other Configurable Items

None

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### Recommended Implementation Date

The P294 solution only involves changes to BSC definitions therefore the Workgroup recommended an Implementation date of:

- 5 WDs following an Authority decision

The following section provides details on the P294 Workgroups discussions that led to the P294 solution. It also includes the potential Alternative solutions that were considered but not progressed. Any post Assessment Procedure consultation discussion is also captured under the relevant discussion areas.

### Potential Alternative Solutions

The P294 Workgroup considered two potential Alternative Solutions that may have addressed the defect identified by P294.

#### 1. Deemed Offshore Boundary Point

Instead of amending Section X, Annex X-1 definitions as per the P294 Solution, Section K would have been amended, to give the Offshore generator developing the new Offshore site the right to only need to install and use Offshore Settlement metering on the Offshore platform.

The effect of this potential Alternative solution would have been the creation of a deemed Boundary Point on the Offshore platform, requiring the relevant CoP compliant Settlement metering for the circuit(s) that need to be metered to only be needed Offshore and not onshore as well.

#### Transmission Losses along the OTSUA

The Group considered whether a compensatory calculation should be applied to account for the transmission losses along the OTSUA for the potential P294 alternative solution, if Settlement metering was only required Offshore at the deemed Boundary Point. Such compensatory calculation would be similar to what would be required currently as part of a Metering Dispensation where approval had been obtained to only have Settlement metering, for example, Offshore.

The group agreed that to apply such compensatory calculation as part of this potential P294 Alternative solution would mean that the Transmission Losses along the OTSUA would not be socialised in the same manner as onshore Transmission System extension work undertaken by the Transmission Company or any Offshore Transmission System extension work undertaken by an OFTO. Similarly this would cause the potential alternative solution to differ in its treatment of transmission losses along the OTSUA from what would occur under the P294 Proposed solution.

While the P294 Workgroup fully developed this potential P294 Alternative solution with supporting legal text, they were of the view prior to the Assessment Procedure Consultation that it was not better than the P294 Proposed solution which they believe to be the more straight forward and simpler solution.

#### Legal Text

Section K:

- Add new paragraph (1.1.5A) explaining that the Party (the Offshore generator undertaking the OTSDUW) responsible for Exports and Imports from the OTSUA

may locate the Settlement metering at the offshore platform, which will be deemed to be the relevant Boundary Point for the purposes of the BSC and will be the only Boundary Point at which the Settlement metering will be required.

- Amend paragraph 1.1.6 to reference the new paragraph 1.1.5A, to ensure that an accuracy calculation is applied between the location of the Offshore Settlement metering and the deemed Boundary Point between the generator and the OTSUA, in case the metering has been located in a different place on the Offshore platform from where the deemed Boundary Point is.

Section X – Annex X-1:

- Add the definition of Offshore Transmission System User Assets (OTSUA), through a cross reference to the definition included in the Grid Code.

### Assessment Consultation

The Workgroup consulted on this potential Alternative solution as part of the Assessment Procedure Consultation.

All respondents agreed with the Workgroup's approach around not applying a compensatory calculation for the losses to this potential P294 Alternative solution. Six of the respondents agreed that the losses should be socialised as per the P294 Proposed solution. One respondent agreed with the Workgroup's approach but more from the perspective that it would have made this Alternative solution even more complex than compared with the P294 Proposed solution.

All respondent's agreed that the change delivered the aim of the Modification but agreed with the initial view of the Workgroup that the P294 Proposed solution overall was the simpler and more straight forward solution to the defect identified by P294.

### Final Workgroup view on the potential Alternative solution

In light of the Assessment consultation responses, summarised above and provided in Attachment B, the Workgroup confirmed its initial view that the P294 Proposed solution was better than the potential Alternative solution. Therefore the potential Alternative solution was not progressed further.

## **2. Using onshore operational metering as a 'proxy' for the Settlement metering**

The P294 Workgroup considered an alternative that would have amended the BSC to enable the onshore operational metering required under the Grid Code to be used as a 'proxy' for the onshore Settlement metering. Actual Settlement metering would only then be required at the Offshore Boundary Point as per the P294 Proposed solution.

This would mean, in a similar way to P294 Proposed solution that CoP compliant Settlement metering would not need to be installed onshore at the Boundary point. Any data for use in Settlement would be obtained from the operational metering only for the onshore Boundary Point.

The Workgroup agreed that this solution should not be taken forward due to operational metering not being as accurate as Settlement metering. Also there would be no direct links for the data from the operational metering to be passed into Settlement, without substantial additional changes to the BSC and other Codes, making this solution considerably more complex than the P294 Proposed solution.

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## Other Alternative solutions

No other Alternative solutions were considered by the Workgroup. Respondents to the Assessment Procedure consultation did not identify any other alternative solutions for consideration by the Workgroup.

