ESO

Draft Final Modification Report

CMP411:

Introduction of Anticipatory Investment (AI) within the Section 14 charging methodologies.

Overview: Changes to the CUSC will be required to implement Ofgem's decision in relation to Anticipatory Investment (AI). This modification seeks to introduce AI and a mechanism for the recovery of AI costs within the Section 14 charging methodologies.

Modification process & timetable

1. **Proposal Form** — 09 February 2023
2. **Workgroup Consultation** — 16 June 2023 - 07 July 2023
3. **Workgroup Report** — 19 October 2023
4. **Code Administrator Consultation** — 06 November 2023 - 27 November 2023
5. **Draft Modification Report** — 07 December 2023
6. **Final Modification Report** — 05 January 2024
7. **Implementation** — 01 April 2025

Have 15 minutes? Read our Executive summary

Have 60 minutes? Read the full Draft Final Modification Report

Have120 minutes? Read the full Draft Final Modification Report and Annexes.

Status summary: The Draft Final Modification Report has been prepared for the recommendation vote at Panel.

Panel recommendation: The Panel will meet on 15 December 2023 to carry out their recommendation vote.

This modification is expected to have a: High impact
ESO, Offshore Generators, Offshore Transmission Owners, Demand customer

Governance route	Standard Governance modification which has been assessed by a Workgroup	
Who can I talk to about the change?	**Proposer:** Nitin Prajapati Nitin.Prajapati@nationalgrideso.com	**Code Administrator Chair**: Claire Goult Claire.Goult@nationalgrideso.com

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Executive summary

This modification seeks to introduce Anticipatory Investment (AI) and a mechanism for the recovery of AI costs within the Section 14 charging methodologies to implement Ofgem's policy decisions on the Early Opportunities and Pathway to 2030 workstreams of the Offshore Transmission Network Review (OTNR).

What is the issue?

Where Offshore Generators share the same offshore transmission assets but connect at different times, AI may be made by the initial Offshore Generator under a developer build scenario. Currently, the Connection and Use of System Code (CUSC) does not specify how the charges associated with offshore assets related to AI should be recovered and therefore a change to Section 14 of the charging methodologies is required.

The purpose of this modification is not to calculate the AI value (that is done through the Early-Stage Cost Assessment process), but to determine how the AI value and the AI Cost Gap is recovered, including the appropriate tariff, the length of time for recovery and the appropriate inflation indexation to be used.

What is the solution and when will it come into effect?

Proposer's solution: The proposed solution is consistent with Ofgem's policy decision for Early Opportunities and Pathway to 2030 on AI which introduces an Early-Stage Assessment (ESA) process for projects incurring any AI expenditure. This would split the capital costs of offshore assets (utilised by both the initial and subsequent Generators) into a 'non-AI' and 'AI' value.

Any Generator connected to the Offshore Transmission System at the point of asset transfer, will become liable for the non-AI value portion of the Offshore Transmission Owner (OFTO) revenue at the point of asset transfer to the OFTO. Any subsequent Generator(s) will become liable for the AI value portion of the OFTO revenue at the point of connection to the Offshore Transmission System.

There will be a period between the shared offshore assets being transferred to the (OFTO) and the subsequent Generator connecting to the National Electricity Transmission System (NETS). During this period a portion of the AI value will be payable by the subsequent Generator to the OFTO, however, this portion cannot be recovered from the subsequent Generator(s) until they are connected to the transmission system. The difference between what is payable to the OFTO but cannot be recovered from the subsequent Generator is referred to as the 'AI Cost Gap.'

After the offshore transmission assets have been transferred to an OFTO and prior to the subsequent Generator(s) connecting, the AI Cost Gap will be recovered from Demand customers via the Transmission Demand Residual (TDR). Any subsequent Generator that connects after the asset transfer to the OFTO will be subject to costs associated with the AI Cost Gap once they connect.

The AI Cost Gap will be repaid to Demand customers by the subsequent Generator(s) either through the AI Cost Gap Tariff or via one payment in the charging year in which the subsequent Generator(s) connects.

Implementation date: 1 April 2025

Workgroup conclusions: The Workgroup concluded unanimously that the Original better facilitated the Applicable Objectives than the Baseline.

Panel recommendation: Panel will meet on 15 December 2023 to carry out their recommendation vote.

What is the impact if this change is made?

Introducing the principle of AI reduces the risk allocated to the initial Generator and improves the coordination of projects, by encouraging AI to enable a subsequent Generator(s) to connect. The methodology will provide clarity to industry on the treatment of AI and the basis of its cost recovery.

Interactions

There are no cross-code impacts, however this modification interacts with CMP402:Introduction of Anticipatory Investment principles within the User Commitment Arrangements. CMP411 considers AI from a network charging perspective whereas CMP402 considers AI from a User Commitment perspective.

What is the issue?

When two or more Offshore Generators are connected to the National Electricity Transmission System (NETS) at the same time and share the same offshore transmission assets, Section 14 of the Connection and Use of System Code (CUSC) methodology sets out how local charges (both offshore local circuit and offshore local substation) are apportioned between the two Offshore Generators.

