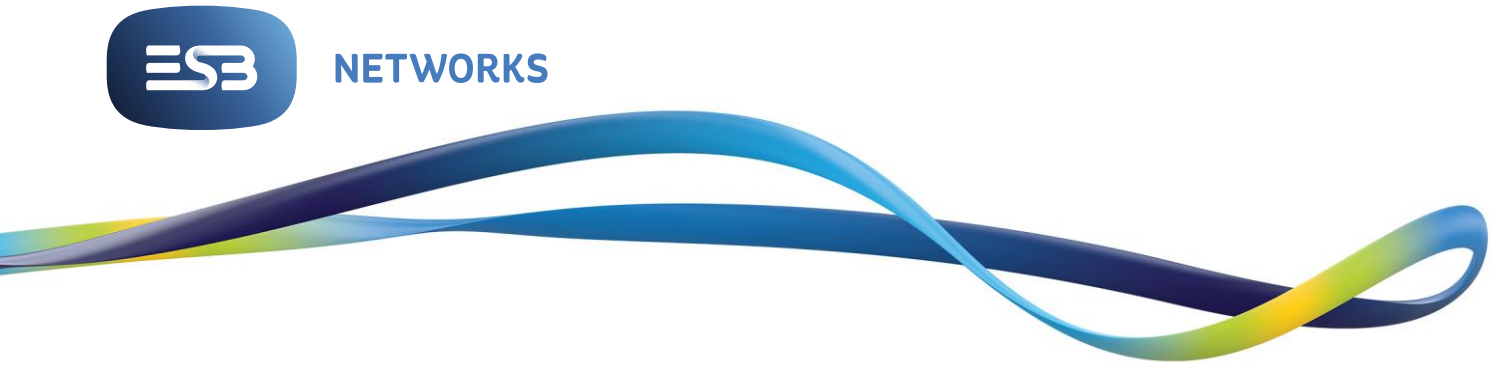

SYSTEM SERVICES FUTURE ARRANGEMENTS HIGH LEVEL DESIGN

ESB Networks Response to Consultation

SEM-21-069

21st October 2021

Contents

1. Introduction

ESB Networks welcomes this opportunity to respond to the SEM Committee consultation on the System Services Future Arrangements High Level Design (SEM-21-069). The energy industry is undergoing significant transformation, to meet the needs of climate mitigation and adaptation, as set out in policies and legislation. The Future Arrangements process has an important role in building on the sustained commitment made to decarbonising electricity generation in the single electricity market over the past two decades.

ESB Networks meets the needs of all electricity customers, by providing universal affordable access to the electricity system, and delivering and managing the performance of a system of almost 155,000 km of overhead networks; 23,000 km of underground cables; 640 high voltage substations; significant amounts of connected generation, including 4.75 GW of renewable generation connected to the distribution and transmission systems; 2.4 million demand customers; and now several thousand “active customers” – domestic premises with microgeneration, a rapidly increasing number.

ESB Networks is committed to the delivery of our collective decarbonisation and renewable energy targets. The introduction of system services arrangement at both transmission and distribution level will be central to this. Well-designed system services arrangements should seek to maximise the degree to which low carbon generation can be matched by low carbon demand, in a secure, and efficient manner.

As part of a separately governed process, ESB Networks is in the process of developing proposals and pilots for distribution system services. As set out previously, based on a review of the relevant legislation and the role of the SEM Committee in this consultation, ESB Networks believes that the Future Arrangements process addresses system services needed to meet transmission system needs, including the participation of distribution system customers’ participation and the role of the Distribution System Operator (DSO) in enabling this. It is not intended to address distribution system services, which are being developed is part of a separate process. Notwithstanding this, the frameworks for system services for transmission and distribution respectively can each be designed in a manner which would enable separate but operationally compatible arrangements.

ESB Networks’ response is structured as follows:

- Setting out the principles underpinning this response
- DSO Role in the Future Arrangements Process
- Responding to Section 3.1 - 3.5 – Governance and Distribution System Interactions
- Responding to Section 4.-5 – Auction Design and Market Design

Responses are only provided to questions which directly relate to the role of the DSO in the process or where the DSO can offer particular insights which may be of value.

2. Principles

Enabling a system services market design that serves all stakeholders is paramount. Both local and whole system operations over the coming decade will become increasingly complex, and system services will play a central role in a secure and economic system operation. This will be delivered increasingly by providers who are not providers today – distributed demand, generation communities and new technologies. ESB Networks' is committed to contributing to the process in a manner that supports the active participation of new technologies, investor certainty and delivering best value for the customer.

Technical Provisions or "Modalities" for Distribution Interactions

ESB Networks' role as DSO, with respect to transmission system services is to develop technical provisions (or "modalities") enabling the participation of distribution system customers. This will be essential to reducing barriers to entry for smaller and newer technologies and customers. The modalities enabling their participation must be built into the design and operations of system services over the lifecycle of system services provision.

