



Consultation on System Services Future Arrangements High Level Design (SEM-21-069)

INTRODUCTION

Indaver welcomes the opportunity to respond to *System Services Future Arrangements High Level Design Consultation*.

Indaver provides waste treatment services to a significant municipal, commercial and industrial customer base and owns and operates a 17MW hybrid renewable waste-to-energy generator in Duleek, Co. Meath. This facility treats waste that cannot be prevented, reused or recycled and produces partly-renewable electricity. It is fully dispatchable and synchronous.

The waste treatment process and the technical design of the generator prefers 24-7 baseload operation at the capacity of the generator. Material periods operating at part load will eventually disrupt the processing of waste. Opportunities to increase the capacity of the facility are limited, not least by the potential loss of Priority Dispatch under Article 12 of EU/2019/943 that would arise.

While Indaver will have interest in providing services which can be provided from a baseload energy position (voltage, stability, inertial products), Indaver does not see itself participating materially within the reserve / balancing capacity markets.

In terms of prospective developments, Indaver has two additional facilities in the permitting and planning process. It also is considering additional demand processes on its operational generation site to utilise self-consumed electricity. These demand processes may be able to provide considerable levels of low-carbon system services, in particular the reserve / balancing capacity services.

In terms of wider scale in the market, Indaver is not alone in considering such matters. We note

- [Mod 07 21](#) raised by Aughinish Alumina, which seeks to unlock some of the value of such non-aggregated flexible demand, which references hydrogen electrolysis in particular.
- EirGrid, in its recent development of data centre connection policy papers of [June 2019](#) and [July 2020](#), has also released an information note on Flexible Demand for Data Centre customers in [March 2021](#).

The focus of our response is to:

- **Support** that smaller providers can provide system services, in particular those connected to the distribution system;
 - This requires the DSOs / DNOs to assess the existing capability of the network and take the quick wins early. Completion of the nodal controller project, allowing larger generator-only distribution connections participate in reactive power projects, should

be prioritised ahead of the ongoing work around the digitisation and hour-to-hour visibility of the market.

- It may require new forms of aggregation, to allow providers with smaller resources pool their capability to be offered to the system services market. Care is needed with such pooling arrangements, to ensure it is effectively restricted by – for example – for all aggregated parties to share an energy trading partner.
- **Support** layered procurement, noting that investment in low carbon (or energy sunk sources of system services such as demand response) will be necessary and that this may require appropriate contracts of investible tenure and value where carbon-intensive forms of generation continue to participate in the same system services market.
 - It is important that carbon intensive sources of system services cannot sink that cost of carbon into the energy market, and artificially lower the price in the system services market accordingly.
- **Query** whether new products, such as downwards regulation of generation / increased consumption of demand, will be procured as a system service, or whether new as-yet unknown stability products beyond FPFPR and DRR will be required?
- **Query** where energy opportunity costs are taken into account in the commitment and delivery of system services? This area we have found the most challenging to understand in terms of the High Level Proposals on offer. The Single Electricity Market currently provides different rights and obligations on various participants in achieving an energy position. Demand, priority dispatch generation (variable and predictable), aggregated demand, storage and conventional generation are all different, despite all operating in the same energy market. The rules for variable renewable generation without priority dispatch are not known, being subject to the delivery of the Clean Energy Package.
 - Related to this is whether energy cost (either or both of the cost to move to be available to deliver the system service “commitment cost”, and the subsequent cost to deliver the service when called “delivery cost”) will be taken into account by the TSO in the clearing of the system services market.
 - It appears that this commitment energy cost (at least) might be internalised into the system services offers by the participant prior to submission of the Final Physical Notification¹.
 - Given the delivery cost of system services are proposed to be based on standard INC/DEC offers in the balancing market, care must be taken should system services prices crash, with high activation fees (even if regulated under the BMPCOP).
 - Presumably, the energy cost of commitment and delivery must be taken into account for any system services auction which occurs after the FPN has been submitted? This was not clear from the description of the ex post option, which stated that the timing of submission of offers for system services was a detailed design issue, and it was unclear when and if it would be taken into account in the TSOs dispatch.

¹ If required to be submitted by a market participant, and for those that need to submit a Final Physical Notification (FPN) noting that the FPN should be linked to an ex ante trade for some, but not all, providers.

- **Support** the importance of stability in the new arrangements, but **query** whether that is a realistic goal without understanding the direction of travel of the energy market, and unavoidable fundamental changes which might occur, between now and 2030. The three different options hinge on:
 - How early the TSO needs to see system services capability in order to dispatch the system securely and efficiently? Indeed, while day-ahead procurement would at first glance appear to be the most efficient, the TSO itself might not know how much (or whether) FFR, FPFARP, etc. is required until close to real time. Early procurement also excludes more variable providers, which are considered to be integral to the decarbonisation agenda.
 - Who has the obligation to manage their commitment, and what opportunities exist? This can materially change with any new rules around FPNs, self-commitment, etc., all of which might become necessary as the number of price competing renewables increase in the market.

- **Request** that the Regulatory Authorities workshop or impact assess their options across the providers of system services, including new proposed technologies.