Where Offshore Generators share the same offshore transmission assets but connect at different times, Anticipatory Investment (AI) may be made by the initial Offshore Generator under a developer build scenario. This is the investment that goes beyond the needs of the initial Generator, to build assets needed for a known future offshore generation project to then allow them to connect at a later point in time. Currently, the CUSC does not specify how the charges associated with offshore assets related to AI should be recovered and therefore a change to Section 14 of the charging methodologies is required.

Why change?

Under the current charging regime, the initial Offshore Generator may be liable for Transmission Network use of System (TNUoS) charges associated with both the AI element and the non-AI element prior to the subsequent Generator connecting. This approach to AI results in the initial generator paying higher TNUoS charges than it would if it had not made the AI. This is considered to act as a disincentive for the initial Generator to make the AI for future generation and is viewed as the largest barrier to greater coordination of offshore projects.

Ofgem have now reached a policy decision (Decision on Anticipatory Investment and Implementation of Policy Changes) on how AI will be shared between Generators and consumers for the Early Opportunities workstream of ONTR. The aim being to address this barrier to entry and enable Generators to undertake AI to deliver beneficial coordination between projects, while managing and mitigating the allocation of AI risk to consumers.

Ofgem also published a decision on Pathway to 2030 (PT2030) in March 2023 which extends the application of the AI policy developed in the Early Opportunities workstream, to projects within scope of the PT2030 workstream. This effectively results in the AI policy being applicable to the Holistic Network Design (HND).

What is the solution?

Proposer's solution

The proposed solution is consistent with Ofgem's policy decision on AI and further decision on Pathway to 2030.

Recovery of 'Non-AI' and 'AI' values

Ofgem's decision on AI (published 18 October 2022) introduces an Early-Stage Assessment process for projects incurring any AI expenditure. This would split the capital

costs of offshore assets (utilised by both the initial and subsequent Generators) into a 'non-AI' and 'AI' value.

Diagram 1 explains this point further with an illustrative example.

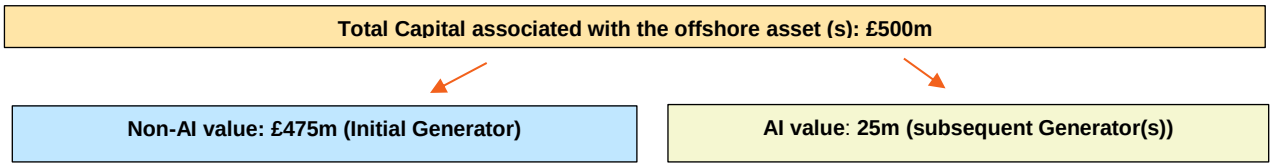


Diagram 1: *Example split of AI and Non-AI costs.*

As detailed above, the total capital costs associated with the offshore assets is £500m. Under the current proposed Early-Stage Assessment design, it is determined by Ofgem that £475m represents the 'non-AI' cost and the remaining £25m represents the 'AI' costs, with those values being apportioned to the initial and subsequent Generator respectively.

The offshore local tariff calculations for each Generator connected to the Offshore Transmission System at the time of asset transfer or subsequently will utilise their individual generation connected in addition to their proportion (based on the AI value or non-AI value) of the OFTO revenue, Network Export Capacity, and asset ratings rather than those of the total project.

Any Generators connected to the Offshore Transmission System at the point of asset transfer, will become liable for offshore local tariffs associated with the non-AI value portion of the OFTO revenue at the point of asset transfer to the OFTO. Any subsequent Generator(s) will become liable for offshore local tariffs associated with the AI value portion of the OFTO revenue at the point that they connect to the Offshore Transmission System.

The 'AI' value will be calculated (by Ofgem) in such a way that a portion of costs associated with shared assets (utilised by both the initial and subsequent Generators) will already be incorporated within the 'AI' value and a portion of the shared costs incorporated into the non-AI value.

Recovery of the 'AI Cost Gap' value

There will be a period between the shared offshore assets being transferred to the Offshore Transmission Owner (OFTO) and the point in time the subsequent Generator connects to the NETS. During this period a portion of the 'AI' costs will be payable to the OFTO because the costs of the infrastructure form part of the asset value to the OFTO. However, this element of the Offshore Generator TNUoS tariff cannot be recovered from the subsequent Generator as they are not connected to the NETS yet. The difference between what is payable to the OFTO by the subsequent Generator and cannot be recovered from them is referred to as the 'AI Cost Gap'.