The technical provisions or modalities will include:

- Information exchange at the time of provider registration
- Information exchange at the time of provider qualification
- Information exchange when a provider registers or changes assets within its portfolio
- Technical requirements covering the qualification of participants for services
- Confirmation of appropriate network access rights to provide services
- Allocation of local capacity to providers (in line with bidding, auction and scheduling processes)
- Coordinated dispatch and redispatch arrangements
- Monitoring and compliance management

For the avoidance of doubt, the objective and role of these modalities is to support the delivery of services to the Transmission System Operator (TSO), within a contract between the TSO and the provider, in a manner which respects and leverages local network capacity.

DSO Objectives in this response

ESB Networks' response has been developed with a view to:

- providing a level playing field for distribution system users' participation in system services, in a manner that reflects local system security and underlying usage;
- maximising the role and participation of new and existing technologies in future system services arrangements, so as to deliver the best value for customers;
- protecting all distribution system users, by ensuring its continued safe and reliable operation; deliver the greatest possible level of certainty to distribution connected service providers, by providing for the lowest possible level of constraint
- delivering the greatest potential resource, and the greatest level of certainty to the TSO, by allowing for the DSO to redispatch, in coordination with the TSO, if unexpected distribution system conditions arise;
- providing for transitional arrangements which can be implemented relatively quickly, by leveraging distribution system control capabilities which are available today, and which can be adapted on an incremental basis as new systems capabilities become available;
- readily providing for progressive increases in the degree of operational accuracy, and risk, that can reasonably be adopted on the distribution system, with a view to further reducing constraint levels over time;
- readily providing for separate but operationally compatible distribution system services arrangements over the coming years, offering greater potential for efficient system operation and a liquid services market, delivering value both for customers and market participants.

3. DSO Role in the Future Arrangements Process

As set out above, the role of the DSO in the Future Arrangements is to develop technical provisions (or "modalities") enabling the safe and effective participation of distribution system customers. Careful consideration of the relevant legislative framework has been taken when developing ESB Networks proposal as set out in this document, and when considering the scope of this Future Arrangements Process, including

- the Internal Market Directive 2019/944 of the Clean Energy Package
- the Internal Market Regulation 2019/943 of the Clean Energy Package
- the System Operational Guideline 2017/1485 of the EU Network Codes
- the Energy Balancing Guideline 2017/2195 of the EU Network Codes

The Clean Energy Package[1] outlines various requirements for the DSO. These include firstly, the DSO's responsibility for operating, maintaining and developing under economic conditions a secure, reliable and efficient electricity distribution system with due regard for the environment and energy efficiency[2]. ESB Networks' response to this document has been guided by this responsibility (as reflected in its DSO licence) in particular, and by the provisions of European legislation [3] with regard to enabling distribution connected users, including in particular demand response through aggregation and energy communities participate in all markets, working in cooperation with the TSO, regulatory authorities and industry. This includes, in particular, responsibilities with regard to the development of technical requirements and specifications, and information exchange.

As relates to transmission system services, in order to make distribution system users' participation in such services possible, in a secure manner and without causing harm or damage to the system, the DSO must be at the heart of designing and operating the new arrangements. This requirement is reflected in the EU legislation[4], including the provisions referenced above, and applies both to qualification and operational processes.

ESB Networks is committed to releasing services from the distribution system, to the greatest degree possible. To do this, distribution system users' participation must be supported as an integrated

[1] in particular Regulation EC 2019/943 and Directive 2019/944/EU
[2] Art. 31 (1) of 2019/944.
[3] In particular Articles 16, 17 (2), 17 (5), 31 (9), and 40 (5) of Directive 2019/944/EU
[4] for example Art. 31 (1) of 2019/944

aspect of distribution system operation. The assumptions that underpinned the historical development and design of the distribution system, in particular at lower voltage levels, would not have considered the development of system services and broad participation of distribution system customers which are projected over the coming years.

These developments will require local management of the system to assure reliability of supply to all customers and communities as well as reinforcement over the coming years for which ESB Networks is currently progressing in its PR5 work programme.

Little headroom was required to cater for coincident behaviour in traditional network connections design. To enable the degree of coincidence associated with the delivery of system services from the local level, localised analysis and optimisation is needed, near to operational time frames, to maximise distribution system users' access to the system services market. Some level of constraint is inevitable; however we will seek to minimise this, notwithstanding the right of the DSO to constrain participating units as provided for in the System Operation Guideline[5], with respect to both qualification and activation processes.

In this context, we are concerned that it is not set out clearly in SEM-21-069 that DSO interactions will arise well beyond the qualification and consenting stages. More dynamic procurement arrangements will necessitate DSO interactions as part of day to day market operations, so that local capacity can be accounted for throughout the scheduling, dispatch and re-dispatch processes in day ahead and within day timeframes.