## Other options available outside of the Modification Process

The P294 Workgroup noted the other options that either currently exist within the current BSC provisions or would require a Change Proposal to progress to achieve a similar outcome to what P294 is seeking to do.

### The existing Metering Dispensation Process

As covered above, the existing Metering Dispensation process (as detailed in [BSCP32](#) 'Metering Dispensations') provides a mechanism for obtaining permission to locate metering at a different location from the required location as set out in the BSC and associated CSDs (i.e. CoPs). However such Metering Dispensations are subject to review and approval processes. This means that time and effort may be invested in going through the Metering Dispensation process only to be declined, meaning that the generator would still need to still install Settlement metering at the onshore Boundary Point.

### Changes not requiring a BSC Modification Proposal

Outside of a BSC Modification, another approach that could resolve the issue that P294 is trying to address, would be to amend the relevant CoPs (including CoP1). The CoPs could be amended to refer to OTSUA and remove the need for CoP1 compliant metering to be installed at the onshore Boundary Point.

## Reactive Power

When the Workgroup first discussed P294, the workgroup considered whether P294 and its aim to remove the need for onshore Settlement metering would have an impact on the measurement of Reactive Power and how it is charged for. Currently, prior to the transfer of the OTSUA to the OFTO, the Settlement metering installed onshore can be used to calculate volumes associated with Reactive Power and this information used for calculating any associated payments.

A Workgroup member suggested that the CoP1 compliant Settlement metering onshore would normally be used for calculation of Reactive Power charges or payments, however National Grid could calculate Reactive Power using different arrangements, including operational metering or other equipment. The workgroup discussed whether this would work but some members felt that it would be dependent on the technology installed at the onshore Boundary Point.

This led to the Workgroup to question what the current arrangements are for determining Reactive Power at an onshore Boundary Point and whether it depends upon data from the onshore Settlement metering (which is required under the current provisions, unless there's a Metering Dispensation). Or can it use data from other sources e.g. operational metering?



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### What is Reactive Power?

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Reactive Power is the product of voltage and current and the sine of the phase angle between them, measured in units of voltamperes reactive and standard multiples thereof.

Active power is the power that actually does work, for example powering your home. Reactive power is the power required to magnetise equipment (e.g. a motor). Reactive power is critical for enabling the transmission and utilisation of Active power.

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The National Grid representative responded that Reactive Power at the Interface Point (onshore Boundary Point) can be adequately monitored by operational metering installed by the generator pre-transfer, which the OFTO takes responsibility for post OFTO transfer. Generators are monitored via the more accurate Settlement metering at the Offshore Grid Entry Point (the Boundary Point where the generator connects to the Offshore Transmission System) and are paid for providing a certain capacity of Reactive Power via their Mandatory Services Agreement (MSA).

The Workgroup discussed the response and noted that the information provided relates to what occurs post- OFTO transfer. Prompting the question whether operational metering can be used for the purpose of determining Reactive Power at the onshore Boundary Point pre-OFTO transfer?

The National Grid representative responded by explaining that Reactive Power can be determined from a control room point of view from the operational metering at the onshore Boundary Point between the OTSUA and onshore Transmission System. The operational metering provides second-by-second data and the Settlement metering provides half hourly data that is compatible with the Transmission Company's settlement systems. Reactive power can therefore be determined for operational purposes but not for Settlement purposes.

With this in mind the Workgroup initially concluded that the P294 Proposed and potential Alternative solutions developed would not have an impact on Reactive Power prior to the transfer of the OTSUA to the OFTO, as any Reactive Power can be determined through the use of the operational metering at the onshore Boundary Point. This conclusion was subject to further information from National Grid that will be discussed at the next P294 Workgroup meeting following the Assessment Phase consultation.

### **Further discussion on Reactive Power – post Assessment Procedure consultation**

Following the initial conclusions of the Workgroup on Reactive Power and how payments or charges would be settled under the P294 solution, further discussions occurred post consultation on this subject.

The Workgroup noted that, for Offshore Transmission, Reactive Power settlement metering is only required for any reactive power capability delivered by the generator (as opposed to that delivery by the OFTO) to be Offshore. Therefore the P294 Proposed solution will not impact this.

The reason for this is that for Offshore Transmission Systems the main responsibility to deliver the Reactive Power lies with the OFTO, not the generator, and that the required point of delivery is onshore not Offshore. However there is no requirement to 'settle' this Reactive Power, as the OFTO does not receive payments for the delivery. Instead they are compensated for providing the capability as part of their regular income stream (the level of which is set by the OFTO tender process).

This means there is no requirement for the OFTO to have Reactive Power Settlement metering onshore.