To follow on from the example above, the AI value can be further split into:

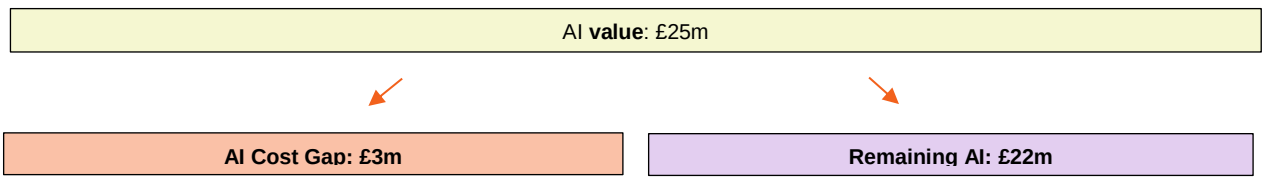


Diagram 2: Example split of AI Cost Gap and Remaining AI

To ensure consistency with Ofgem's decision on AI, it is proposed that:

- The subsequent Generator(s) will accrue liability of costs associated with the 'AI Cost Gap' i.e., from the period after OFTO transfer up to the point the subsequent Generator(s) connect. /
- During this period, the 'AI Cost Gap' value will be recovered by the ESO through Demand customers via the Transmission Demand Residual (TDR) element of TNUoS.
- Once connected the subsequent Generator(s) will then be required to repay the total accrued 'AI Cost Gap' value (taking into consideration inflation) already previously met by Demand customers (via the TDR). It is proposed this will be achieved via the application of a £/kW and this solution will ensure Demand customers are paid back in full.
- The 'AI Cost Gap' value will be repaid by the subsequent Generator either:
    - Through the AI Cost Gap Tariff. This tariff will be applied over a period of time equal to the number of days for which the subsequent Generator(s) share of the AI Cost Gap was accrued, rounded up to a whole number of years, in addition to the number of days remaining in the charging year in which the subsequent Generator(s) connects (if it connects after the first day of a charging year); or
    - alternatively, if decided by the Generator, be paid via one payment in the charging year in which the subsequent Generator connects.
- The corresponding amount would then flow back to Demand customers via the TDR to net off the payments Demand customers previously had made during the 'AI Cost Gap' period. This will result in lower TDR tariffs to be paid by Demand customers.
- The AI Cost Gap will be calculated as follows: The AI proportion of OFTO revenue associated to the subsequent Generator(s) for each full or partial charging year prior to the subsequent Generator(s) connecting, will be identified. Each year's value will be inflated in line with the average increase in May – October CPIH (Consumer Price Index with Housing costs), to ensure it is in the appropriate price base for the year the tariff becomes applicable. The total of these values will be the AI Cost Gap.
- *Calculating the AI Cost Gap Tariff*: The AI Cost Gap Tariff for the subsequent Generator (Generator i) which is expressed in £/kW, shall be the ratio of the AI Cost Gap that Generator i is liable to pay for the relevant year (£) and the Transmission Entry Capacity (kW) of Generator i, i.e:
    - AI Cost Gap Tariff for Generator $i = \frac{n \times AI\ Cost\ Gap}{N \times TEC_i}$
    - Where:
        - TEC_i= Transmission Entry Capacity of Generator i in kW
        - n = number of days remaining in the year over which the tariff is to be paid
        - N = total number of days over which the tariff is applicable

- The calculation shall be used for the initial partial year in which Generator i connects (if applicable) and the first full charging year. For each subsequent year that the AI Cost Gap Tariff is applicable after the year of calculation, the full year AI Cost Gap Tariff for Generator i shall be inflated in line with the average increase in May to October CPIH.

Note: The defined term for AI required in Section 11 for this modification will be included in the Legal Text changes as part of CMP402.

Workgroup considerations

The Workgroup convened 9 times to discuss the perceived issue, detail the scope of the proposed defect, devise potential solutions, and assess the proposal in terms of the Applicable Objectives.

The Workgroup held their Workgroup Consultation between 16 June 2023 – 07 July 2023 and received five responses. The full responses and a summary of the responses can be found **Annex 4**.

Consideration of the Proposer's solution

The Proposer explained the background of Anticipatory Investment and detailed the proposed solution covering the AI Cost Gap and proposed mechanism for the recovery of AI costs. One Workgroup member questioned how AI would be calculated and how it would be split. The Authority representative clarified that Ofgem would determine the AI value and non-AI value as part of the Early-Stage Assessment process but reiterated the challenge of the Workgroup is to determine the approach of how to get these numbers into the charging methodology.

One Workgroup member raised a concern over consequential oversizing of onshore from oversizing offshore assets. The Workgroup member stated consistency for offshore oversizing must be considered for future onshore oversizing. The Authority representative advised the immediate focus of the Workgroup is to consider what goes into the offshore build and encouraged the Workgroup to contribute alternative options. No Workgroup Alternative requests were subsequently raised.

The Proposer presented the proposed process of AI Cost Gap Recovery **(Annex 3)** to the Workgroup outlining the approach for calculating AI Cost Gap and the AI Cost Gap Tariff.

Several Workgroup members asked for clarity on how the split between the AI Cost Gap and remaining AI will be determined. The Proposer explained the value of the AI Cost Gap will be dependent on the time period between the assets being transferred to an OFTO and the subsequent Generator connecting. The remaining AI will just be the AI value minus the AI Cost Gap value.

The Proposer advised that if AI was for a Transmission Owner (TO) rather than a Generator, this would be recovered through the Transmission Demand Residual (TDR) part of TNUoS prior to and after the TO utilises the assets, in line with Ofgem's decision on AI.