[5] Article 182 (4) and (5) of 2017/1485

4. Governance and DSO Interactions (Sections 3.1-3.5)

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

Qualification/Registration Arrangements

ESB Networks is supportive of the SEMC's proposals with regard to the introduction of a rolling application process. In the design of this process it will be important to ensure that the measures in place support the access of distribution system users. Appropriate data exchange, ensuring that distribution connected assets can be identified individually or as part of a given aggregated unit and associated with a given market participant, will support more efficient, effective facilitation of their market participation.

We note that the current application, registration and qualification arrangements were developed from the perspective of the transmission system (as was appropriate at that time) and thus reflect the characteristics of larger, transmission connected services providers. Close collaboration between the DSOs and TSOs will be needed to ensure that the future system services arrangements reflect the operating context of smaller, distributed providers (including aggregators of small distribution connected providers).

DSO Interactions

Without substantial changes to the processes relating to distribution system users' participation, the volume of services which can be delivered from the distribution system will necessarily remain lower than could otherwise be the case. In our view, this would not be compatible with the intention or requirements of the legislation which provides for a level playing field for market participants, including distribution system connected participants, as set out in the Energy Balancing Guideline[6]

Processes for distribution system users' participation should be introduced in a manner designed from the outset to achieve these objectives in the long term, while enabling significant progress towards distribution system users' participation in the short term. Access to all customers for all organised markets needs to be considered in the context of effectiveness and efficiency of their participation. The qualification principles and processes may vary somewhat for different products. For example, all resources may be equally effective in providing balancing capacity services,

[6] Recital 8 of the Energy Balancing Guideline, which sets out the need for adequate competition based on a level-playing field between market participants, including demand-response aggregators and assets located at the distribution level.

irrespective of their location, but will have varying localised impacts. However, the effectiveness and efficiency of distribution connected resources participation in other products such as reactive power, short circuit power and other non-frequency products, may be highly locational and specific to their connection method.

When reading SEM-21-069, it is unclear whether the processes for managing DSO interaction set out (for example provider led, DSO led, etc) are intended to apply only to the offline / upfront qualification processes, or to apply throughout the lifecycle of services participation (i.e. application, qualification, registration, bidding, scheduling and dispatch). For the avoidance of doubt, it is important to emphasise that DSO interactions will be needed throughout the lifecycle of services participation, to maximise the participation of distribution connected resources.

Notwithstanding that point of clarification, we believe that a more nuanced approach to distribution system interactions than the “DSO led”, “TSO led” and “provider led” models may be necessary and appropriate. ESB Networks does not consider that the DSO should be involved in the ***commercial*** relationship between the TSO and the provider, however it is critical that the DSO has a direct ***operational*** relationship with the provider.

A simple TSO-led model of the manner set out in SEM-21-069 for DSO interactions has proven ineffective to date, and we do not consider this viable into the future. The DSO is accountable under licence and legal provisions for the safe, secure and efficient management of the distribution system, which will be affected by the actions of the provider. The remove between DSO and distribution system user contributes to the need for wide risk margins.

As an ancillary point, the data exchange required between DSO and provider substantially exceeds the details which ESB Networks understands the TSO to require (for example MPRN level data exchange and capacity allocation). As such, operating through the TSO as an intermediary will create risks with regard to data privacy and security over time.

Over the coming years the number of distribution system customers participating as flexible service providers in localised services on the distribution system will increase markedly. A TSO led process which circumvents operational interfaces between the DSO and flexible distribution system assets for those same providers’ participation in transmission system services would be inefficient. It would likely require more substantial systems investments for providers, the DSO and the TSO.

In summary, the greater the degree to which the DSO is involved in all stages of the market participation of distribution connected service providers,

- the greater the access which can be provided for system services delivery from the distribution system, and
- the more readily processes for new and emerging technologies can be streamlined and aligned with the processes which will in future apply for the provision of distribution system services.

We believe this will be an important aspect of providing for increased levels of participation in all markets.

Registration

There is a need for close co-ordination and data exchange between the DSO and TSO over the course of the lifecycle of a system services auction process while respecting the nature of the commercial arrangement is principally between the service provider and the TSO.

