CMP392

27 June 2023

Online Meeting via Teams


WELCOME

Objectives and Timeline

Teri Puddefoot – National Grid ESO Code Administrator

Objectives –

- **Alternatives**
- **Review worked example**
- **Review Legal Text**
- **Finalise solution**

Timeline for CMP392 as at 17 May 2023

Milestone	Date	Milestone	Date
Modification presented to Panel	30 May 2022	Panel sign off that Workgroup Report has met its Terms of Reference	28 July 2023
Workgroup Nominations (15 working days)	31 May 2022 to 23 June 2022 (5pm)	Code Administrator Consultation	4 August 2023 – 25 August
Workgroup 1 - education, review terms of reference and agree scope,	9 August 2022	Draft Final Modification Report (DFMR) issued to Panel	21 September
Workgroups 2 and 3 – review ESO's guidance (commonalities), agree what is a pre-existing asset and what isn't, agree what the interconnected test is, agree what will be published?. Discuss any possible alternatives, implementation approach, draft legal text / business rules (WG3)	23 November 2022 and 17 February 2023	Panel undertake DFMR recommendation vote	29 September
Draft Workgroup Consultation including questions issued to Workgroup Members	3 March 2023 to 5th April for comments	Final Modification Report issued to Panel to check votes recorded correctly	6 October
Workgroup Consultation	12 April 2023 to 5 May 2023	Final Modification Report issued to Ofgem	13 October
Workgroups 4 , 5 , showstopper and 6 - Assess Workgroup Consultation Responses, finalise solutions (including legal text) and Workgroup Vote	17 May 2023 and 27 June 2023 (WG5) 30 June (showstopper) 4 July (WG6)	Ofgem decision	TBC
Workgroup report issued to Panel	20 July 2023	Implementation Date	TBC

Actions

Action number	Workgroup Raised	Owner	Action	Comment	Due by	Status
1	WG4	ESO Rep	Meet with revenue team to provide the WG with more detail around resource requirements	NA	WG5	Open
2	WG4	Proposer/ESO Rep	Collaborate to support in formalising the solution	NA	WG5	Open
3	WG4	Proposer/ESO Rep/Legal	Draft legal text	NA	WG5	Open

Review Alternative

Joe Henry

Break

TNUoS local charges associated with pre-existing assets – a worked example

Joe Henry

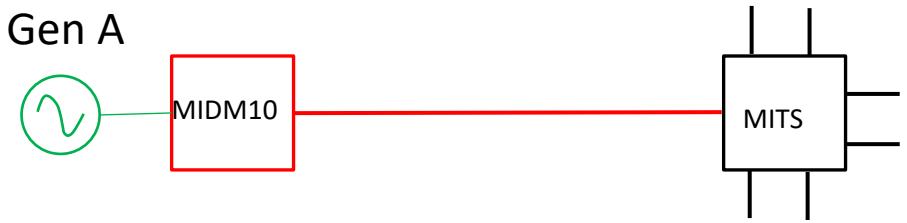
TNUoS local charges associated with pre-existing assets – a worked example

Overview

- To illustrate, at a high level, how the local assets are divided into two categories: pre-existing (PEA), and Physical assets required for connection (PARC)
  - Local charges associated with PEA and PARC are mutually exclusive, and are two parts in TNUoS local charges
  - A transmission circuit can be built for the connection of a particular user, and in later years become a “wider” circuit. When it ceases to attract local charges, it is not PEA or PARC
- To draw attention to a few details around implementation of CMP392
  - Generation charging base (in MW)
  - Data format

TNUoS charges associated with pre-existing assets – a worked example

Step 1 – identify the local network for a given non-MITS node (that has generators expected to connect, for the specific charging year)



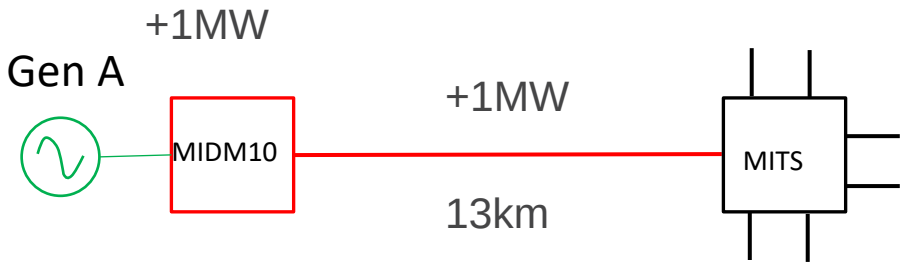
Nodal Input				
Bus Name	Local Substation Name	Local Asset Grouping	Local Security Factor	Tariff Model TEC
MIDM10	Middle Muir	Middle Muir	1	0.051