A Workgroup member raised a question around the link between CMP411 and CMP402. The Proposer explained that in terms of how it works today, if a Generator fails to connect, its User Commitment will be used to partially offset the cost of TO's stranded assets. However, User Commitment is usually not enough to cover the total cost of stranded assets, and TNUoS revenue (Transmission Demand Residual) will have to cover the shortfall. AI and User Commitment is covered by CMP402, therefore there is a link between the two modifications in the scenario where the Generator fails to connect.

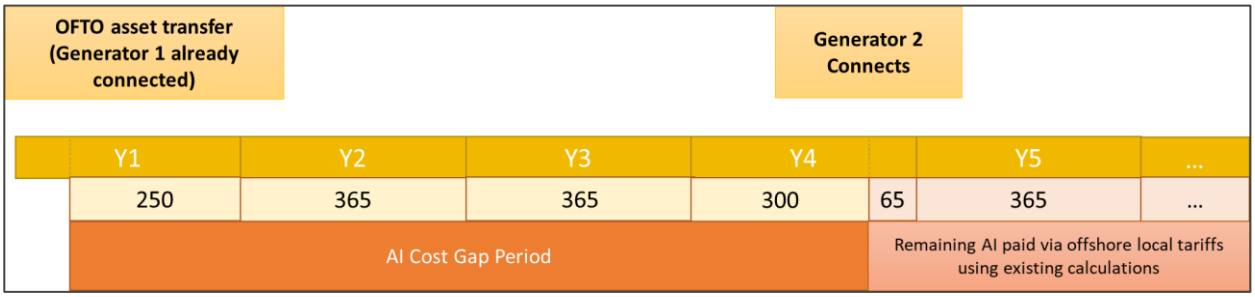
Workgroup members noted that there may be instances where the subsequent Generator connects significantly later compared to when the assets were energised. This results in the subsequent Generator paying the full cost of the assets associated with AI which have depreciated and have significantly less asset life left. The Workgroup agreed that this could be an issue, however the current AI is being undertaken for known developers connecting after the assets are built so the issue noted could happen in future, but not in the near future. Therefore, a follow up modification could be raised to deal with the issue if it occurs, as opposed to trying to future this modification against all potential possibilities.

Subject Matter Expert (SME) Worked example.

The SME from ESO shared a worked example with the Workgroup including a timeline of the solution as below:

Identifying the AI Cost Gap Period

- In this example there are two Generators involved in a project and one connects after the OFTO asset transfer, meaning there was AI for the 2nd Generator.
- The total capital costs are £500m.
- Ofgem tells us the value that forms the AI share of the capital costs is £200m, i.e., 40% of the capital costs.
- This means that 40% of any OFTO revenue to be collected is AI.



AI Cost Gap Period = 250 + 365 + 365 + 300 = 1280 days

Identifying the value of the AI Cost Gap

- AI Cost Gap = 40% OFTO Revenue for the relevant period
- Assumption: Inflation for each year is 3%

Year	Year 1	Year 2	Year 3	Year 4
Total OFTO Revenue for Year i	£10m	£15m	£15m	£15m
AI Cost Gap (in Year i price base)	£4m	£6m	£6m	£5m
AI Cost Gap (in Year 4 price base – to 3dp)	£4m x 1.03^3	£6m x 1.03^2	£6m x 1.03^1	£5m
	£4.371m	**6.365m**	**6.180m**	**£5m**

- At the time of tariff calculation, the value of the AI Cost Gap is:

  AI Cost Gap = £4.371m + £6.365m + £6.180m + £5m = £21.916m (to 3dp)

Calculating the AI Cost Gap Tariff – The Theory

- The AI Cost Gap Tariff (expressed in £/kW) shall be the ratio of the AI Cost Gap that the subsequent Generator/s is liable to pay in the relevant year (£) and the Transmission Entry Capacity (TEC) in kW of the subsequent Generator/s:

$$AI\ Cost\ Gap\ Tariff\ for\ Generator\ i = \frac{n \times AI\ Cost\ Gap}{N\ \times\ TEC_i}$$

- Where:
  - TEC_i = Transmission Entry Capacity of Generator i in kW
  - n = number of days remaining in the year over which the tariff is to be paid
  - N = total number of days over which the tariff is applicable
- This calculation shall be used for the initial partial year in which the subsequent Generator connects (if applicable) and the first full charging year. For each subsequent year that the tariff is applicable for after the year of calculation, the AI Cost Gap Tariff shall be inflated in the same manner as the associated Offshore Transmission Owner Revenue.

Calculating the AI Cost Gap Tariff – worked example

- AI Cost Gap Period = 1280 days
- Length of initial part year of payment = 65 days
- Total Length of period to pay over = 1525 days (this is 65 days + 4 whole years)
- Generator 2's TEC = 400MW

$$Initial\ part\ year\ AI\ Cost\ Gap\ Tariff\ for\ G2 = \frac{65 \times 21{,}916{,}308}{1525\ \times 400 \times 1000} = £2.34/kW$$

$$Full\ year\ AI\ Cost\ Gap\ Tariff\ for\ G2 = \frac{365 \times 21{,}916{,}308}{1525\ \times 400 \times 1000} = £13.11/kW$$

- For each year that the tariff is applicable, the full year AI Cost Gap Tariff shall be inflated in the same manner as the associated OFTO's Revenue - or we could recalculate each year if the Generators TEC changes during this period.