It is possible for the parties concerned with an Offshore development (NETSO, OFTO and generator) to agree that some or all the Reactive Power capability is delivered by the

generator rather than the OFTO. In this case Reactive Power Settlement metering will be required for the portion of the overall capability delivered by the generator, which would be Offshore, and therefore consistent with the P294 Proposed solution.

All Workgroup members agreed with this overview, however it did prompt a reiteration of the question from a Workgroup member around what should happen with the settling of Reactive Power pre-OFTO.

The Workgroup considered:

- Whether the concern was valid; and
- Whether it should or could be resolved by P294.

A Workgroup member agreed that the concern was valid as a generator pre-OFTO should be informed whether they will be paid for Reactive Power onshore if no Settlement metering is in place, under the P294 Proposed solution.

The Workgroup member went on to explain that existing guidance is focused on where the Reactive Power is fully allocated to the generator or fully allocated to the OFTO and picked up at the interface point onshore, however there are no specific examples where the Reactive Power allocation is split between the Generator and the OFTO or what happens pre-OFTO where the generator is running the Offshore Transmission cables as OTSUA.

However the question on how the settling of Reactive Power is dealt with pre-OFTO, does not need to be addressed by Modification P294 and the associated Proposed solution. Instead it is a matter for the Transmission Company and Offshore generator to resolve and address through discussions during any development work.

Additionally there is nothing under the P294 Proposed solution that would prevent the Transmission Company from putting in place the necessary Reactive Power commercial agreements for the associated settlement of Reactive Power with an Offshore generator pre-OFTO transfer.

The Workgroup agreed that P294 does not need to address the question around Reactive Power payments and charges, but is something that would benefit from some clarification from the Transmission Company going forwards for each specific build and design.

### **Reactive Power and OTSUA connecting the an onshore Distribution System**

An Assessment Consultation respondent and Workgroup member noted the need for Settlement metering capable of measuring Active and Reactive Energy to be present where OTSUA connects to a Distribution System. The Workgroup agreed that P294 is not changing the metering requirements in this situation,

They were seeking clarity that this requirement was not being change by the P294 Proposed solution.

The Workgroup agreed the P294 was not removing or changing the metering requirements between OTSUA connecting to an onshore Distribution. In addition they reiterated their conclusion set out in further detail below that P294 would further align the BSC with the DCUSA, particularly in relation to the responsibility for ensuring the Settlement Metering between an OTSUA and a Distribution System would sit with the NETSO as the 'User'.

## The time that Onshore Settlement metering would be in use for

P294 has highlighted that the installed onshore Settlement metering may become redundant after a short period of operation prior to the transfer of the OTSUA to the OFTO.

A Workgroup member highlighted that in some situations, such as the Galloper Wind farm, it can take three years to commission the site in which time the Settlement metering was needed onshore. The Proposer highlighted that under the current provisions that is true, but a Party can request a Metering Dispensation as was the case with the London Array wind farm, to have the Settlement metering Offshore only with an appropriate compensatory adjustment calculation applied to account for the losses along the Offshore transmission network with the absence of the onshore metering. This metering therefore stays in place for as long as necessary.

It was noted though that while a Party can request a Metering Dispensation there is no guarantee that it will be approved. P294 would remove that uncertainty around needing to install metering at the onshore Boundary Point, as CoP compliant Settlement metering would only be required at the Offshore Boundary Point.

## Operational and Settlement metering

The P294 Workgroup noted that the requirement for operational metering at the onshore Boundary Point (needed by the Transmission Company and required under the Grid Code) is not changing under the changes that P294 is proposing. P294 is focused purely on removing the requirement for Settlement metering at the onshore Boundary Point.

## Alternating Current and Direct Current

A P294 Workgroup member queried whether P294 would give rise to issues with Alternating and Direct Current as there are different technologies associated with each of them. Highlighting that Direct Current may only require one cable, while Alternating current may require more cables, that may then need to be added to as an offshore site becomes bigger as more generators are added.

The Workgroup noted this point but concluded that this issue does not directly relate to the BSC provisions or to the issue P294 is proposing to address.

## Connection to Onshore Distribution System

The Workgroup considered where P294 would have an impact on where an OTSDUW connects to an onshore Distribution System. As required under the DCUSA, the NETSO would have connection agreements with the Licensed Distribution System Operator (LDSO)). Then under contractual arrangement the offshore developer (the Offshore Generator undertaking the OTSDUW) would put in place the necessary metering between the OTSUA and the Distribution System.

Workgroup members commented that while during the transitional OFTO regime a number of offshore developments had occurred where the cable connected onshore to a Distribution System, future Offshore Development was likely to be only connected onshore to the Transmission System. The Group agreed though that the Offshore generator could still request to connect onshore to a Distribution System.