Confidential "best view"

Network Input Data					
TO Region	Bus 1	Bus 2	Code	Local Asset Grouping	132kV OHL Circuit construction Type
SP	COAL10	MIDM10	TMP2017031	Middle Muir	Single

TNUoS charges associated with pre-existing assets – a worked example

Step 2 – run the DCLF-ICRP model, to calculate the local circuit tariff for the non-MITS node in question (MIDM10 in this example)



All generators connected at MIDM10 have the same local circuit tariff (in £/kW), indicating the incremental impact on the local network assets by adding 1MW of capacity at MIDM10

The local cct tariff for MIDM10 (non-MITS substation) is

Incremental MWkm X local security factor X “unit cost” /1000

where

Incremental MWkm = (1MW X 13km) = 13MWkm

Local SF = 1.76

Unit cost EC XEF = £160/MWkm

Thus MIDM10 local cct tariff is 13*1.76*160/1000 =£3.66/kW

TNUoS charges associated with pre-existing assets – a worked example

Step 3 – Identify generators connecting to the non-MITS node, and identify local assets that are built for them to connect (PARC assets)

The Transmission Reinforcement Works comprise the following:

Part 1 – Enabling Works

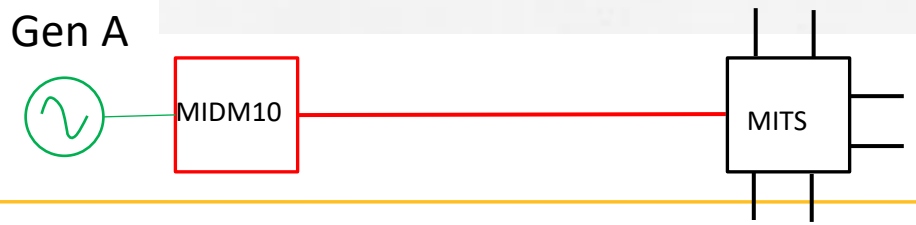
1. Installation of a new bay including one 132kV circuit breaker and all associated equipment apparatus at Coalburn 132kV substation for the connection of Middlemuir wind farm circuit.
2. Installation of approximately 11km of 132kv single circuit wooden pole overhead line with 200mm^2 conductor from Coalburn 132kV substation to Middlemuir wind farm connection substation.
3. Installation of one 132kV line isolator at Middlemuir wind farm connection substation.
4. At Coalburn 400/132kV substation an additional 240MVA 400/132kV transformer (SGT3) will be installed. This will increase the firm transformer capacity between the Coalburn 400kV and 132kV busbars to 480MVA, to provide sufficient thermal capacity for the level of renewable generation contracted to connect to the Coalburn 132kV network. In addition a 132kV bus section circuit breaker will be installed on the Coalburn 132kV reserve busbar **(SPT-RI-144)**.

Assets beyond MITS nodes wider (neither PARC, nor PEA)

PARC

PARC

wider



TNUoS charges associated with pre-existing assets – a worked example

Step 4 – match the PARC assets (as in the generator's Construction Agreement) with the asset ID in our DCLF-ICRP model

For a given non-MITS node, all generators connecting at this node need to go through this "matching" process

Project Name	PARC
BHLARAIDH WIND FARM	BHLA10#GLEN1Q#CI40
Middle Muir	COAL10#MIDM10#TMP2017031
A-CHRUACH WINDFARM	ACHR1R#INVE10#CI42$ACHR1R#PORA1R#CI48

The PARC asset tag is in the format of Node1#Node2#Link code;
If there are more than one PARC asset for a generator, they are joined by "$" symbols

TNUoS charges associated with pre-existing assets – a worked example

Step 5 – based on the PARC asset tag, sum up the incremental impact (MWkm) on those PARC assets, and calculate the PARC tariff for a specific generator. By applying the PARC tariff on the relevant charging base (MW), we get the PARC charge for generator A.

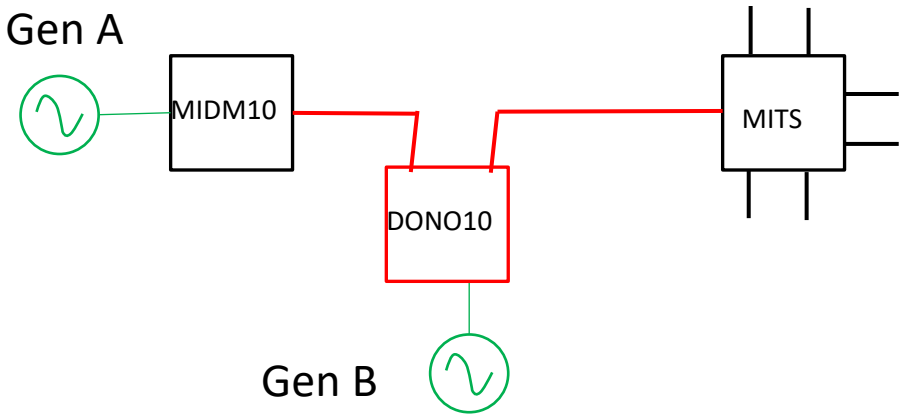
In this example, for generator A, all of its local circuits are PARC. Therefore the PARC tariff for generator A is equal to the local cct tariff for MIDM10, plus local substation tariff associated with MIDM10

