CUSC Alternative Form

CMP375 WACM1:

CMP375 LCP Alternative

Overview:

This alternative proposes adapting CMP375 Original to use forward looking data where possible, in alignment with CUSC[1]. The main areas where this can be achieved are:

- Calculation of the cost of works used in EC/EF calculations
- Weighting works types when calculating weighted average works costs for EC/EFs

The underlying calculations for the methodology will align with CMP375, so will not be outlined in detail in this paper.

The deviation from the CMP375 original is to drive improvement in cost reflectivity and reduce volatility, as well as providing a more stable forward-looking signal and reacting to what is being built and planned to be built.

[1] CUSC 14.15.59 seeks the signal "to provide for future system expansion", and 14.15.61 indicates "making the tariffs as forward looking at possible".

Proposers:

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What is the proposed alternative solution?

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Areas of alignment with CMP375 Original

The table below summarises the key methodology components for the alternatives as discussed in workgroup meeting and summarised by the Chair.

For each component, the table shows whether it is aligned with CMP375 Original and points to the relevant sections of this document for more detail.

Component	Aligned with CMP375 Original?	Approach
Works included	Yes	**Include:** new circuits, circuit reinforcements, circuit life extensions **Exclude:** non-circuit reinforcements, substations.
Weighting methodology of works costs	Yes	MW-km weighted average cost
Data – cost of works	**No**	See section – “Calculating works costs”
Data – weighting between works types	**No**	See section – “Calculating basket of works”

Available forward-looking data

Data from National Grid ESO’s Network Options Assessment (NOA) provides cost and volume data for planned works at 400kV for OHL and Cable works. There is limited data at other voltage levels.

Data from Transmission Operators’ price control business plans provides:

- Volumes of proposed works across all voltage levels
- Estimated costs of proposed works

This approach is based on forward-looking datasets which are known to exist, though enhancing data provided under NOA could improve this approach.

[1] CUSC 14.15.59 seeks the signal “to provide for future system expansion”, and 14.15.61 indicates “making the tariffs as forward looking at possible”.

What is the difference between this and the Original Proposal?

There are two components to this alternative which differ from CMP375 original.

- Calculation of the cost of works used in EC/EF calculations
- Weighting works types when calculating weighted average works costs for EC/EFs

Calculating works costs

This alternative would include works costs outlined in the NOA dataset for 400kV works which are given a 'Proceed' or 'HND Essential' recommendation. It may be appropriate to consider all NOA works which is for NGESO to judge with full visibility of the data. These would be used when calculating the Expansion Constant and 400kV Cable Expansion Factor. The NOA cost data includes elements which should be excluded from the expansion constant, such as civils. This alternative would use 10 years of historic data to estimate a proportion of costs which should be included.

It would continue to use 10 years of historic costs when calculating Expansion Factors. This approach reflects a practical element of forward-looking change in expected costs whilst using historic data to calculate relative costs of works at different voltage levels.

Calculating basket of works

Each Expansion Constant or Expansion Factor is calculated as a weighted average of cost data based on a set of expected works which we refer to here as a 'basket of works'. This alternative would change this 'basket' of expected works to be forward-looking.

The basket would be set based on the future works set out in the Transmission Operators' price control business plans for each voltage level and circuit type. Given the set of works included, this will produce a split between new build and replacement for circuits, weighted by length of circuits. Where there is no data, we will assume that 100% is new build as under the current methodology.

We have chosen to use length of circuit as this data is readily available. If in future there is information on MW-km for these works, then NGESO could consider using these values to shape the basket.

The table below shows an example split by circuit type and voltage level based on SSEN and SPEN's RIIO-T2 business plans. The backing calculation is available in the accompanying spreadsheet.

Circuit type	Voltage	Addition %	Replacement %
OHL	132	6.1%	93.9%
OHL	275	6.2%	93.8%
OHL	400	28.0%	72.0%
Cable	132	16.0%	84.0%
Cable	275	38.1%	61.9%
Cable	400	100.0%	0.0%

What is the impact of this change?

