

**Capacity Remuneration Mechanism
2023/24 T-4 Capacity Auction Parameters
Consultation Paper SEM-19-023**

A Submission by EirGrid and SONI

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Contents

1	Executive Summary.....	2
2	Introduction	3
2.1	EirGrid and SONI.....	3
3	EirGrid and SONI Views on the Consultation Topics	4
3.1	Auction Format.....	4
3.2	Existing Capacity Price Cap	6

1 EXECUTIVE SUMMARY

EirGrid and SONI welcome the SEM Committee's consultation on the SEM 2023/24 T-4 Capacity Auction Parameters. These parameters are an important component of the overall Capacity Market design.

We welcome the publication of Consultation Paper SEM-19-023 and broadly agree with the proposed parameters. We note that the proposed parameters are largely unchanged from previous Capacity Auctions and are supportive of the continuity that is provided by this approach.

Beyond this we have concerns about the proposal to utilise Auction Format D for the 2023/24 T-4 Capacity Auction.

Based on our experience, it is likely that the level of complexity associated with the procurement/tendering, design, implementation and certification of an Auction Format D solution would require a delivery programme of approximately 18 months. This exceeds the time available to prepare for the 2023/24 T-4 Capacity Auction which is scheduled to take place in March 2020. For this reason, we do not believe it is possible to implement Auction Format D for the 2023/24 T-4 Capacity Auction.

Auction Format D is a complex implementation that requires expert resources in the TSOs, RAs, and Capacity Market Platform vendors and in certification of the Capacity Auction algorithm. The potential benefits may include auction outcomes with potentially higher Net Social Welfare; however, this would need to be considered against the costs, risks and complexity associated with implementing Auction Format D in place of the current Auction Format C (as utilised in the 2022/23 T-4 Capacity Auction). As outlined above, we believe that it is not possible to determine the potential benefits that may accrue in advance of the 2023/24 T-4 Capacity Auction nor is it in our view possible to implement Auction Format D in time for the 2023/24 T-4 Capacity Auction. Given this, we recommend that Auction Format D is not progressed at this time.

2 INTRODUCTION

2.1 EIRGRID AND SONI

EirGrid holds licences as independent electricity Transmission System Operator (TSO) and Market Operator (MO) in the wholesale trading system in Ireland, and is the owner of the System Operator Northern Ireland (SONI Ltd), the licensed TSO and MO in Northern Ireland. The Single Electricity Market Operator (SEMO) is part of the EirGrid Group, and operates the Single Electricity Market on the island of Ireland.

Both EirGrid, and its subsidiary SONI, have been certified by the European Commission as independent TSOs, and are licenced as the transmission system and market operators, for Ireland and Northern Ireland respectively. EirGrid also owns and operates the East West Interconnector, while SONI acts as Interconnector Administrator for both of the interconnectors that connect the island of Ireland and GB.

EirGrid and SONI, both as TSOs and MOs, are committed to delivering high quality services to all customers, including generators, suppliers and consumers across the high voltage electricity system and via the efficient operation of the wholesale power market. EirGrid and SONI therefore have a keen interest in ensuring that the market design is workable, will facilitate security of supply and compliance with the duties mandated to us and will provide the optimum outcome for customers.

EirGrid and SONI have duties under licence to advise the CRU and UR respectively on matters relating to the current and expected future reliability of the electricity supply. We have also been allocated responsibility for administering the Capacity Market Code through our TSO licences. This response is on behalf of EirGrid and SONI in their roles as TSOs and MO for Ireland and Northern Ireland, including as operators of the Capacity Market.

3 EIRGRID AND SONI VIEWS ON THE CONSULTATION TOPICS

In the following section, EirGrid and SONI provide their comments on the topics discussed in the consultation paper and put forward its views on the consultation paper proposals and questions.

3.1 AUCTION FORMAT

Currently (as of the recent 2022/23 T-4 Capacity Auctions), the TSO utilises Auction Format C.

Auction Format C utilises a heuristic approach which clears offers with the objective of maximising Net Social Welfare subject to constraints including Locational Capacity Constraints (LCCs). This is implemented in two stages.

In the first (price-setting) stage, all submitted offers are ranked in order of merit (i.e. in order of increasing price), identifying the price at which the Capacity Requirement (as specified by the Demand Curve prior to the Capacity Auction) can be achieved. This is known as the price setting stage. In-merit offers are not however automatically cleared, as adjustments may be required to satisfy LCCs.