Year	Year 4	Year 5	Year 6	Year 7	Year 8
AI Cost Gap Tariff (in Year 4 price base, £/kW)	2.34	13.11	13.11	13.11	13.11
AI Cost Gap Tariff (in Year i price base, £/kW to 3dp) – Assuming inflation = 3%	2.34 x 1	13.11 x 1.03	13.11 x 1.03^2	13.11 x 1.03^3	13.11 x 1.03^4
	£2.34/kW	**£13.51/kW**	**£13.91/kW**	**£14.33/kW**	**£14.76/kW**

- Generator 2 will also have offshore local tariffs set at the point of connection to cover the remaining AI quantity for each year – these shall be calculated as the usual offshore local tariffs, using Generator 2's share of the OFTO revenue in the calculation.

The SME asked the Workgroup to share what they thought an appropriate length of time would be to pay off the AI cost gap. A Workgroup member responded saying that it might be an idea to consider payment of capital connection costs up front all in one go as an option. The SME felt this was a perfectly reasonable option, and this was incorporated into the solution, as follows:

Option 1 - The AI Cost Gap can be paid off fully in the first year the subsequent Generator connects.

Option 2 – The AI Cost Gap will be repaid by the subsequent Generator over a period equal to the number of days for which the subsequent Generator(s) share of the AI Cost Gap value was accrued, rounded up to a whole number of years.

Another member raised a point around the AI Cost Gap and how this might impact the current tariffs and the limiting regulation if it was to be implemented. The Proposer advised that since the multiple Generator arrangement was planned from the outset of the project, the assets installed would be built specifically for the connection of the Generators. This forms part of their contractual agreement, being a known connection as opposed to an unknown connection, and the assets that are considered to be AI are Physical Assets Required for Connection (PARC). Local charges relating to PARC are excluded when assessing compliance with the Limiting Regulation and therefore will have no impact on the Adjustment Tariff which is paid by all Generators.

Subject Matter Expert (SME) Presentation – Options for Inflation of the AI Cost Gap

During Workgroup discussions, a Workgroup member raised the question of whether inflation has been taken into consideration, and if it affects the tariff. The ESO Subject Matter Expert described two methods currently used within TNUoS Tariff setting:

Inflation in line with the OFTO's revenue:

- The current Revenue Indexation Adjustment Term (RIT) for the relevant year t is defined in OFTO's Licence to be:

$$RIT_t = \frac{RPI(September)_{t-1}}{RPI(base\ date)}$$

- This is applied to offshore local tariffs, which form part of the OFTO's revenue, to ensure that the tariffs are changing in line with the revenue of the relevant OFTO.

Transmission Owner Price Index (TOPI):

- CUSC 14.3.6 defines the Transmission Owner Price index (TOPI) for year t as:

$$TOPI_t = \frac{(May\ to\ October\ average\ TOPI)_{t-1}}{(May\ to\ October\ average\ TOPI)_{t-2}}$$

- It uses CPIH values as defined in the onshore TO licences. This is applied to the onshore local tariffs and several TNUoS parameters (e.g., the Expansion Constant).

The ESO SME explained that this was not setting a tariff that needs to track the TOs revenue going forward as it is paid off by the Demand residual in the first instance and therefore it is not being owed to any particular TO. It looks backwards at the amount that has already been paid off by those Demand customers.

The Proposer advised Workgroup members that inflation has been built into the tariff to ensure that the amount paid back to the Demand customers is reflective of the value at that time. The Proposer shared that they had initially considered whether RPI (Retail Price Index) or CPI (Consumer Price Index) was appropriate to use for inflation, and that CPI had been proposed. It was later considered whether to use CPI or CPIH, and it was agreed that CPIH is a more comprehensive measure of inflation.

One Workgroup member queried the methodology and cycle for setting the year-ahead inflation index. After consultation with the ESO revenue team SME, it was agreed to align to the OFTO revenue indexation (May to October), and this was incorporated into the Legal Text.

The Proposer described various scenarios surrounding how changes in TEC (Transmission Entry Capacity) could be accommodated. It was explained how changes in TEC can be accommodated for the subsequent Generator as the proposed formula takes into consideration TEC in the calculation of the tariff. In instances where the TEC changes, the remaining Cost Gap value (rather than the original total) would need to be assessed as a proportion of the value would have already been paid off. The Proposer felt it is worth noting that the calculation as described previously doesn't need to be recalculated every year if the TEC remains the same but if the TEC changes, then it is simple to recalculate, and that option could be easily added in.

Terms of Reference Discussion

One Workgroup member queried what Term of Reference 'e' referred to and queried how non-AI values would be covered. The Proposer clarified that the non-AI values would be recovered by the pre-existing methodology and confirmed recovery of AI values have been covered within the Legal Text.

Legal Text Review

Legal text for 14.15.170 was shared with the Workgroup. The Proposer queried whether 14.15.170 was the best location for the Anticipatory Investment Legal Text and clarified that it was chosen due to it being the last point in the tariff section. The Workgroup agreed on the location of the Legal Text.