Proposer's Assessment against CUSC Charging Objectives	
Relevant Objective	**Identified impact**
(a) That compliance with the use of system charging methodology facilitates effective competition in the generation and supply of electricity and (so far as is consistent therewith) facilitates competition in the sale, distribution and purchase of electricity;	**Positive** A fair and predictable signal will facilitate competition in the generation of electricity by removing barrier to investment and risk premium priced by investors which should in turn lead to more effective competition in the wholesale market and supply of electricity.
(b) That compliance with the use of system charging methodology results in charges which reflect, as far as is reasonably practicable, the costs (excluding any payments between transmission licensees which are made under and accordance with the STC) incurred by transmission licensees in their transmission businesses and which are compatible with standard licence condition C26 requirements of a connect and manage connection);	**Positive** *Use of forward-looking data* The expansion constant sends a forward-looking signal to users of the transmission network, related to the relative cost of connections in different transmission zones. Using forward-looking data brings the forward-looking signal provided by the expansion constant more closely in line with the costs of providing the new connection or continuing to provide an existing connection. Continuing to use only historic data would maintain a time-lag between the point at which costs are incurred and the time at which they are reflected in transmission charges. *Weighting method for reinforcement costs* The expansion constant is defined in £/MW-km. It should therefore represent the average cost of providing a MW-km of network capacity. Using MW-km as a weighting between reinforcement types achieves this aim, as it calculates the total cost of all reinforcements considered and divides by total MW-km provided. Continuing to use length (km) would maintain a distortion which assigns higher weighting to high length circuits even if they

	provide the same level of network capacity as shorter circuits. This would mean that the average cost of transmission licensees providing a MW-km of network capacity is not as accurately reflected.
(c) That, so far as is consistent with sub-paragraphs (a) and (b), the use of system charging methodology, as far as is reasonably practicable, properly takes account of the developments in transmission licensees' transmission businesses;	**Positive** *Use of forward-looking data* Using forward-looking data will improve alignment between the types of reinforcements carried out by transmission licensees to provide capacity, and the calculation of the cost of network capacity. Continuing to use historic data would maintain a time-lag between the point at which the reinforcements carried out by licensees change, and when the changing mix of works is reflected in the expansion constant.
(d) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency *; and	**Positive** Should facilitate compliance with EU €2.50/MWh cap for generator transmission charges.
(e) Promoting efficiency in the implementation and administration of the system charging methodology.	**Positive**
*Objective (d) refers specifically to European Regulation 2009/714/EC. Reference to the Agency is to the Agency for the Cooperation of Energy Regulators (ACER).	

When will this change take place?

Implementation date:

As per CMP375 Original

Implementation approach:

Use of forward-looking data

The processes for collecting the forward-looking data used to calculate the expansion constant will depend on the data source used. However, we suggest using data from existing processes which produce similar data such as National Grid ESO's Network Options Assessment or Transmission Operators RIIO business plans. Producing the relevant data could be integrated into these processes, with the work required comparable to that required under the current method of collecting historical data. Similar approach could be used for NOA data to ensure that historic and forward-looking dataset can be used consistently in comparable terms.

The assessment of whether these is adequate forward-looking data depends on the representativeness of the data collected and the volatility of the data, both between data points and between iterations of the expansion constant calculation. Where National Grid ESO deem that historic data should be included, it should be treated equally to forward-looking data and the most recent historic data should be used.

Acronyms, key terms and reference material

Acronym / key term	Meaning
BSC	Balancing and Settlement Code
CMP	CUSC Modification Proposal
CUSC	Connection and Use of System Code
ESO	Electricity System Operator
NOA	Network Options Assessment
RIIO	Revenue=Incentives+Innovation+Outputs [as Electricity Transmission Regulatory Framework – Ofgem]
STC	System Operator Transmission Owner Code

Reference material:

1. CMP375 LCP Alternative 1 pager 2022_12_02.doc
2. CMP375 LCP Alternative Workings 2022_12_02.xls