The P294 Workgroup agreed that the P294 Proposed solution would result in greater alignment between the BSC and the DCUSA, with respect to the DCUSA obligation, for the

LDSO to have the necessary agreements in place with the NETSO for the necessary metering at the onshore Boundary Point between the Distribution System and the OTSUA. The NETSO would then make sure the generator (developing the new offshore site) installs the necessary metering.

To confirm this view the Workgroup requested clarity on the responsibility for metering at the connection between the OTSUA and Distribution Systems (pre-OFTO transfer), and whether the responsibility lies with the LDSO or the Party undertaking the development works?

The National Grid representative clarified that, pre OFTO transfer, at the site of connection of the generator to the LDSO (known post transfer is the 'interface site'), that metering is generator Settlement metering and it is the generators obligation to install and maintain.

In practice it is usual for the host LDSO to include the CT/VT in its circuits - and take ownership of them with the generator only responsible for providing the Settlement metering on the end of the cable.

The information provided by National Grid confirmed the Workgroup view that the P294 Proposed solution would further align the BSC with the DCUSA.

The group noted that the potential P294 Alternative solution (deemed Boundary Point) may have cause the BSC and DCUSA to become less consistent if it had been taken forward.

### **What about Charges in this situation?**

The discussion around connecting to onshore Distribution raised questions around how charges in this situation are calculated. The Group considered if a new OTSUA connected to an onshore Distribution System (under the enduring generator Build regime), what network charges would be levied (and on whom)? In particular, what (demand or generation) Distribution Use of System (DUoS) charges would the LDSO levy (on the GBSO or the generator)? And what (demand or generation) Transmission Network Use of System (TNUoS) charges would be levied by the Transmission Company (National Grid)?

The National Grid Representative responded by explaining in terms of the charges levied by the LDSO, the Offshore generator will be responsible for Generation Distribution Use of System (DUoS) charges, calculated by the LDSO, invoiced to National Grid, and passed through to the Offshore generator.

Offshore generators have to pay Generation DUoS charges for the use of the Distribution System. The LDSO will invoice National Grid the generator DUoS charge amount, National Grid will pay the LDSO and then collect this revenue from the Offshore generator via an Embedded Transmission Use of System (ETUoS) charge.

In terms of the TNUoS charges, the National Grid representative also referred to the document: Guidance Notes for generator Offshore Local TNUoS Charges Radial Connections v1.1, which is summarised as follows:

*Generator >100MW connecting into the LDSO network pays:*

- *Wider TNUoS Tariff (generation zone they connect into x TEC) from the date stated in their Bilateral Connection Agreement (BCA) or Bilateral Embedded Generation Agreement (BEGA).*

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*Generator <100MW (small generator) connecting into the LDSO network pays:*

- *No TNUoS charges (actually gets paid demand charges for the demand zone they connect into if they generate at Triad).*

*At Asset Transfer*

*Generator >100MW connecting into the LDSO network pays:*

- *Wider TNUoS tariff (generation zone they connect into x TEC)*
- *Onshore Local Circuit tariff (if connected to a non-MITS substation)*
- *Offshore Local Circuit tariff*
- *Offshore Local Substation tariff*
- *ETUoS tariff (this charge covers DNO capital expenditure included in the purchase of OFTO assets)*
- *Embedded TUoS charge (this covers DUoS on-going charges for use of the DNO system)*

*Generator <100MW connecting into the DNO network pays:*

- *Offshore Local Circuit tariff*
- *Offshore Local Substation tariff*
- *Offshore Embedded TUoS tariff*
- *Embedded TUoS charge*

*Effectively National Grid collects all the required revenue from the generator and pays these allowed revenues to the OFTO and LDSO.*

The information provided by National Grid prompted clarification to be requested on whether Embedded TUoS charges are levied on the generator Pre-OFTO transfer. The response provided by the National Grid representative clarified that in terms of the charges levied by the DNO, the Generator will be responsible for Generation DUoS charges, calculated by the DNO pre OFTO, with the LDSO calculating the generator DUoS charge and invoicing the generator directly.

The generator would not have Embedded TUoS levied on them pre OFTO transfer. However Post Asset Transfer: the DNO will calculate the Generator DUoS charge applicable to the Generator and will invoice National Grid. National Grid will pay the DNO directly for this charge and then collect this revenue from the Generator as an ETUoS charge.

It was noted that the questions around the charging do not have a direct impact on P294 and associated solutions.

**Further discussion on P294 and connection to onshore Distribution Systems – post Assessment Consultation**

All respondents agreed that P294 Proposed solution would ensure greater alignment between the BSC and DCUSA, in support of the Workgroup's initial views, around the NETSO being the responsible party who needs to ensure the necessary metering is installed where OTSUA connects to an onshore Distribution System.

One respondent expressed a view that extra clarity or guidance should be provided around the Settlement metering requirements if a new development were to come along in the future where an OTUSA were to connect to an onshore Distribution System. The Workgroup agreed that while beneficial it is something that should be addressed outside of the P294 solution due to the solution not impacting OTSUA to onshore Distribution System connections.

