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CMP242: Charging arrangements for interlinked offshore transmission solutions connecting to a single onshore substation



CMP242 Workgroup Meeting – 19th June 2015

These slides represent material presented to the workgroup and not necessarily the views of the workgroup.
The views and conclusions of the workgroup are captured in the workgroup consultation report.

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Safety Moment

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Agenda

Item	Detail	Lead
1	Introduction and meeting Objectives	Patrick Hynes
2	Review of action from previous meeting	Paul Wakeley
3	Matters Arising from Actions	Paul Wakeley
4	Initial view of Workgroup Consultation report	Richard Loukes
5	Discussion around Options, including proposer's preferred solution and exploration of potential alternatives	Paul Wakeley
6	Next Steps	Richard Loukes

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1. Introduction and Meeting Objectives



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2. Review of Previous Actions



Patrick Hynes

CMP242: Charging arrangements for interlinked offshore transmission solutions connecting to a single onshore substation – Action Log

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No	Action Description	Owner	Date Raised	Deadline	Status	Latest Update
9	Provide a table outlining the Pros and Cons of the options available to a developer of opting in or out of an interlink agreement	Garth Graham (SSE)	22/05	12/06	Propose Closed	Circulated (in pack)
10	Provide a summary of the high-level principles of the GB Offshore Charging Regime.	Paul Wakeley (National Grid)	22/05	12/06	Propose Closed	Draft circulated for comment
11	Verify with NG System Design the likely offshore substation design which would be required to facilitate an interlink, and explore whether additional equipment is needed to allow exports.	Paul Wakeley (National Grid)	22/05	12/06	Propose Closed	Included in pack
12	Consider whether including the Load Factor of the Wind farm as part of the calculation of tariff is appropriate, and if necessary include in the model an approach for non-firm access.	Paul Wakeley (National Grid)	22/05	12/06	Propose Closed	Included in pack for discussion at Workgroup 3
13	Provide details of the current compensation arrangements between the OFTO and all other parties (likely to covered as part of 10)	Paul Wakeley (National Grid)	22/05	12/06	Propose Closed	Included in paper for number 3
14	In order that Ofgem can provide a view on the points raised regarding post development cost and asset transfer, Garth Graham is to provide specific examples to Edda Dirks	Garth Graham (SSE)	22/05	26/05	Propose Closed	Examples provided to Edda 22nd May

Closed Actions have been shaded grey

3. Matters arising from the Actions

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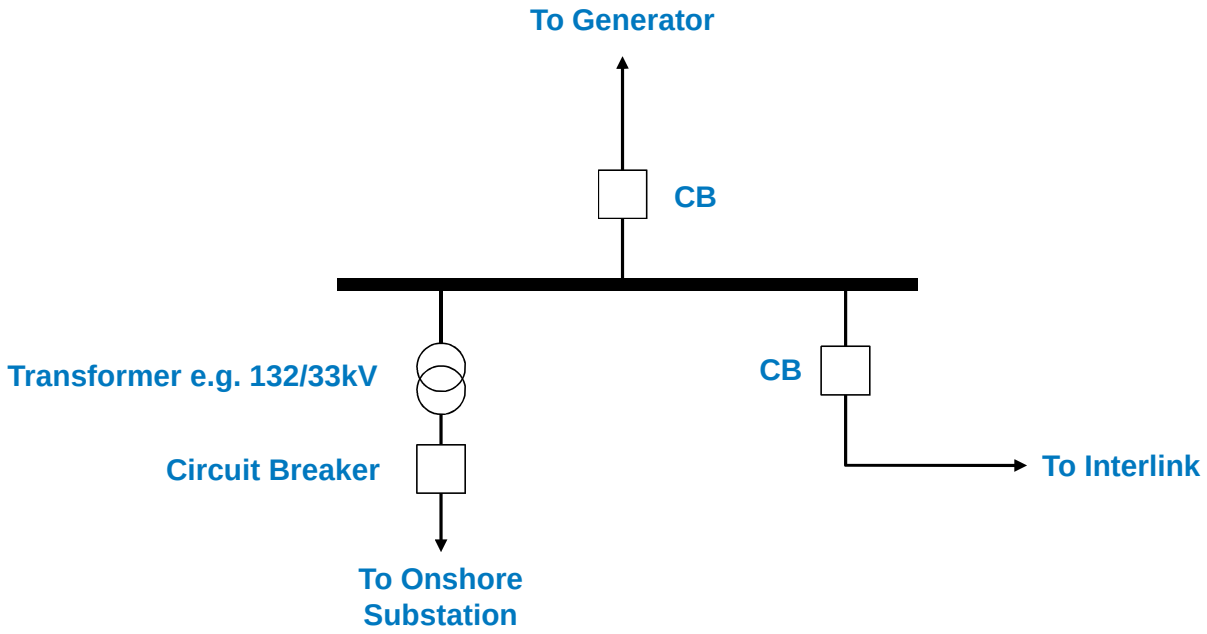
9. Provide a table outlining the Pros and Cons of the options available to a developer of opting in or out of an interlink agreement