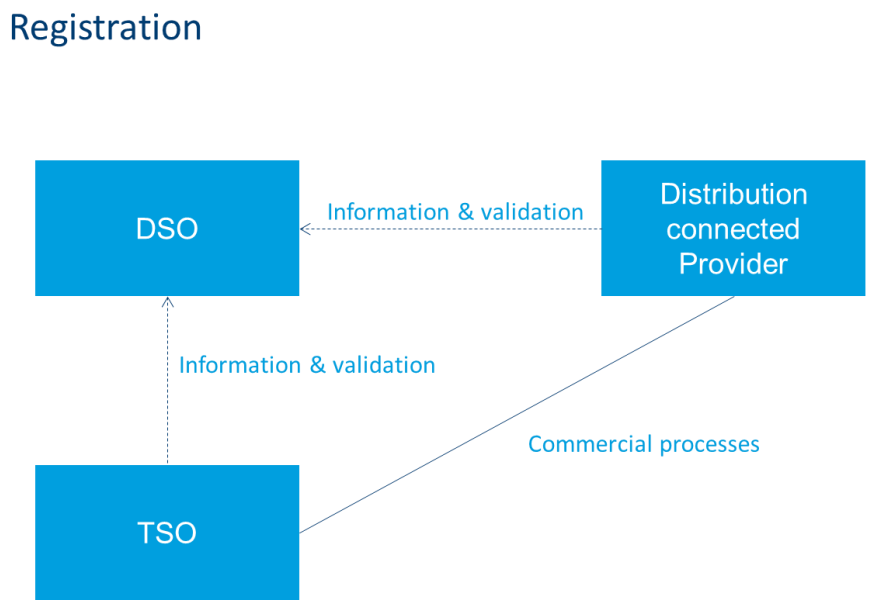

FIGURE 1 REGISTRATION PHASE

At the point of registration, where a distribution connection customer or aggregator indicates their interest to provide services to the TSO, this is primarily a process between the customer and the TSO. Information exchange between the TSO and DSO may enable the DSO to begin to reflect these participants in distribution management systems, but the information required by the DSO will exceed that required by the TSO. As such, direct DSO-provider data exchange will likely be required (either at the registration or qualification stage).

The structure of aggregated units and data exchange necessary to disaggregate and ensure distribution system security is maintained will need careful consideration in the detailed design phase. A given customer may look to participate in multiple services or multiple markets, either directly or through an aggregator. However, it is not necessarily the case that the customer would engage in multiple markets through the same aggregator – they may be registered with multiple aggregators for different activities. It is also not certain whether an aggregator would register customers into the same units in these different markets. As such, these variants should be considered in designing registration processes.

Customer confidentiality will need to be respected. Information exchanged between the TSO and DSO should only be to the extent required to allow each organisation to undertake its role and support the other party's role. Where the information required by one party exceeds the other party's requirements and vice versa, it may not be appropriate that this data is exchanged or managed by the party which does not require a given data point.

Appropriate resourcing will be put in place within ESB Networks to support the interaction processes associated with the future arrangements, including registration, qualification, and the necessary operational processes including capacity allocation, subject to regulated cost recovery.

Qualification

To qualify and test the system service capability for customers there will be a need for co-ordination with the DSO to ensure that the planned test procedures can be securely accommodated on the distribution system. It may be necessary to perform advance studies, develop bespoke test schedules or schedule testing procedures in a manner designed to avoid unsafe or insecure operating conditions during testing.

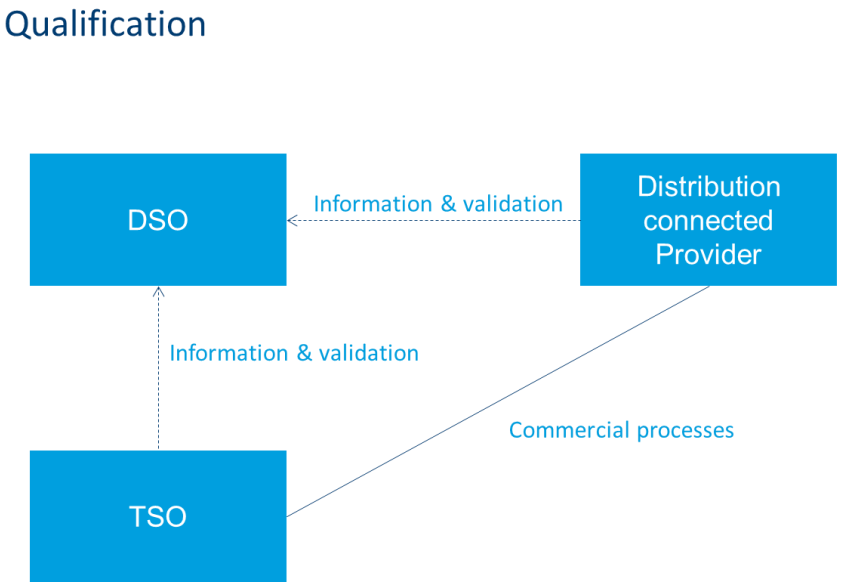

FIGURE 2: QUALIFICATION PHASE

Other Relevant Distribution Interactions

As set out in the next section, DSO interactions will need to span the lifecycle of services operation. This will necessarily involve operational interactions with providers and the TSO in a day ahead and intraday timeframe.