The Ofgem representative clarified that the NETSO as the contracted party would put in place the necessary contractual requirement with the LDSO, generator and OFTO (or generator pre-OFTO) to ensure the necessary metering is in place.

### **To what extent does an OTSUA actually form part of the Offshore Transmission System for the purposes of the BSC and the Grid Code?**

The Workgroup considered under the Grid Code to what extent OTSUA formed part of the Offshore Transmission System. As outlined in Section 2, the BSC refers to the Grid Code for its definition of Offshore Transmission System. In November 2010, the definition was amended to include:

*"...and, where the context permits, reference to the Offshore Transmission System **includes OTSUA.**"*

The Group discussed what this addition meant, with the Workgroup agreeing that the purpose of the addition was to ensure that OTSUA complied with the Grid Code provisions and the requirements that need to be met in order for the OTSUA to become part of the Offshore Transmission System and to be used as Offshore Transmission.

The discussion did prompt the question of whether the Grid Code definition should be considered and taken forward outside of P294 via a Grid Code Modification to clarify the definition and to remove any potential ambiguity.

The National Grid representative explained that the Grid Code definition of Offshore Transmission System with respect to the use of '...where the context permit..' in relation to OTSUA allows an element of flexibility within the Grid Code when the context might make non-specific reference to OTSUA (pre-OFTO transfer) or Offshore Transmission System (post-OFTO transfer). This can be illustrated with reference to the definition in the Grid Code for onshore Transmission System which states:

*"The system consisting (wholly or mainly) of high voltage electric lines owned or operated by **Onshore Transmission Licensees** and used for the transmission of electricity from one **Power Station** to a substation or to another **Power Station** or between substations or to or from **Offshore Transmission Systems.**"*

In this example, the term Offshore Transmission Systems is interchangeable with OTSUA.

The National Grid representative explained that on reviewing the current Grid Code definition of Offshore Transmission System, no changes are currently required.

The P294 Workgroup noted this explanation and confirmed that it does not have an impact on the P294 solutions.

### **What would the impact be of adding OTSUA in the BSC Definition of Total System?**

Would it have implications for how the Offshore Transmission System should be operated?

The Group considered this question from the Terms of Reference and following on from earlier discussion noted that adding OTSUA to the definition of Total System would not

change how the Offshore Transmission System is operated as the OFTO would continue to only be responsible for the OTSUA post transfer, once it has become part of the Offshore Transmission System. The change proposed by P294 would only remove the need for Offshore Settlement metering and result in the losses along the OTSUA being socialised, as explained in further detail below.

### Would it be consistent with the current prohibition on export prior to the transfer of the OTSUA to the OFTO?

Under the current arrangements Offshore cables rating at 132 kilovolts (kV) and above are considered to be transmission assets, and therefore the owner/operator would require a Transmission Licence before an Offshore generator pre OFTO could export. Cables rated lower than 132 kV are considered to be distribution assets and therefore do not require a Transmission Licence and could export prior to OFTO transfer.

The Workgroup considered this question and noted that P294 should not have an impact on this area, and it is an area covered by the Transmission Licence. P294 is focused on the location of the Settlement metering, however they did note the work on the draft Energy Bill with regard to Offshore Transmission may introduce an exception allowing offshore developments to export without needing a licence prior to OFTO transfer.

## **Discussion of Ofgem questions on P294**

The Ofgem representative asked the P294 workgroup to consider P294 with respect the following questions/areas:

### **Would changing the definitions in the Code cause a conflict with the Transmission Licence?**

During the discussion of the P294 Proposed Solution the Ofgem representative queried whether changes to the BSC definitions of Total System, Onshore Transmission System or Transmission System would create a conflict with the wording of the Transmission Licence?

The concern was raised as the Transmission Licence refers to the National Electricity Transmission System (NETS)<sup>2</sup> rather than the Transmission System, and any changes to the BSC definition may put additional responsibilities on the Transmission Company (the Licensee)

Analysis of the Transmission Licence wording and the proposed P294 changes to the definitions in the BSC was carried out by National Grid and ELEXON, which was then discussed by the P294 Workgroup. The Workgroup agreed based on the National Grid and ELEXON analysis that changing the definitions in the BSC may create a perception of inconsistency between the licence wording, particularly in relation to OTSUA as these are not owned or operated by the transmission licensees. However in reality this would not cause a conflict between the Transmission Licence and the BSC, as any changes to the

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<sup>2</sup> Definition of in National Electricity Transmission System in the Transmission Licence:  
National Electricity Transmission System - means the system consisting (wholly or mainly) of high voltage electric lines owned or operated by transmission licensees within Great Britain, in the territorial sea adjacent to Great Britain and in any Renewable Energy Zone and used for the transmission of electricity from one generating station to a substation or to another generating station or between sub-stations or to or from any interconnector and includes any electrical plant or meters owned or operated by any transmission licensee within Great Britain, in the territorial sea adjacent to Great Britain and in any Renewable Energy Zone in connection with the transmission of electricity but shall not include any remote transmission assets.

definition to Total System in the BSC would only extend the definitions for the purposes of the BSC. So the proposed P294 changes to the BSC definitions would not put extra responsibilities on the licensees beyond what is currently covered by the Transmission Licence.