The Proposer highlighted that if CMP411 is approved, a subsequent modification will be required to add definitions into Section 11 of the CUSC. The Proposer asked Workgroup members if Anticipatory Investment or the AI Cost Gap needed to be referred to in any other parts of Section 14. No areas were highlighted by the Workgroup.

The Proposer advised the Workgroup that ESO legal team suggested showing each update in a separate paragraph and numbering it accordingly to align to the current format of the CUSC.

Another update highlighted by the Proposer was in relation to how the AI Cost Gap was paid back to Demand customers. A section was added to show it would be paid via one payment in the charging year that the subsequent Generator connects.

A Workgroup member provided feedback on the inflation calculation suggesting the inflation approach needed to be further defined as it was not clear if the inflation indexation takes into consideration the average across two years and that the average across one year is not sufficient. The Proposer clarified the inflation indexation does take into consideration the two prior years as it considers the change in average (may-oct) in one year to another year (not just the change from the May to October's inflation within a year). The Proposer confirmed to make this clearer in the Legal Text, the following text would be added to confirm the inflation calculation:

$$\text{Tariff Inflation in year t} = \frac{(\text{May to October average CPIH})_{t-1}}{(\text{May to October average CPIH})_{t-2}}$$

The Proposer shared the updated Legal Text to reflect the feedback from Workgroup members. One Workgroup member queried whether tariff setting could occur earlier than October. An ESO representative clarified that offshore tariffs are not forecast in advance, and instead are calculated when the generator is connected. It was clarified that these tariffs are published in January, in line with the timescales for onshore tariffs.

Several Workgroup members suggested typographical changes to the Legal Text, which were agreed with the Proposer. One Workgroup member also suggested additional cross-referencing within the Legal Text to make it clearer.

One Workgroup member queried whether the tariff was prospective, and if there would be a reducing balance if so. An ESO representative clarified that the tariffs are calculated at the point of connection, rather than being set in advance.

Another Workgroup member asked if 'non-AI' needed to be defined within Section 11 of the CUSC. The Chair clarified that not all terms needed to be defined within Section 11 if they are sufficiently described in Section 14. The Chair also clarified that the defined term for AI required in Section 11 for this modification would be included in the Legal Text changes as part of CMP402.

Workgroup consultation summary

Five non-confidential and zero confidential responses were received. The full responses and a summary of the responses can be found in **Annex 4**.

All five respondents felt the Original Proposal better facilitates the CUSC objectives.

- All five respondents stated the Original Proposal better facilitates objective a
- Three respondents stated the Original Proposal better facilitates objective c and e
- Two respondents stated the Original Proposal better facilitates b

Four respondents stated they supported the implementation approach, however one respondent, although supportive of the general implementation concept by Ofgem felt the consultation lacked the required detail to decide on the implementation or form a judgement on objective b.

All respondents stated they did not wish to raise a Workgroup Consultation Alternative Request. However, one respondent suggested looking at more varied worked examples along with the potential application of methodology to future onshore AI. The Proposer

agreed with the point made on the Legal Text but in relation to the worked examples, one had already been shared and explained it would be difficult to add another realistic example as it would contain commercially sensitive information in terms of when Generators are connecting and the cost of assets.

When considering recovery of the AI Cost Gap if the subsequent Generator connects at a much later point in time, one respondent described if a disconnect in project timeline occurred then DESNZ would grant a Generating Commissioning Clause (GCC) exemption noting the relation of the AI policy. The respondent noted the GCC is not in the consultation but explained an OFTO transaction would need to take place at some point with or without the later user connected. One respondent felt the approach should remain consistent with AI being recovered by the TDR and projects should be allowed to connect within a certain timescale and be subjected to a delay charge to prevent customers underwriting the cost gap for a prolonged period.

Two respondents stated that when choosing an option for applying inflation (CPI or RPI linked) the inflation term chosen needs to reflect the loss of value incurred by consumers when paying off the AI Cost Gap. One respondent noted that, given the materiality associated with offshore, sensitivity should be carried out to inform this debate and two respondents felt this should be consistent the existing approach in the CUSC.

As part of the consultation, respondents were asked to consider whether the subsequent Generator still pays for the AI and the AI Cost gap if a local circuit changes to a wider circuit. Three respondents felt the subsequent Generator should not pay for the AI Cost Gap. Another respondent commented that if the change occurred prior to the subsequent Generator connecting then they should pay up to the period when the change occurred. If it changed after connection, it should still pay the AI cost gap already calculated prior to connection to reflect costs already underwritten by consumers. One respondent felt this was beyond the scope of the modification as it touched on broader areas of the methodology yet to be determined. The Proposer agreed with this assessment and advised this is work being considered in the offshore Code Modification subgroup with industry and therefore out of scope for this modification.

In the context of the subsequent Generator paying the AI Cost Gap, the Proposer advised the Workgroup, this is not about paying back the OFTO/TO Revenue, but important to consider the loss of value to the consumer.

A Workgroup member asked if the AI Cost Gap was going to be added to the local circuit charge or whether it be recovered through a separate charge. The Proposer responded to say there would be a separate tariff for AI Cost Gap as that amount would need to be fully recovered from the subsequent Generator with no consumer sharing.