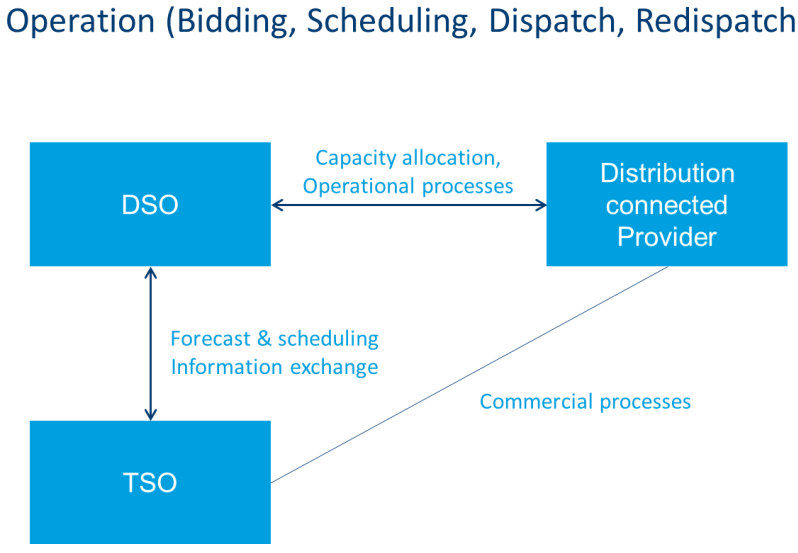

FIGURE 3: BIDDING SCHEDULING, DISPATCH & REDISPATCH

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

QTP

ESB Networks welcome the consultation with stakeholders on the QTP process and will continue to work with the TSO to facilitate new technology trials for distribution connected customers. It will continue to be important that the DSO is involved In the design of trials and proposals involving distribution connected customers to ensure the trials consider distribution operational requirements and leverage the insight the DSO can bring to add value and maximise the learning objectives of trials.

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

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?

Governance

SEM-21-069 sets out options for governance of modifications to the services market rules and the roles of the TSO and market participants in this. However, it is silent on how the technical measures enabling the participation of distributed resources will be accounted for as market rules evolve over time.

ESB Networks' proposal in this regard is that the DSO would not be represented as a member of a Services Code Panel – that is a forum for the TSO and providers, the parties to the system services contracts in question. Rather, ESB Networks proposes that to ensure that distributed resources, demand, storage and generation are not disadvantaged,

- the DSOs would participate in the Services Panel as an observer and an independent expert
- the DSOs would be directly accountable to the SEMC on an ongoing basis for technical provisions enabling the participation of distributed resources in new developments recommended by the panel.

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

Panels

While the operations of the Grid Code, Trading and Settlement Code and a future System Services Codes are beyond the remit of the DSO, we would question whether this could give rise to cumbersome and inefficient processes given the breadth and diversity of issues addressed at the different forums? For the avoidance of doubt, ESB Networks considers that it would prove highly ineffective and inefficient to seek to amalgamate the Distribution Code Panel, for example, with the forums set out above.

5. Auction Design & Market 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?

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

Auction Stage

ESB Networks notes the design options set out in SEM-21-069. Processes for enabling the participation of distribution connected providers, could be put in place to support any of the design auctions. Our primary concern is that the discourse of the options failed to identify the need for distribution interactions in either day ahead or intraday market operations. If this were the case in the design which is realised, the potential resource delivered by distribution connected users would be significantly reduced. We do not consider this an outcome that either providers or the SEMC would consider favourable.

Any proposal which does not involve active DSO interactions at the bidding, scheduling and dispatch phases will result in substantially greater and unnecessary restriction of providers participation. This is because an earlier “consent” (from DSO to provider) would place an onus on the DSO to apply greater risk margins and thus allocate lower volumes of distribution network capacity to providers. If “consent” were provided on a static, annual basis (or on a rolling basis but with a given consent being applied for a sustained period) then the consent could only apply to a small volume of an asset’s potential capacity in many instances. ESB Networks does not believe that this is consistent with the SEMC’s objectives.

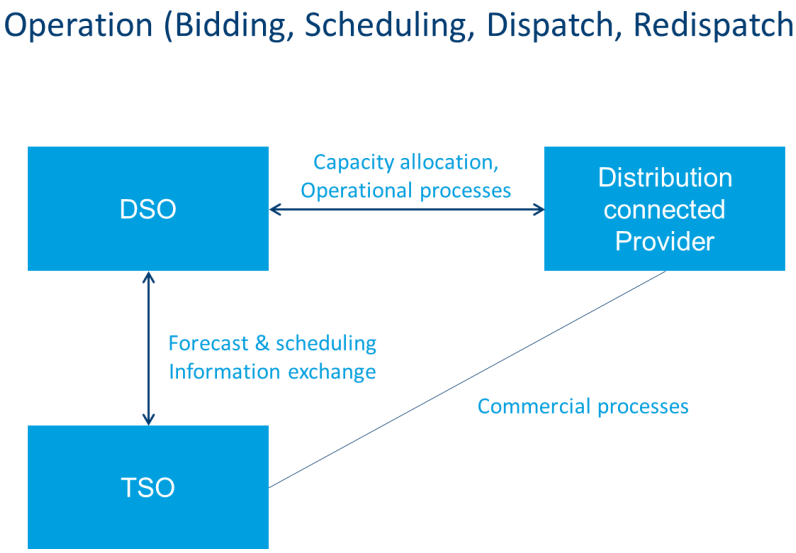

FIGURE 4: BIDDING SCHEDULING DISPATCH & REDISPATCH

The allocation of capacity on the distribution system will in most cases be an asset-specific allocation, which accounts for the electrical locations of different assets. By allocating an asset-specific operating envelope to each provider's assets, the DSO can safeguard local operating conditions, while maximising the allocation of network capacity to support services participation. The degree to which any individual distribution connected asset is constrained will be a function of other local assets' behaviour (demand, storage and generation) and dispatch. As such, the closer to real time that the DSO allocates distribution network capacity, the greater the confidence the DSO can operate to when allocating capacity and the closer this can represent the economic merit order.