Option	Pros	Cons
A	Aligns onshore and offshore regimes	The size / value of offshore generators, and the costs for T, are substantially different to onshore. Risk that G1 rendered unviable with the extra cost of interlink – leads to higher regulatory risk, leading to higher cost for consumers.
B	Removes risk that G1 is rendered unviable by the action of another party (G2) or OFTO(s) and SO.	Different regime offshore to onshore. G1 could, by not paying for the interlink (or receiving the benefit(s)), be limiting an overall efficient build.

Option A:
The OFTO(s) and SO determine that it is efficient to build the interlink. No choice for Generator 1 – they (and Generator 2) incur their share of the increased cost of the interlink (and receive the resulting benefit(s)).
Option B:
The OFTO(s) and SO determine that is efficient to build the interlink. Generator 1 is given a choice to incur their share of the increased cost of this (and receive the resulting benefit(s)). If Generator 1 chooses not to pay the cost then it does not receive any of the benefit(s) of the interlink (including any use of the Generator 2 circuit/cable).
Generator 2 does not have a choice about incurring the cost (of the interlink) per se - but they will know the cost/benefit of the interlink prior to their financial close / commitment. Generator 2 will have access to the benefit(s) of the interlink (including any use of the Generator 1 circuit/cable).
[Note: Its assumed, for the purposes of this note, that Generator 1 is in situ; i.e. its after their project financial close/commitment, and maybe after the plant is commissioned.]

11. Indicative System Design for an offshore substation with interlink

- Standard Offshore Design Single Busbar
- For an interlink, need to add another bay



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Actions 10 and 13

- 10. Provide a summary of the high-level principles of the GB Offshore Charging Regime.
- 13. Provide details of the current compensation arrangements between the OFTO and all other parties

- Please refer to additional document.
  Comments welcomed.

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4. Initial View of Draft Workgroup Consultation Report



Facilitator: Richard Loukes

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5. Discussion on Options leading to Proposer's preferred solution and Exploration of potential alternatives



Facilitator: Paul Wakeley

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Discussion on Options

- With a view to moving toward preparing the workgroup consultation report:
  - To discuss the Proposer's preferred solution
  - To explore any potential alternative proposals
  - To note any areas that might require further discussion and / or consultation