In terms of evaluation of the options:

- The pre-DAM options requires generators to assess potential energy market revenues when submitting their offer.
- The post DAM option, if the commitment decisions are sunk in the energy market, could result in system services being most readily provided by those who happen to have already achieved their energy position, at zero incremental cost.
- The ex post option, could in theory with a highly constrained auction have the TSO assess commitment and delivery cost in its real-time dispatch (assuming it has both energy and system services offers ahead of real-time).

In short, Indaver, in the absence of knowing what products are being procured, cannot recommend a particular option, but currently believes the pre-DAM and ex-post options potentially hold the best opportunity for an entity to consider the commitment and delivery costs in the price formation of system services.

Our detailed responses to the questions are given below. Our response is not confidential and may be published in full.

1. Introduction

Question 1: Do stakeholders consider that the commitment to putting these arrangements in place on an enduring basis, at least to 2030, represents sufficient certainty of process?

Response: Indaver supports the commitment and intent for stability of the new system services regime, and ideally this would last beyond 2030, but query whether that goal is realistic given the potential changes in the energy market over that time period.

2. Governance Arrangements

Question 2: What are stakeholders views on the options and recommendations presented for qualification/registration? Are there further options that may be considered?

Response: Indaver agrees with the proposals in the paper, but wants clarity on the entry and exit criteria of the registration period, and what service level for any testing will be provided within that period.

Question 3: What are stakeholders views on the proposed formalisation of the QTP?

Response: There is a trend of increasingly procedural call for evidences and consultations in the market, for example, on annual market parameters for the energy and capacity market, scopes of audits, and so forth. The volume of consultation work rarely is matched with any real desire or need for change, and requires resources to produce, approve, analyse, respond and produce a decision.

We have no issue with the increased formalisation as long as there are resources to manage the process, but suggest that it be reviewed to see where decisions (budgetary, scope) are actually required, and limit formal industry engagement to those decision points.

Question 4: What are stakeholders views in terms of the introduction of a single System Services Code?

Question 5: What are stakeholders views on the options in terms of governance of rules changes?

Question 6: Do stakeholders have views on the potential to amalgamate different Panel meetings?

Response: Indaver supports formalisation of the SSFA into a single Code, but notes that we need to understand its legal structure (what is the contractual mechanism to sign up and be paid) and what its scope entails, i.e. does it include the registration and QTP processes.

Indaver agrees that a Panel governance structure in line with the T&SC Modification Committee is appropriate, as it meets a required level of transparency for external members without the overhead of the capacity market consultation process.

We believe that amalgamating panels could be unwieldy in terms of managing resources across areas of interaction, and areas which are solely related to a single contract.

Interactions should be captured through agenda items (for example, as Smart Metering progress was updated at the standard retail Industry Governance Group).

Indaver does suggest, however, that there is a need for a standing central design group with industry/representative body input to keep the incremental changes happening across connection policy, market power, system services, capacity market, energy market, use-of-system charges “within the rails” of a functional market design during both transition and steady-state of decarbonisation.

Question 7: What are stakeholders views on the funding arrangement proposals?

Response: On the assumption that there will be a greater need for some new system services (FFR, FPFAPR, DRP, etc.) during periods of high renewables, the signal sent to demand customers appears to reduce consumption during these periods with higher demand charges. Indaver questions as to whether this is the appropriate signal.

Indaver believes that some form of flat charge for system services is appropriate.

Question 8: What level of involvement should the DSO/DNO have in the governance process?

Question 9: How should the interactions with distribution connected parties be governed?

Response: Indaver believes that the DSO/DNO should be present at any system services meeting. Most importantly, as they will act as the gatekeeper to many forms of system services participation across their distribution networks, it is important that they are incentivised to open up participation where possible under their incentive frameworks (i.e. under PR5, as commencing under the Local Connection programme of work).

Interactions with the distribution connected parties should be directly with the TSO, with the DSO/DNO acting as a “condition precedent” for participation. We support the increased dynamic interaction proposed by the DSOs during the second workshop, but note that given its complexity this should not delay the programme and should not distract from any “quick wins” to deliver system services.

Question 10: Are there any further considerations for the High Level Design of the Governance Arrangements?

Response: No further comments.

3. Auction Design

Question 11: What are stakeholders views on the Auction Design options and SEMC Recommendation?

Question 12: Are there any further considerations in terms of the Auction Design options?

Response: Indaver does not necessarily agree with the SEM Committee recommendation of the post DAM option. We believe this recommendation appears to be focussed on resolving the issue of the risk of meeting commitment obligations from providers, bound by the limitations of the current dispatch and scheduling processes. (We realise these dispatch and scheduling processes will face material work to integrate or adapt to large numbers of variable non-priority dispatch renewables in future).

The consequence of the SEM Committee's recommendation is that as the primary market with most liquidity has passed, the commitment cost of system services for those providers able to deliver system services appears to be lost in any procurement of system services in – what appears to be – a single unconstrained auction.