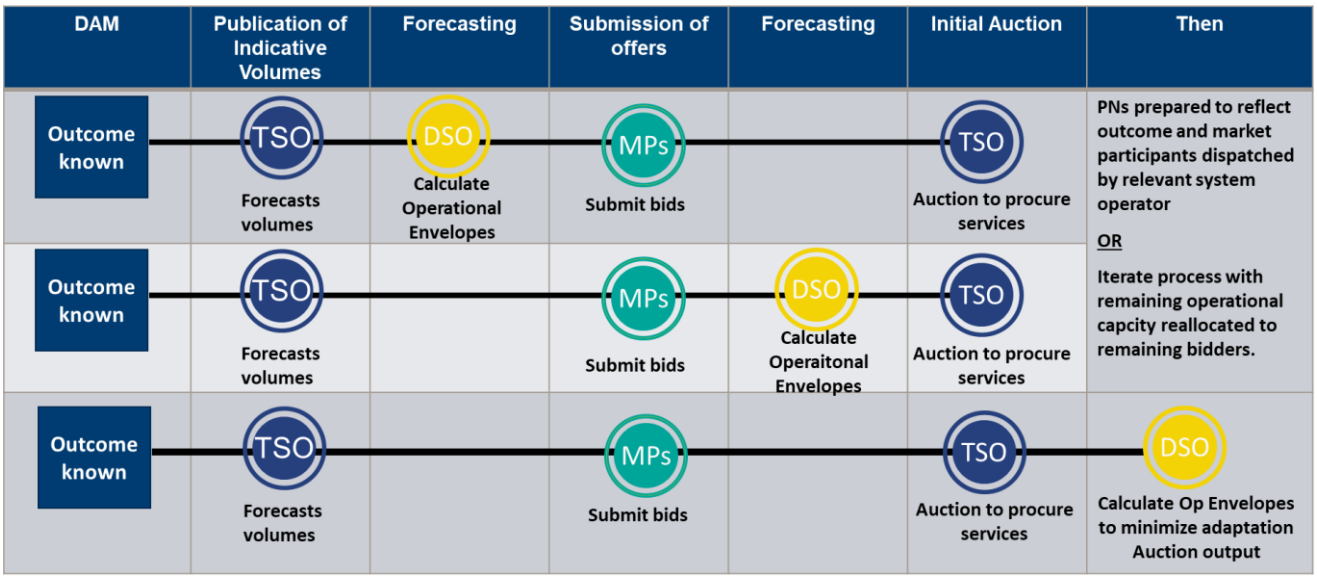

FIGURE 5 THREE OPTIONS FOR DSO INTERACTION AT THE AUCTION PHASE

To achieve this there are a number of potential options including the allocation of capacity by the DSO immediately pre- bid submission, following bid submission, or following the auction. For illustrative purposes, approaches aligned with the SEMC Committee's proposed Option 1 (Post DAM Day ahead system services auctions) are illustrated above. In the options set out in Figure 5:

- Allocation of local capacity prior to the submission of bids (top swim lane) would offer providers certainty at the earliest point in the process. However as capacity is allocated without foresight of which providers are seeking to participate in a given auction window, it would result in lower levels of capacity being allocated to the relevant providers;
- Allocation of local capacity following (and with sight of) bid submission (middle swim lane) would offer certainty prior to the auction process, and would allow for more efficient (and thus greater) allocation of capacity. However, its effectiveness would be premised on sharing bid data with the DSO (volumes and potentially pricing).
- Allocation of local capacity following (and with sight of) the auction outcome would offer the least transparency and certainty to the TSO and providers until late in the process. However, by allocating capacity post auction or as part of the clearing process, the volumes of cleared energy and reserve would be known at a participant level and an allocation which best reflects the economic merit order is possible. This is illustrated in more detail below.