In relation to consumer impacts, one respondent noted that if the subsequent Generator(s) don’t connect to the National Electricity Transmission System (NETS) Ofgem’s policy decision on AI advises that the risk would sit with consumers. Two respondents described how the impact is minimised through the User Commitments paid by the Generator failing to connect, with one of these noting that there is always a risk of stranded assets when developing the NETS for the future. One respondent felt the cancellation charge should be sized accordingly to prevent customers paying unnecessary asset costs.

Legal text

A significant additional section 14.15.170 Anticipatory Investment is proposed to be added to Section 14 of the CUSC. The Legal Text for this change can be found in **Annex 5** on page 75 and 76 of Section 14 and is highlighted in red text.

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** By introducing the principle of AI, it reduces the risk allocated to the initial Generator (through paying higher TNUoS charges than they otherwise would have done had it not made the AI) and improves the coordination of projects, by encouraging AI to enable a subsequent Generator(s) to connect. This should have the knock-on impact of improved competition.
(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);	**Neutral**
(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** To the extent that Ofgem's policy decisions in respect of AI are required to be implemented by the company this modification reflects those developments.
(d) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency *; and	**Neutral**

(e) Promoting efficiency in the implementation and administration of the system charging methodology.	**Positive** Will provide clarity to industry on the treatment of AI and the basis of its cost recovery.
**The Electricity Regulation referred to in objective (d) is Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (recast) as it has effect immediately before IP completion day as read with the modifications set out in the SI 2020/1006.	

Proposer's assessment of the impact of the modification on the stakeholder / consumer benefit categories	
Stakeholder / consumer benefit categories	**Identified impact**
Improved safety and reliability of the system	**Neutral** Will not impact the operation of the transmission system.
Lower bills than would otherwise be the case	**Positive** The clarity provided (of the methodology) should provide offshore developers with greater confidence of what the applicable methodology will be and so reduce investment risk reducing overall costs to consumers.
Benefits for society as a whole	**Positive** Facilitates development of an integrated offshore network and the associated consumer benefits compared to radially connected projects.
Reduced environmental damage	**Positive** Facilitates development of an integrated offshore network and the associated benefits towards achieving Net Zero.
Improved quality of service	**Neutral** Will not directly impact the quality of service provided by the ESO and Offshore Generators

Workgroup Vote

The Workgroup met on 05 September 2023 to carry out their Workgroup vote. The full Workgroup vote can be found in **Annex 6**. The table below provides a summary of the Workgroup members view on the best option to implement this change.
The Applicable CUSC (charging) Objectives are:

CUSC charging objectives

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;
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);
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;
d) Compliance with the Electricity Regulation and any relevant legally binding decision of the European Commission and/or the Agency *; and
e) To promote efficiency in the implementation and administration of the system charging methodology

*The Electricity Regulation referred to in objective (d) is Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (recast) as it has effect immediately before IP completion day as read with the modifications set out in the SI 2020/1006.

The Workgroup concluded unanimously that the Original better facilitated the Applicable Objectives than the Baseline.

Option	Number of voters that voted this option as better than the Baseline
Original	5

Code Administrator Consultation Summary

The Code Administrator Consultation was issued on the 06 November 2023 closed on 27 November 2023 and received 2 non-confidential responses and 2 confidential responses. The full non-confidential responses can be found in **Annex 8**.

Code Administrator Consultation summary	
Question	
Do you believe that the CMP411 Original proposal better facilitates the Applicable CUSC Objectives?	Both respondents stated the Original proposal better facilitates objectives a, c and e. The respondents gave the following reasons: Objective a • Reduces the risk of the initial generator paying higher TNUoS charges if it were to undertake Anticipatory Investment (AI). • Benefits competition by reducing risk and uncertainty for the initial generator. Objective c • Addresses the current barrier to entry. • Reduces long term whole system costs. • Better enables project coordination. Objective e • Prescribes the calculative approach to recover AI costs. • Codifying the principles provides clarity and mitigates any risk of confusion on the treatment of cost recovery to industry.
Do you have a preferred solution?	Both respondents stated the Original solution is the preferred solution compared to the Baseline.
Do you support the proposed implementation approach?	Both respondents stated they supported the implementation approach. One respondent noted the date April 2025 should allow sufficient time for implementation. The second respondent felt the use of a new and distinct tariff would ensure the entirety of the AI Cost Gap is recovered by the Subsequent Generator which is aligned to the AI policy decision by Ofgem.
Do you have any other comments?	One respondent felt, for consistency, CMP411 and CMP402 should progress in parallel to ensure alignment across the charging User Commitment approaches.
Legal text issues raised in the consultation No legal text issues were raised by the respondents.	

EBR issues raised in the consultation
No EBR issues were raised by the respondents.

Panel Recommendation Vote

The Panel will meet on the 15 December 2023 to carry out their recommendation vote. They will assess whether a change should be made to the CUSC by assessing the proposed change and any alternatives against the Applicable Objectives.

Vote 1: Does the Original, facilitate the objectives better than the Baseline?