The P294 Workgroup agreed with these conclusions.

### **P294 and the impact on Transmission Losses**

The Ofgem representative wanted the Group to consider the impact of P294 on transmission losses. Currently losses along OTSUA, pre transfer to the OFTO, are not socialised in the same manner as onshore transmission losses. Offshore transmission losses post OFTO transfer (or during any extension work carried out by the Transmission System owner onshore or by an OFTO offshore) are socialised.

If, via an approved Metering Dispensation, metering has only been installed offshore, as part of the Metering Dispensation a compensatory accuracy adjustment is produced to account for the losses from the actual location of the metering back to the onshore Boundary Point. By removing the requirement to have onshore Settlement metering, and just having Offshore metering at the future Boundary Point between the Offshore generator and the OTSUA, the transmission losses along the OTSUA would be socialised.

The Ofgem representative queried if it was appropriate to treat losses along the OTSUA the same as other transmission losses. The Workgroup agreed that it was appropriate due to it being more consistent with how losses are treated where an OFTO builds new Offshore transmission assets or where the Transmission System owners build new onshore transmission assets to connect a new onshore generator to the Transmission System.

The Workgroup considered what the scale of the transmission losses might be for OTSUA, noting that the losses could vary between sites due to them being dependent on:

- the system loading
- the location of the Offshore platforms;
- the distance of the Offshore platform from the onshore substations;
- the length of Offshore transmission assets required to connect the offshore generator to the onshore Transmission System;
- the size and design of the Offshore development (e.g. Operating Voltage and Reactive Power compensation arrangements); and
- the transmission technology (e.g. Alternating Current (AC) or High Voltage Direct Current (HVDC))

Generally though the high voltage Alternating Current (AC) transmission Active Power loss factor is small between 2-3%, but varies on the project basis, for the reasons noted above.

A Workgroup member provided one example, where a wind farm operating at a 33kV export system (connecting to an LDSO) has a maximum active power loss factor approximately 2.5%.

The Workgroup noted one further example in the form of the London Array wind farm.

## London Array wind farm example

The London Array wind farm is an Offshore development where a Metering Dispensation was approved to allow metering to be installed at the future (post OFTO) Offshore Boundary Point and compensated back to the onshore Boundary Points. It has a current capacity of 175 turbines at 3.6 Mega Watts (MW) which equates to 630MW.

The potential transmission losses calculated as part of the accuracy adjustment produced as part of the approved Metering Dispensation was calculated to be 0.8668 Megawatt hours per hour (MWh/h) per Power Park Module (a BM Unit under the BSC). There are two Power Park Modules connected to each of the two Offshore platforms with Offshore transmission cables with a length of 50kms connecting them to the onshore substation.

In the context of P294, the transmission losses along an OTSUA would only occur during the period from the site initially becoming active until the OTSUA is transferred to the OFTO, which is likely to be 12 or 18 months. During such period, the system loading is very low due to the availability of the generators (i.e. wind turbines) during the commissioning phase. The total Active Energy loss from the OTSUA tends to be much less than fully operational wind farms.

Based on the above understanding, the transmission losses through an OTSUA pre-OFTO should not have a material impact on the consumer in comparison to the principle and benefit of treating transmission losses along OTUSA consistently with other transmission system extension work, carried out by the Transmission Company or an OFTO.

Therefore the P294 Workgroup's conclusion was that the transmission losses along OTSUA should be socialised and this is reflected in the P294 proposed solution.

### **P294 and other impacts on Settlement or ancillary services**

The Group considered whether P294 would have any other impacts on Settlement. The only area that the Workgroup agreed may be impacted by P294 is the matter of Reactive Power already detailed above.

### **P294 impact on consumers**

The Ofgem representative questioned what would the impact be on consumers of P294 removing the need to have onshore Settlement metering. The Group consider that the current requirement to have onshore Settlement metering as well as the Offshore Settlement metering would ultimately mean that the cost of installing and registering that metering would be passed to the Consumer.

By removing the requirement for the onshore Settlement metering that cost would not ultimately be passed onto the customer, but would be replaced by the cost of the transmission losses along the OTSUA. However the Group agreed that the losses along the OTSUA would be treated in the same manner as losses on the Transmission System and Offshore Transmission System, which are already ultimately passed onto the Consumer.