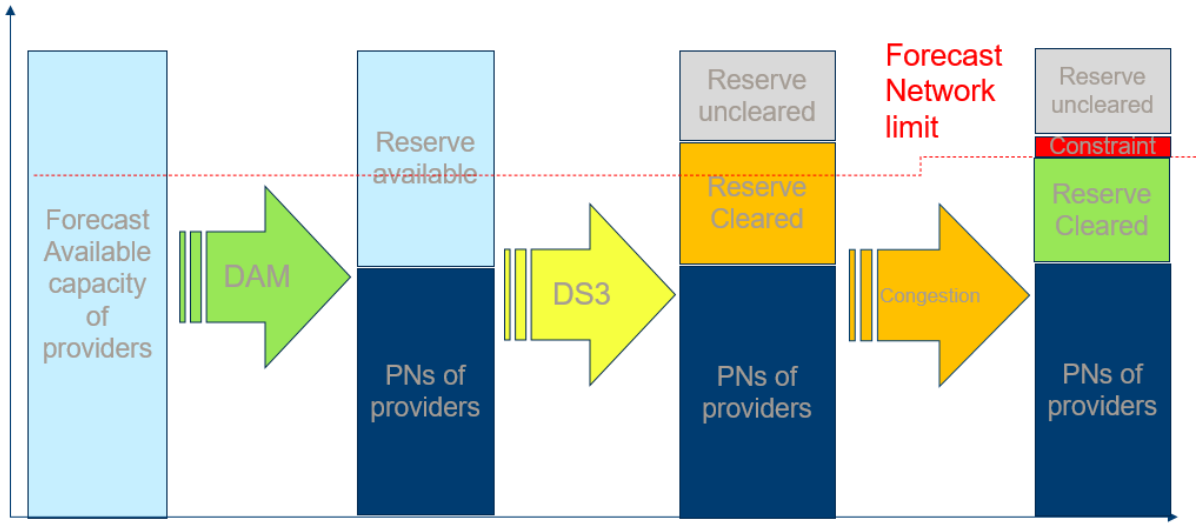

FIGURE 6

In all options, principles of access for capacity allocation (for example, based on pricing, based on effectiveness / electrical location) would need to be approved by the SEMC.

An allocation process ahead of energy market or services market participation could equally be put in place, as illustrated below.

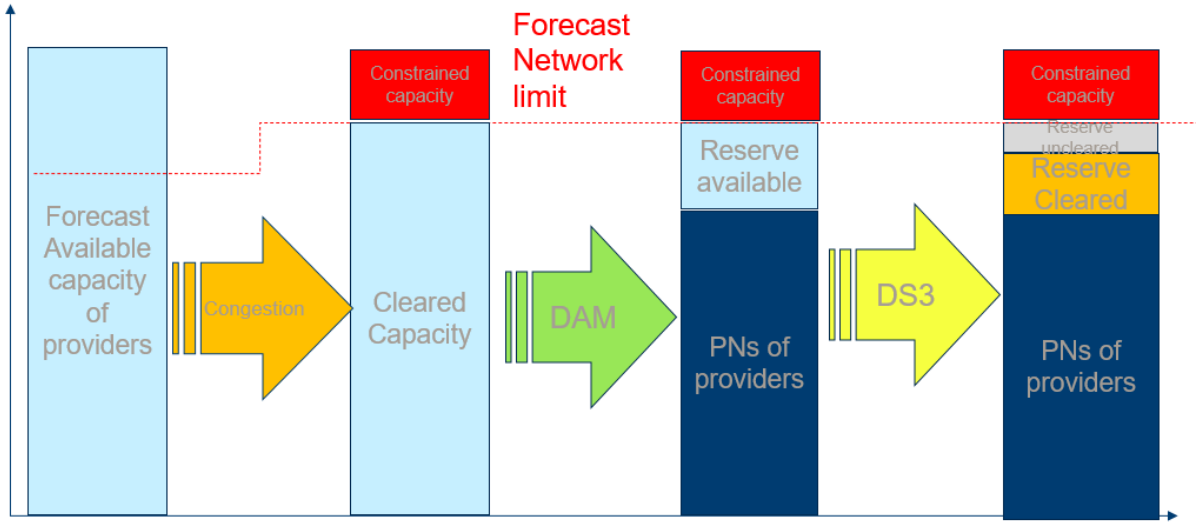

FIGURE 7 CAPACITY ALLOCATION AHEAD OF DAY AHEAD MARKET

In all instances, the earlier distribution network capacity is allocated, that greater the degree to which volumes would be constrained. In all process options as set out above, the treatment of uncleared reserves would need to be determined in the high-level design for both dispatched and automated reserves to ensure network limits are respected. Finally, it may also be possible to introduce localised market-based approaches to increase potential access volumes, for example by providing demand up services in export congested zones. However, this would require careful design consideration to avoid unintended and inefficient outcomes.

Finally, customers' local network access to participate in services is likely to be asymmetric. For example, in the case of balancing capacity there may be no limitation on downward reserve in locations where there is no local embedded generation, while upward reserve actions may cause localised security issues. Therefore a key consideration may be whether frequency services are auctioned as symmetric or directional products. This is also likely to be a consideration for different technology types better suited to regulation in one direction.

Volumes

It is important to note in the auction design that appropriate consideration is given to how different reserve products will be treated for capacity allocation. If all products are auctioned separately, consideration will need to be given to allocation across different product types where constraints arise. In addition, the current suite of defined DS3 products span different durations from fast acting

reserves to slower acting reserve products. With respect of individual trading periods, the treatment of these different products in merit order and capacity allocation will need to be considered.