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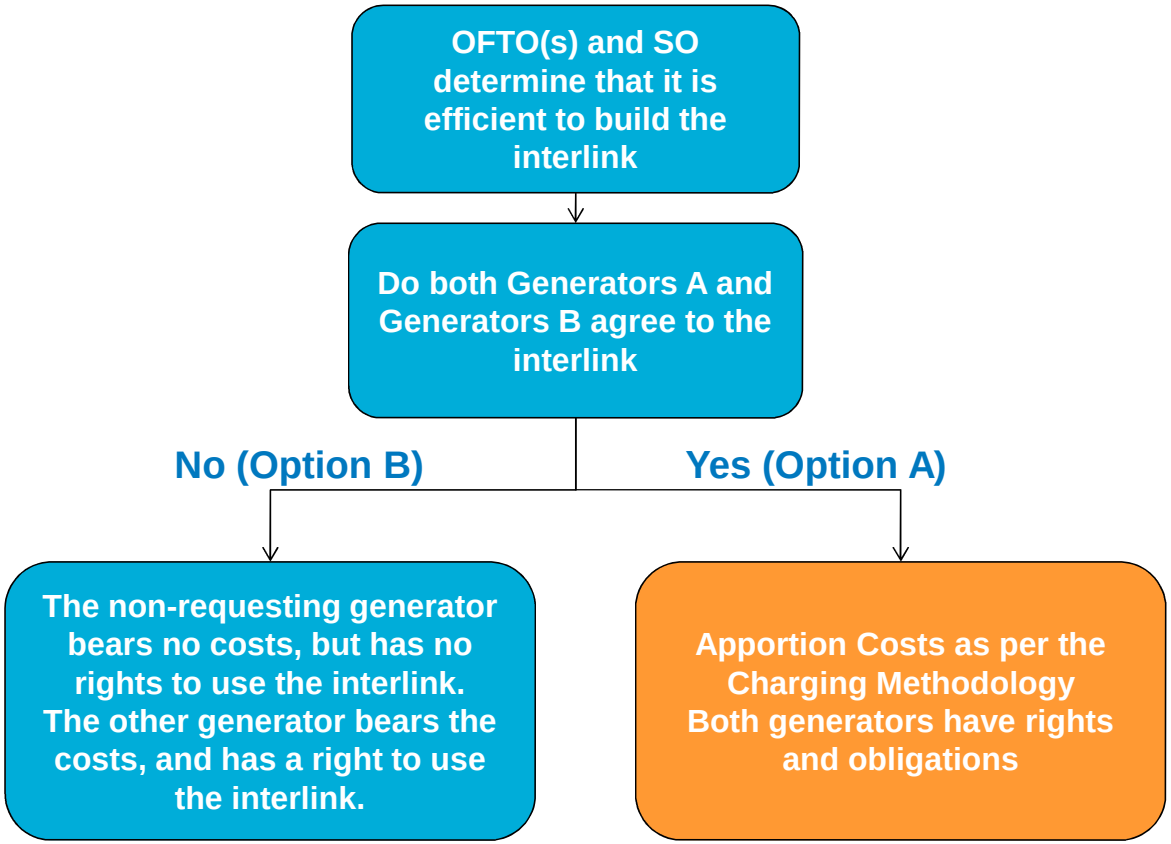
Original Proposal

- It is proposed that the TNUoS charging methodology within Section 14 of the CUSC is modified to ensure that both interlinking circuits and additional capacity that can be utilised on the export cables to shore are appropriately charged, such that:
  - The **charge for capacity on an interlinking circuit** that can be utilised by **generation on either end** of the link is set such that each party pays an amount representing an equal proportion of the associated OFTO revenue;
  - The **charge for any capacity on an interlinking circuit** that can only be **utilised by generation on one end of the link** is set such that the relating generation pays a charge equivalent to the associated OFTO revenue; and
  - The **Local circuit charge** for an offshore generator will **reflect any additional capacity** on export cables to shore that is made available through use of an interlinking circuit.

Sequencing – after Garth's Table



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Assumptions

- **Applies to both developer build and OFTO build scenarios**
- **Technology and Operation**
  - An interlink sits in open standby, only switched in if there is a fault on one radial circuit.
  - An Interlink will be AC (due to the short distance)
  - If both parties agree, Interlinks will operate bi-directionally. Would be possible to switch so it would not benefit one party if they do not contribute.

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Charging Methodology

Offshore Generator Tariff =

Offshore Substation Tariff + **Offshore Circuit Tariff** + **Wider Tariff**

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Offshore Substation Tariff

- Charge based on equipment at first substation you connect to. Methodology means your charge reflects your usage of the installed assets.
- **Questions?**
  - What about the assets installed at your local substation to facilitate the interlink, but if you will not use any of the interlink?