Panel Member: **Joe Colebrook**

	Better facilitates AO (a)?	Better facilitates AO (b)?	Better facilitates AO (c)?	Better facilitates AO (d)?	Better facilitates AO (e)?	Overall (Y/N)
Original						
Voting Statement						

Panel Member: **Binoy Dharsi**

	Better facilitates AO (a)?	Better facilitates AO (b)?	Better facilitates AO (c)?	Better facilitates AO (d)?	Better facilitates AO (e)?	Overall (Y/N)
Original						
Voting Statement						

Panel Member: **Joseph Dunn**

	Better facilitates AO (a)?	Better facilitates AO (b)?	Better facilitates AO (c)?	Better facilitates AO (d)?	Better facilitates AO (e)?	Overall (Y/N)
Original						
Voting Statement						

Panel Member: **Andrew Enzor**

	Better facilitates AO (a)?	Better facilitates AO (b)?	Better facilitates AO (c)?	Better facilitates AO (d)?	Better facilitates AO (e)?	Overall (Y/N)
Original						
Voting Statement						

Panel Member: **Garth Graham**

	Better facilitates AO (a)?	Better facilitates AO (b)?	Better facilitates AO (c)?	Better facilitates AO (d)?	Better facilitates AO (e)?	Overall (Y/N)
Original						
Voting Statement						

Panel Member: **Kyran Hanks**

	Better facilitates AO (a)?	Better facilitates AO (b)?	Better facilitates AO (c)?	Better facilitates AO (d)?	Better facilitates AO (e)?	Overall (Y/N)
Original						
Voting Statement						

Panel Member: **Paul Jones**

	Better facilitates AO (a)?	Better facilitates AO (b)?	Better facilitates AO (c)?	Better facilitates AO (d)?	Better facilitates AO (e)?	Overall (Y/N)
Original						
Voting Statement						

Vote 2 – Which option is the best?

Panel Member	BEST Option?	Which objectives does this option better facilitate? (If baseline not applicable).
Joe Colebrook		
Binoy Dharsi		
Joseph Dunn		
Andrew Enzor		
Garth Graham		
Kyran Hanks		
Paul Jones		

Panel conclusion

Panel will meet on 15 December 2023 to carry out their recommendation vote.

When will this change take place?

Implementation date

1 April 2025

Date decision required by
ESO require a clear 6 months to implement, however, following industry feedback, the Workgroup believe Generators would need to have visibility of and understand the methodology for AI cost recovery as soon as possible (Q1 2024 (by 31 March 2024) if possible), to allow this to be built into their business plans and aid any investment decisions.

Implementation approach
As above.

Interactions

☐Grid Code	☐BSC	☐STC	☐SQSS
☐European Network Codes	☐ EBR Article 18 T&Cs[1]	☐Other modifications	☐Other

There are no cross-code impacts, however this modification interacts with CMP402: Introduction of Anticipatory Investment principles within the User Commitment Arrangements. CMP411 considers AI from a network charging perspective whereas CMP402 considers AI from a User Commitment perspective.

Acronyms, key terms and reference material

Acronym / key term	Meaning
AI	Anticipatory Investment
AI Cost Gap	Anticipatory Investment Cost Gap
BSC	Balancing and Settlement Code
CMP	CUSC Modification Proposal
CPI	Consumer Price Index
CPIH	Consumer Price Index with Housing costs
CUSC	Connection and Use of System Code
DESNZ	Department for Energy Security and Net Zero
EBR	Electricity Balancing Regulation
ESA	Early-Stage Assessment
ESO	Electricity System Operator
GCC	Generating Commissioning Clause
HND	Holistic Network Design
NETS	National Electricity Transmission System
OTNR	Offshore Transmission Network Review
OFTO	Offshore Transmission Owner
PARC	Physical Assets Required for Connection
PT2030	Pathway to 2030
RIT	Revenue Indexation Adjustment Term
RPI	Retail Price Index
SME	Subject Matter Expert
STC	System Operator Transmission Owner Code
SQSS	Security and Quality of Supply Standards

[1] If the modification has an impact on Article 18 T&Cs, it will need to follow the process set out in Article 18 of the Electricity Balancing Regulation (EBR – EU Regulation 2017/2195) – the main aspect of this is that the modification will need to be consulted on for 1 month in the Code Administrator Consultation phase. N.B. This will also satisfy the requirements of the NCER process.

TDR	Transmission Demand Residual
TEC	Transmission Entry Capacity
TO	Transmission Owner
TOPI	Transmission Owner Price Index
TNUoS	Transmission Network Use of System

Reference material

- Ofgem's Consultation "Offshore Coordination – Early Opportunities: Consultation on our Minded-to Decision on Anticipatory Investment and Implementation of Policy Changes" published in April 2022
- Decision on Anticipatory Investment and Implementation of Policy Changes | Ofgem
- Decision on Pathway to 2030

Annexes

Annex	Information
Annex 1	Proposal form
Annex 2	Terms of Reference
Annex 3	Proposed process of AI Cost Gap Recovery
Annex 4	Workgroup consultation responses and summary
Annex 5	Legal Text
Annex 6	Workgroup vote
Annex 7	Workgroup attendance record
Annex 8	Code Administrator Consultation Non-confidential Responses