In the second (constraint application) stage, adjustments are made to clear all offers necessary to achieve the Capacity Requirement, including both in-merit offers and, where necessary, out-of-merit offers required to satisfy LCCs. This is achieved by considering a limited number of inflexible offers above and below the price-setting offer, such that Net Social Welfare is maximised whilst satisfying LCC requirements. This limitation also ensures that the problem is tractable and can be solved within the Allowed Timeframe.

The Auction Format C approach serves to maximise Net Social Welfare, however may result in in-merit offers from the price setting stage not clearing where they are surplus to requirements as expressed in the Demand Curve.

Auction Format D utilises a Mixed Integer Programming (MIP) optimisation approach which clears offers with the objective of maximising Net Social Welfare subject to constraints including LCCs. This is implemented in two stages.

The first (price-setting) stage for Auction Format D is identical to the price-setting stage for Auction Format C, as described above.

The second (constraint application) stage of Auction Format D is then implemented. However, this stage differs from Auction Format C as it does not limit the number of inflexible offers to be considered above and below the price-setting offer when maximising Net Social Welfare subject to constraints.

While there is clear direction from the RAs regarding the move to Auction Format D, we suggest that the benefits of Auction Format D over Auction Format C may be outweighed by the associated costs & risks. An analysis to this effect is provided under key headings below.

3.1.1 NET SOCIAL WELFARE ANALYSIS

In seeking to maximise Net Social Welfare subject to constraints, Auction Format D has the advantage of considering an unlimited number of offers above and below the price-setting offer. Conversely, Auction Format C is limited to considering a relatively small number (typically 4-5 offers above and below price-setting offer) in this regard.

Auction Format D may therefore potentially achieve a more optimal solution than Auction Format C. MIP optimisation can find solutions that are optimal or more optimal (although this is not guaranteed in the timeframe) than the heuristic approach of Auction Format C.

Electricity customers in Ireland and Northern Ireland would benefit from a more optimal auction outcome, should this be achievable. These benefits arise from the reduction in Awarded Capacity that would need to be cleared in order to satisfy all constraints.

Based on estimates, the TSOs calculate the potential benefit to be of the order of a 0.1% improvement in Net Social Welfare. This is considered indicative of the potential Net Social Welfare increases achievable through the use of Auction Format D in future auctions; however, this depends very much on the offers submitted.

On this basis, there is a risk that any additional benefit accrued through the use of Auction Format D may be outweighed by the associated implementation and ongoing operational costs.

3.1.2 SOLUTION IMPLEMENTATION CONSIDERATIONS

Auction Format D is a complex implementation that requires expert resources in the TSOs, RAs, Capacity Market Platform vendors and in certification of the Capacity Auction algorithm. Based on our experience, it is likely that the implementation would take approximately 18 months, and possibly longer depending on whether a full tendering process would be required.

This timescale is sensitive to the complexity of the algorithm design, which would require significant engagement with the appointed vendor to develop. It may be possible to implement this in a shorter timescale based on a simpler design. Conversely, a more complex design would take longer to implement.

In any case, whether adopting a complex or simplified design, we do not believe it is possible to implement Auction Format D for the 2023/24 T-4 Capacity Auction which is scheduled to take place in March 2020.

3.1.3 INTUITIVENESS OF AUCTION OUTCOMES

The objective of each Capacity Auction is to maximise Net Social Welfare subject to satisfying all applicable constraints. In any given Capacity Auction under Auction Format C, it is expected that the vast majority of in-merit offers will clear. Due to the limited number of inflexible offers considered above and below the price-setting offer, in-merit offers typically only fail to clear when they are very close in price to the price-setting offer, these being displaced by out of merit offers needed to satisfy LCC requirements.

However, under Auction Format D, Participants with offers that are deeper in-merit that are not required to be cleared for LCC purposes may lose out. As such, considerations of the intuitiveness of the outcome and the perceptions of fairness are warranted.

3.2 EXISTING CAPACITY PRICE CAP

Section 4 (e) of the consultation paper states the following with regard to the Existing Capacity Price Cap (ECPC):

For the 2020/21 T-1 and 2021/22 T-2 capacity auctions, the ECPC was set again set at 0.5 times Net CONE = €46.15/de-rated kW. The SEM Committee is not proposing to amend the Existing Capacity Price Cap for the 2023/24 T-4 capacity auction.

However, in the Executive Summary, the consultation paper proposes an Existing Capacity Price Cap of “0.5 times Net CONE i.e. €92.30 / de-rated kW.”

We believe there is a typo in the Executive Summary and that the intention of the Regulatory Authorities is to set the EPCP to 0.5 times Net CONE = €46.15/de-rated kW, as per section 4 (e). We are in agreement with this approach and support the calculation of EPCP as 0.5 times Net CONE = €46.15/de-rated kW for the 2023/24 T-4 Capacity Auction.