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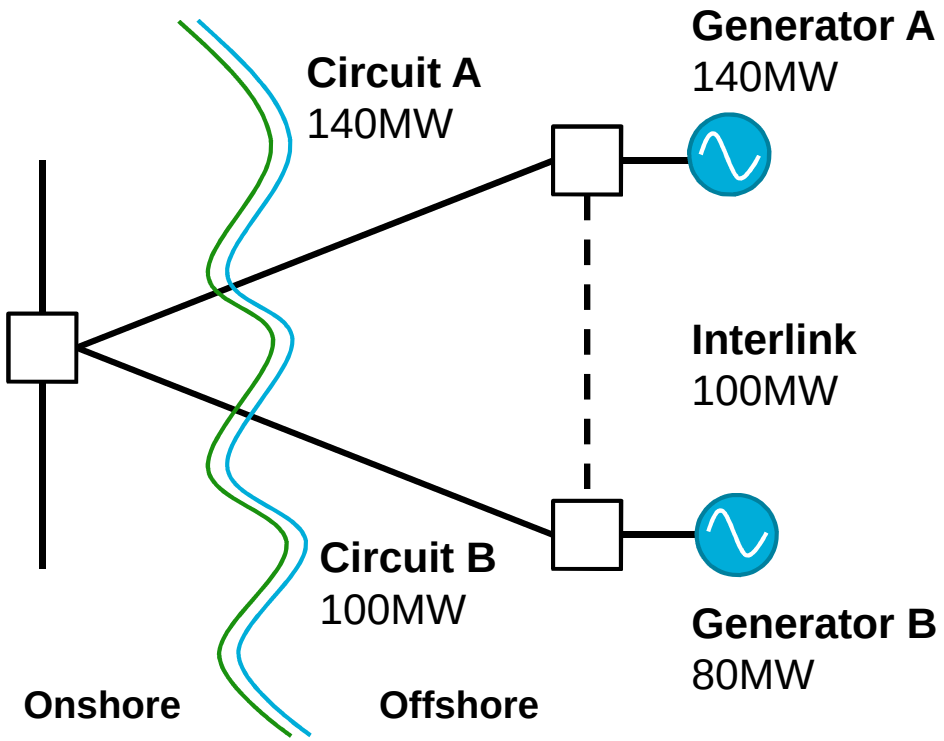
Offshore Circuit Tariff

- Current Methodology reflects radial circuits, so need to update to reflect interlink and opportunity
- **Questions?**
  - How should revenue associated with **Interlink Circuit** be considered?
  - How should **TEC changes** be dealt with?
  - Should your tariff reflect opportunity of access (firm or non-firm) on the **other circuit**, via the interlink?

Offshore Circuit Tariff: Our Example Case



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Offshore Circuit Tariff: 1. Cost of Interlink

i. Equal Split

- A and B pay 50% each.

ii. Proportion of TEC

- A pays 140/(140+80) = 63.6%
- B pays 80/(140+80) = 36.3%

Offshore Circuit Tariff: 1. Cost of Interlink

iii. Proportions of shared and unshared capacity

- Of the 100MW Interlink capacity
  - 80 MW is available to A & B - Shared Cost
  - 20 MW only to A
- A: (0.5 x 80 + 20) / 100 = 60%
- B: (0.5 x 80) / 100 = 40%

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Offshore Circuit Tariff: 1. Cost of Interlink

iv. Proportion based on additional firm access

- A gains 20MW of firm access via Circuit B
- B gains 0MW of firm access via Circuit A
  - A pays 100%
  - B pays 0%

- **Question:** *Generator B has an opportunity, so this doesn't seem right*

Offshore Circuit Tariff: 1. Cost of Interlink

v. Apportionment by non-firm access based on ALF

- Assume an Offshore generic ALF c.50% so:
- Gen A gains 40MW of non-firm access
- Gen B gains 70MW of non-firm access
- A: 40/(40+70)= 36.4%
- B: 70/(40+70)= 63.6%

Offshore Circuit Tariff: 1. Cost of Interlink

vi. A combination of Firm and non-firm access?

- Gen A has 20MW firm + 40MW non-firm
- Gen B has 0MW firm + 70 MW non-firm
- e.g. Firm Weighted 1, Non-firm 0.5
- A: (20 + 0.5 × 40) / (20 + 0.5 × (40+70)) = 53.3%
- B: (0 + 0.5 × 70)/(20 + 0.5 × (40+70)) = 46.6%

- ***Question:*** *How to weight firm vs non-firm?*

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Offshore Circuit Tariff: 2. How to deal with TEC Changes

- All of the options ii to vi are affected by TEC changes
- If Generator A reduces their TEC; Generator B's charge will increase
- **Question:** *What is the best approach here?*
  - Put a cap on charge if other generator decreases TEC
  - Leave generators susceptible to TEC change
  - Another?

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Offshore Circuit Tariff: 1. Cost of Interlink

- Which of these **options should be pursued?**
  - i. Equal Split
  - ii. Proportion of TEC
  - iii. Shared and Unshared
  - iv. Additional Firm Access
  - v. Non-Firm Access using ALF
  - vi. Combination of Firm and Non-Firm
  - another?
- The spreadsheet model allows us to run test cases.

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Offshore Circuit Tariff: 1. Cost of Other Circuit

- Should your tariff reflect opportunity of access (firm or non-firm) on the other circuit, via the interlink?
- How should it be reflected in the local tariff?
  - Based on TEC, Firm Access, Non-Firm Access or some combination?

5. Next Steps



Richard Loukes