Current baseline onshore metering costs compared with the costs under the P294 solution is provided in Section 4.

## P294 and the interactions with the draft Energy Bill

The Ofgem representative at the P294 Workgroup meetings provided an overview of the current work underway on the draft Energy Bill and associated policy work. As noted above as part of the draft Energy Bill with respect to the Offshore Transmission System, consideration is being given to allow offshore developments to be able to export pre OFTO transfer without the need for a Transmission Licence, providing the OFTO transfer occurs in a set amount of time. This timescale is yet to be finally agreed.

A Workgroup member noted that, depending on the site, OFTO transfer may take longer than the timescale that is finally settled on, however this would be factored in on any final decision around the window. The Ofgem representative noted that a consultation would be issued in the future on this area (August 2013) with the outcomes being published towards the end of the year.

The Workgroup considered the draft Energy Bill work prior to the Assessment Procedure consultation and agreed that P294 does not impact the current prohibition around export prior to OFTO transfer and therefore what the draft Energy Bill is looking to introduce.

### Further considerations following the Assessment Procedure consultation

Following the Assessment Procedure consultation further details on the draft Energy Bill and associated policies were shared with the Workgroup.

Ofgem issued a consultation on '[The implementation of the Generator Commissioning Clause](#)' on 30 August 2013, (for which responses are invited by 25 October 2013). It includes the details and associated licence changes to introduce the completion notice and the 18 month notice period that applies following a completion notice during which a generator can transmit without a Transmission Licence. The Ofgem representative highlighted that any changes that would impact the BSC have been removed from the consultation, pending the outcome of P294, so as not unduly affect the decision made by the Authority on P294 once the Final Modification Report is issued.

## P294 Solution Impacts

The Workgroup noted that respondents to the Assessment Procedure Consultation raised different views on the Impacts of the P294 solution. Those respondents commented that P294 would either provide savings during future developments or highlighted savings that would have been made if P294 was already in place in advance of existing developments starting.

None of the responses required further discussion by the Workgroup.

## 8 Workgroup's Final views



The Workgroup unanimously agree the P294 solution be better than the current baseline; and agreed that the P294 Proposed solution would better facilitate:

- Applicable BSC Objective (c) as it would promote competition by removing an prohibitive cost burden of having to install the onshore Settlement Metering, and would ensure that losses are treated consistently by having them socialised as per losses along any onshore or Offshore transmission network extension work carried out by the Transmission Company or OFTO respectively ; and
- Applicable BSC Objective (d) as it would and clarity around definitions in the BSC and further align the BSC with the DCUSA.

On this basis the Workgroup unanimously recommend that the P294 solution should be approved.

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### What are the Applicable BSC Objectives?

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(a) The efficient discharge by the Transmission Company of the obligations imposed by the Transmission Licence

(b) The efficient economic and co-ordinated operation of the National Electricity Transmission System

(c) Promoting effective competition in the generation and supply of electricity and (so far as consistent therewith) promoting such competition in the sale and purchase of electricity

(d) Promoting efficiency in the implementation of the balancing and settlement arrangements

(e) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency [for the Co-operation of Energy Regulators]

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## 9 Panel Initial Views



### Recommendation

The Panel initially unanimously recommended that P294 should be approved

The Panel noted the P294 Assessment Report and had no further comments.

The Panel unanimously believes that P294 does better facilitate Applicable BSC Objectives (c) and (d), and therefore initially recommends that P294 is approved.

The views of the Panel are in line with the final views of the Workgroup, as set out in Section 8.

The Panel unanimously agrees with the draft legal text and the Implementation Date proposed by the Workgroup of 5 WDs following an Authority decision, as detailed in Section 6.

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## 10 Report Phase Consultation Responses

This section summarises the responses to the Panel's Report Phase consultation on its initial recommendations. You can find the full responses in Attachment C.

Of the six parties that responded to the Report Phase consultation, five responded to the Assessment Procedure consultation and their views remain in line with their previous response. We received one new response.

Summary of P291 Report Phase Consultation Responses				
Question	Yes	No	Neutral/ No Comment	Other
Do you agree with the Panel's initial unanimous view that the P294 should be approved?	6	0	0	0
Do you agree with the Panel that the redlined changes to the BSC deliver the intention of P294?	6	0	0	0
Do you agree with the Panel's recommended Implementation Date?	6	0	0	0
Do you have any further comments on P294?	1	5	0	0

### Respondents' views

All respondents agreed with the legal text, implementation approach and the Panel's initial view that P294 would better facilitate Applicable BSC Objectives (c) and (d) and should be approved.

### Respondents' other comments on P294

One respondent raised a concern around the existing requirement to have the Balancing Mechanism (BM) Units and Settlement metering system registered before being able to energise any Offshore assets.