Step 6 – for generator A, its local charge = PARC charge + PEA charge.

Therefore the PEA charge associated with generator A is zero.

TNUoS charges associated with pre-existing assets – a worked example

A few years' later, generator B applies for a connection, which triggered network changes.



ENABLING WORKS

Sole Enabling Works

- Install a 132kV disconnector
- Provision of communications, alarms, indications and metering from the User site as set out in Appendix 9.
- All associated protection and control works.
- Associated civil works and miscellaneous and minor works required.

Secured Shared Enabling Works

As per the following reinforcement instructions:

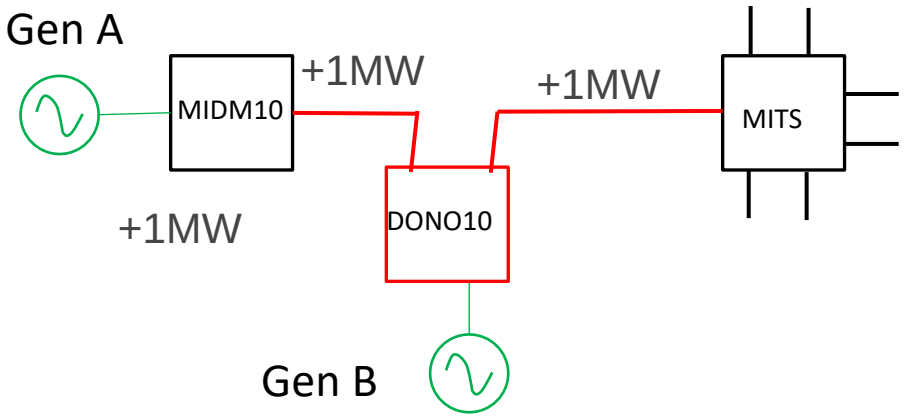
- **SPT-RI-144** – Coalburn SGT3
- **SPT-RI-218** - Coalburn 132kV Bus Coupler Auto-Close Scheme
- **SPT-RI-239** – Coalburn to Douglas North Collector 132kV Substation Circuit — PARC
- **SPT-RI-240** – Douglas North Collector 132kV Substation — PARC

Douglas North 132kV Collector substation – At the Douglas North 132kV collector substation site, a 132kV air insulated busbar will be installed to facilitate the connection of Douglas West Wind Farm and future connections. This 132kV busbar will be looped into the proposed Coalburn to Middlemuir wind farm 132kV underground cable, utilising two new 132kV underground cable sections (~0.3km each). **(SPT-RI-240)**

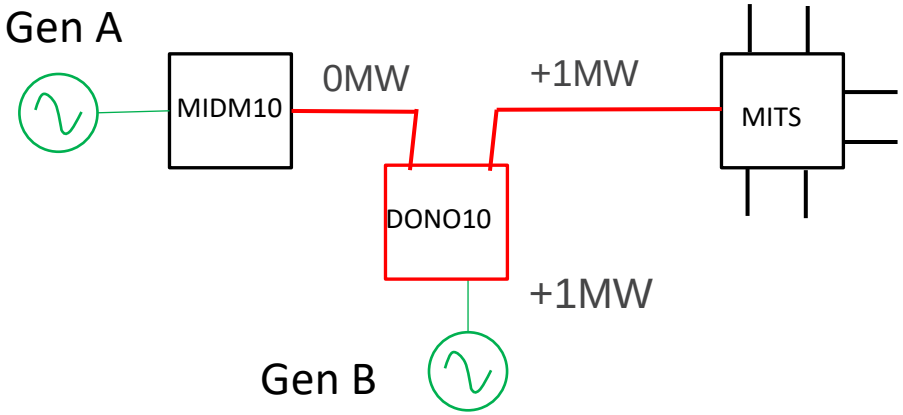
Change to the COAL-MIDM cable – thus PARC