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

Secondary trading

It should be noted that while commitment obligations for services may be traded between participants for certain services, the operating envelope for network capacity is location and asset specific and is non transferrable.

Due to the locational nature of constraints on the distribution system, any secondary trading considerations would necessitate additional information exchange and further capacity assessment so that the trades can be realised. ESB Networks has not encountered significant appetite for secondary trading of this nature. We note that while it can be provided for, the cost and complexity of the associated systems and coordination would not be immaterial, and the timeframe for such trading could prove operationally challenging.

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

Commitment obligations

Considering the proposed market design options and need to maintain secure operation of the distribution system the, treatment of uncleared reserves would need to be determined in the high level design particularly for both dispatched and automated reserves. Consideration would also need to be given for longer notice reserves (replacement reserve and ramping products) which span multiple trading periods and how commitment obligations for these products are treated. Holding commitment obligations for these products while concurrently allocating capacity for products delivered within a trading period may reduce volumes available and the information exchange between TSO, DSO and participants will need to be considered in this instance.

When determining locational scalars, it may be necessary to consider the impacts of incentivising locational development in congested areas of the distribution network and therefore development of locational scalars should be done in coordination with the DSO.

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

Imperfections and Firm Access

It is noted that imperfections charges and the concepts of firm and non-firm access are designed and developed to reflect transmission system design and operational constraints. Their application for distribution system customers would not be appropriate without further detailed consideration of the definition and application of these concepts in a distribution system context.

While arrangements in respect of dispatch and re-dispatch are not within the scope of this consultation, we note that their current definition relates to the delivery of energy rather than ancillary services.

For many providers on the distribution system, the costs of building an unconstrained network has never been reflected in their connection costs and might not be economically viable if applied in retrospect. If a principle of firmness were to apply, electricity customers could be called upon to bear very substantial additional costs. Additionally, given the mismatch between latent capacity in distribution network design and the activities of system services providers, this could create substantial risk of market abuses.

Notwithstanding the comments above, we note that at present there are no funding arrangements in place for imperfections associated with distribution constraints.

Finally, we note that for certain transmission products the effectiveness of delivering these services from distribution connected resources may prove very low due to network location, irrespective of constraints.

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

Layered procurement of system services

The layered process could involve distribution connected providers (or aggregators with distribution connected assets) being contracted on a long-term basis, outside the day ahead process. Where this is the case, we propose that the same principles would be applied in the modalities enabling their participation as are applied in the day ahead process for all other providers.

This could involve either:

- An operational envelope being incorporated (on a site by site basis) at the time the provider enters into the long-term contract. This would provide long term certainty to the provider and the TSO, but would necessarily be a smaller envelope (i.e. greater restriction) to provide for worst case operating conditions;
- The provider participating (with respect to their assets) in the day ahead allocation of operational envelopes alongside other providers (who are participating in the day ahead auction). This participation could be on a zero-price basis if the provider is operating on a fixed / availability payment basis. This would provide less long-term certainty to the provider and the TSO but would enable larger operational envelopes to be allocated to the provider.

6. Conclusion

In conclusion, ESB Networks welcomes this opportunity to respond to the SEM Committee consultation on the System Services Future Arrangements High Level Design (SEM-21-069). ESB Networks' is committed to contributing to the process in a manner that supports the active participation of new technologies, investor certainty and delivering best value for the customer. ESB Networks' response is underpinned by its role in legislation in this regard, and by principles endeavouring to maximise value, security and safety for distribution system customers.

ESB Networks' role as DSO, with respect to transmission system services is to develop technical provisions (or "modalities") enabling the participation of distribution system customers. This will be essential to reducing barriers to entry for smaller and newer technologies and customers. The modalities enabling their participation must be built into the design and operations of system services over the lifecycle of system services provision.

An efficient and secure process for distribution interactions will be important. This response seeks to emphasise that DSO interactions will be needed throughout the lifecycle of services participation, from registration through to auction, dispatch and redispatch, to maximise the participation of distribution connected resources. To support this, a more nuanced approach to distribution system interactions than the pure "DSO led", "TSO led" and "provider led" models may be necessary and appropriate. While there will be a direct ***commercial*** relationship between the TSO and the provider, it is critical that the DSO has a direct ***operational*** relationship between the DSO and the provider.

The allocation of capacity on the distribution system will in most cases be an asset-specific allocation, which accounts for the electrical locations of different assets. The degree to which any individual distribution connected asset is constrained will be a function of other local assets' behaviour (demand, storage and generation) and dispatch. As such, the closer to real time that the DSO allocates distribution network capacity, the closer this can represent the economic merit order. For illustrative purposes, a number of potential options for the allocation of capacity were presented in this response. In all options, principles of access for capacity allocation (for example, based on pricing, based on effectiveness / electrical location) would need to be approved by the SEMC.

Finally, as part of a separately governed process, ESB Networks is in the process of developing proposals and pilots for distribution system services. ESB Networks will continue to collaborate with EirGrid with a view to maximising the operational compatibility between the frameworks for system services for transmission and distribution respectively.