The respondent expressed the view that this is not always the case and some Offshore generators may prefer to start energising the onshore part of the OTSUA before the rest of the system (export cable) for the offshore generator is completely installed and registered.

We can confirm under the current baseline, energisation of any assets (that are not considered part of the Transmission System) is not allowed until BM Units and Settlement metering is registered.

Under P294 the OTSUA up to the Offshore Boundary Point, where the generator would connect to it, can be energised as no Settlement metering will need to be installed onshore. Offshore BM Units and Offshore Settlement metering would still need to be registered prior to energising any generator assets that connect to the OTSUA.

The respondent's comments are focused on the current baseline, rather than the P294 solution. It also sits outside of the scope of P294 which is focused on removing the requirement for Settlement metering at the onshore Boundary Point and that any transmission losses along the OTSUA are socialised.

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To change any requirements around the registration of BM Units and Settlement metering prior to energisation of any assets would need to be progressed via a separate Modification to the BSC.

## 11 Recommendations

ELEXON invites the Panel to:

- **NOTE** the P294 Draft modification Report and Report Phase Consultation responses;
- **CONFIRM** the recommendation to the Authority contained in the P294 draft Modification Report that P294 **should** be made;
- **CONFIRM** that P294 would better facilitate Applicable BSC Objectives (c) and (d);
- **APPROVE** an Implementation Date for P294 (if approved) of:
  - 5 Working Days following an Authority decision;
- **APPROVE** the BSC legal text for P294; and
- **APPROVE** the P294 Modification Report:  
or;
- **INSTRUCT** the Modification Secretary to make such changes to the report as the Panel may specify.

## 12 Further Information

More information is available in:

Attachment **A**: Draft Legal Text

Attachment **B**: Assessment Consultation Responses

Attachment **C**: Report Phase Consultation Responses

For further information, please see the [P294](#) page of the ELEXON website.

### Workgroup's Terms of Reference

P294 Terms of Reference	Reference
To what extent does an OTSUA actually form part of the Offshore Transmission System for the purposes of the BSC and the Grid Code?	See Section 7
What would the impact be of adding OTSUA in the BSC Definition of Total System: <ul style="list-style-type: none"> <li>• Would it have implications for how the Offshore Transmission System should be operated? and</li> <li>• Would it be consistent with the current prohibition on export prior to the transfer of the OTSUA to the OFTO?</li> </ul>	See section 7
What changes are needed to the BSC to support P294?	See Sections 3 and Attachment A
Are changes needed to any Code Subsidiary Documents?	See Section 5
What are the benefits of P294?	See Section 4
Does P294 better facilitate the Applicable BSC Objectives than the current baseline?	See Section 8 and 9
Are there any Alternatives that should be considered?	See section 7

### Assessment Procedure timetable

Please note the timetable differs from the one included in the P294 Initial Written Assessment (IWA) as presented to the Panel on 13 June 2013. The reason for this was that the first P294 Workgroup meeting was rescheduled from the 24 June 2013 to 5 July 2013, with the subsequent dates requiring adjustment.

Proposed Progression Timetable for P294	
Event	Date
Present Initial Written Assessment to Panel	13 June 13
Workgroup meeting 1	5 July 13
Workgroup meeting 2	15 July 13
Assessment Procedure Consultation	2 August 2013 – 23 August 13
Workgroup meeting 3	2 September 2013
Present Assessment Report to Panel	12 September 2013
Report Phase Consultation	13 September 2013 – 4 October 2013
Present Draft Modification report to the Panel	14 November 2013
Issue Final Modification Report to Ofgem	15 November 2013

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## Workgroup membership and attendance

Name	Organisation	05/07/13	15/07/13	02/09/13
<b>Members</b>				
David Jones	ELEXON (Chair)	✓	✓	✓
David Barber	ELEXON (Lead Analyst)	✓	✓	✓
Guy Phillips	E.ON UK (Proposer)	✓	✓	✓
Esther Sutton	E.ON UK (Proposer alternative)	x	x	x
Gary Henderson	IBM (Scottish Power)	✓	✓	✓
Shijun Yi	Centrica	✓	✓	✓
Matthew Hays-Stimson	UK Power Networks	x	x	☎
Garth Graham	SSE	x	x	x
Fiona Irwin	SSE Renewables	✓	☎	✓
Diana Chklar	RWE npower	☎	x	✓
Nick Sargent	National Grid	✓	✓	✓
<b>Attendees</b>				
Nicholas Brown	ELEXON (Legal)	✓	✓	✓
John Lucas	ELEXON (Market Design & Analysis)	✓	✓	✓
Mike Smith	ELEXON (Metering expert)	✓	✓	✓
Yvonne Naughton	Ofgem	✓	x	☎
Gordon Hutchinson	Ofgem	x	x	☎

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