A pre-DAM market appears to allow market participants estimate the benefit of being an energy **or** system services provider (potentially on an unconstrained basis). Deviation from that unconstrained procurement of system services would come at a measurable cost for the TSO and consumer, and incentives can be placed on the TSO to reduce such constraints on the procurement of system services, e.g. the TSO could contract with synchronous compensators allowing non-synchronous sources to completely provide all operational reserves.

The ex post option (assuming offers for system services are provided in advance of balancing market gate closure) appears to allow the TSO to optimise across energy and system services, and to identify the reserve providers who actually meet system constraints ex post. Again, there is a signal for the TSO to take actions to reduce dispatch balancing costs.

All markets need review with EBGL post-Celtic compatibility, i.e. within the context of these potentially unconstrained or ex post auctions, how to identify deliverable cross-border balancing capacity is going to be a challenge integrating a central dispatch market with self-dispatch regimes elsewhere.

4. Market Design

Question 13: What information is required to get a full view of the volumes requirements for System Services?

Response: In all other markets (energy, capacity) there is wealth of information regarding technical offer data, commercial offer data, de-rating factors, etc. It is possible to evaluate the supply side competition. In contrast, in the system services market only information on the total procured volumes, the total spend, and what contracts with what providers have been signed. We suggest that information about the level of service being provided by each provider should be published.

Despite the TSO's assertions at the second SSFA workshop that there was sufficient information in the public domain as the required level of system services, FFR is still not scheduled in the market, operational reserves despite the increased level of renewables is solely procured around the loss of the largest infeed, the ramping products are only being integrated into the long-term schedule and the remaining system services for FPFAPR and DRP are not yet procured. We do not know whether the paradigms will change as we move to full decarbonisation, e.g. whether as the minimum number of generation sets rule gets relaxed, the rules around reserves will change?

We need information to be included as to the evolving operational needs of the system within the Generation Capacity Statement, even if the need for system services will remain no more complex than they are today and that the existing services need to be procured from decarbonised providers.

Question 14: What are stakeholders views on the development of Secondary Trading of System Services?

Response: This is only of relevance for Option 1 and Option 2. The introduction of secondary trading will be happening concurrently with possible TSO actions to ensure the procured system services at the DAM timeframe are technically sufficient (either due to having an unconstrained auction for services, or the TSO improving on its system services requirement forecasts closer to real-time).

This appears very complicated, and runs a material risk of project descopeing to meet timelines.

If the goal is to increase participation from variable renewables and demand side closer to real-time, it is unlikely that secondary trading will facilitate much more than a safety net for market participants who cannot meet their DAM obligations closer to real time.

Question 15: What are stakeholders views on the proposals regarding Commitment Obligations and Scalars?

Response: Again, this is only of relevance for Option 1 and Option 2. We agree with the principle that “winning” a system services auction should come with commitment obligations, and that should come with some form of enforcement obligation.

We do query why the potential cost of activation of reserves is not taken into account in the selection of the auction winners.

We also note that the ex ante procurement of system services sits (irrespective of the option) somewhat uncomfortable with a central dispatch market.

Question 16: Do Stakeholders have views on the introduction of the concept of Firm Access to the System Services market?

Response: Again, this is only of relevance for Option 1 and Option 2, and effectively appears to be a mechanism to not pay auction winners under certain circumstances. It is completely uncertain how firm access is to be determined and allocated, and appears to be a material erosion of the value of pricing signal of system services more generally.

Before discussing concepts of firm access, it is necessary to discuss:

- The technical capability of different providers to meet the system need
- Whether those technical limitations are possible to resolve, and what is the reasonable timeframe for that to occur.
- The incentives on the TSO to resolve those issues.
- Whether the procurement of system services is constrained in the first place.

Non-firm access makes sense as a temporary customer protection to not pay for services which cannot be utilised until the TSO takes steps (transmission line build, sufficient inertia/magnetism to have non-synchronous sources provide all reserves) to remove those limitations.

The equivalent concept in the energy market creates high levels of uncertainty around investments, particularly when the non-firm access period is open-ended. As a result, Indaver cannot support the concept of non-firm access to system services markets unless the period of non-firm access is time-limited.

Question 17: Do stakeholders have views on layered procurement of System Services? What approach could be taken to support this?

Response: We support continued procurement via bilateral contracts where necessary in line with the criteria presented in the paper.

Those criteria will need some form of objective quantification metrics in order to justify moving away from the default Clean Energy Package requirements.

No budgetary caps should apply to these layered procurement of services, if prices are set competitively.

Question 18: Are there any further considerations in terms of Market Design?

Response: Indaver requests:

- That high level obligations to manage market power are addressed as part of the auction timing choice, as it can have material impacts as to its workability. For example, bidding price controls, mandatory participation, all can materially change the levels of risk in participation in the ex ante auctions in particular, which come with commitment obligations.
- The decision needs to determine whether upwards and downwards balancing capacity will be procured, in line with the EBGL.
- If the scarcity scalar is to be removed, consideration of a “decarbonised” scalar should be considered to incentivise providers capable of being available for system services without displacing renewable / low carbon sources.
- Any successful auction winner should be exempted from Difference Payments under the CRM.