TNUoS charges associated with pre-existing assets – a worked example

Local circuit tariffs for MIDM10 and for DONO10 are calculated separately



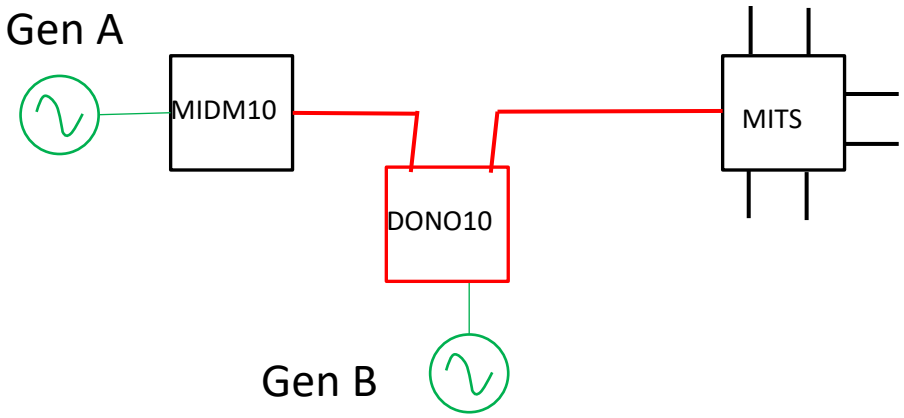
MIDM10 local circuit tariff



DONO10 local circuit tariff

TNUoS charges associated with pre-existing assets – a worked example

The PARC assets for generator A and generator B are “matched” to the network model.



Project Name	PARC
Middle Muir	DONO10#MIDM10#TMP2020Nov004$COAL10# DONO10#TMP2020Nov003
Douglas West	DONO10#MIDM10#TMP2020Nov004$COAL10# DONO10#TMP2020Nov003

For generator A, although its Construction Agreement has not changed, due to network changes, its PARC asset ID has changed.

In this example, as all their local assets are PARC, PEA charges for generator A (Middle Muir) and generator B (Douglas West) are both zero.

The practicality

* Project-specific information, i.e. the “best view” charging base, can be derived by a third party

Nodal Input				
Bus Name	Local Substation Name	Local Asset Grouping	Local Security Factor	Tariff Model TEC
MIDM10	Middle Muir	Middle Muir	1	0.051

Confidential “best view”

- Data format

“COAL10#MIDM10#TMP2017031” and DONO10#MIDM10#TMP2020Nov004$COAL10#DONO10#TMP2020Nov003

are machine-readable, to enable the DCLF-ICRP model to undertake the full network loadflow calculation.

It will be inefficient to convert them back to natural language, considering that the data source, in natural language, are already published in ESO’s website (the Transmission Works Register).

Legal Text Review

Joe Henry/Garth Graham

Original

Add the following new paragraph (text shown in red) to CUSC Section 14, paragraph 14.20 and add the schedule as Schedule 1 to Section 14 and update the Contents Page of [Schedule 1] to reflect this.

"14.29
Stability & Predictability of TNUoS tariffs
(Text remains as is)

New text added at end of Paragraphs headed Predictability

The calculation, as undertaken by The Company, of the Charges for Physical Assets required for Connection when setting TNUoS Charges for a Charging Year

[To aid in the transparency and understanding of the setting of TNUoS Tariffs – *for context?]* at the same time as The Company publishes the [draft and final – *assume both?]* TNUoS Charges for a Charging Year, The Company shall publish [the details and components applied in the above calculation, the figures attributed to these and the output of the calculations – *is this a sufficient description given will cross refer to the schedule?*] as provided for in the proforma calculation schedule attached at [Schedule 1- *happy to call in sch or prefer app?*] to this CUSC Section 14. The output shall be published in the form as set out in [Schedule 1] or, provided that the details, components and calculation provided for at Schedule 1 are always included, in such other form as The Company considers appropriate.

Schedule 1

The proforma of the form and content to be published for the purposes of the calculation in accordance with Paragraph 14.29
[add the spreadsheet]

Alternative

Original
Add the following new paragraph (text shown in red) to CUSC Section 14, paragraph 14.20.

“14.29
Stability & Predictability of TNUoS tariffs
(Text remains as is)

New text added at end of Paragraphs headed Predictability

Guidance on the Calculation of the Charges for Physical Assets required for Connection when setting TNUoS Charges for a Charging Year

[To aid in the transparency and understanding of the setting of TNUoS Tariffs – *for context?]* [in each Charging Year and in any event no later than the date The Company publishes the draft TNUoS Charges for the following Charging Year], The Company shall publish guidance on how it will undertake the calculation to set TNUoS tariffs in compliance with the Limiting Regulation for that following Charging Year and when assessing compliance following the conclusion of that Charging Year.

Formalise Solution

Garth Graham/All

Next Steps

Chair