



**Enduring Solution to Enable Energy Payments in the
Balancing Market for DSUs**

Decision Paper

SEM-22-090

25 November 2022

EXECUTIVE SUMMARY

In July 2019, the SEM Committee (SEMC) published an “interim solution” (SEM-19-029¹) to ensure that Demand Side Units (DSUs) received energy payments at times of system scarcity in line with State Aid requirements. The Clean Energy Package, published in 2019, also includes a number of obligations designed to fully integrate DSUs into electricity markets². This was further recognised in the SEMC’s Forward Work Plan for October 2021- September 2022³ (a key project being the development of a demand side management enduring solution for energy payments).

In July 2022 the SEMC published “Enduring Solution to Enable Energy Payments in the Balancing Market for DSUs – A Consultation” (SEM-22-036, “the Consultation”⁴).

This was to provide stakeholders with an opportunity to comment on proposals to introduce a phased approach to implement an enduring solution to allow DSUs to participate in the market as signalled within the Clean Energy Package and the “interim solution” (SEM-19-029). At a high level, the SEMC proposed:

- Phase 1: Maintain existing “interim solution” design but with an assessment of DSUs’ performance in the balancing market. This would involve DSUs receiving energy payments at all times and not only at times of scarcity.
- Phase 2: Implement previously proposed “enduring solution” in SEM-19-029 with existing operational metering.

A total of 11 responses were received to the Consultation. Overall, respondents agreed that a phased approach was appropriate to allow DSUs access to the balancing market in the short term while an enduring phase of the solution is developed and implemented.

The SEMC has given careful consideration to responses to the Consultation and the Regulatory Authorities (RAs) have engaged extensively both pre- and post-consultation with the Transmission System Operators (TSOs), Market Operator (MO) and representatives of the DSU industry about their views in reaching this Decision. Some modifications to the proposals which the SEMC consulted on have been made to take account of stakeholder feedback. The SEMC decision to proceed with the proposed phased approach to enable DSUs access to energy payments in the balancing market will involve an assessment of the impact of the decision on the Imperfections Charge, and therefore cost to consumer. This assessment will be carried out by the TSOs/MO.

¹ [SEM-19-029 - DSU Compliance with State Aid Decision Paper](#)

² Article 17 of the Electricity Directive and Article 6 of the Electricity Regulation

³ [SEM-21-096 SEMC FWP October 2021 - September 2022 | SEM Committee](#)

⁴ [SEM-22-036 Enduring Solution to Enable Energy Payments in the Balancing Market for DSUs – A Consultation | SEM Committee](#)

A summary of the SEMC's decision is to progress as follows:

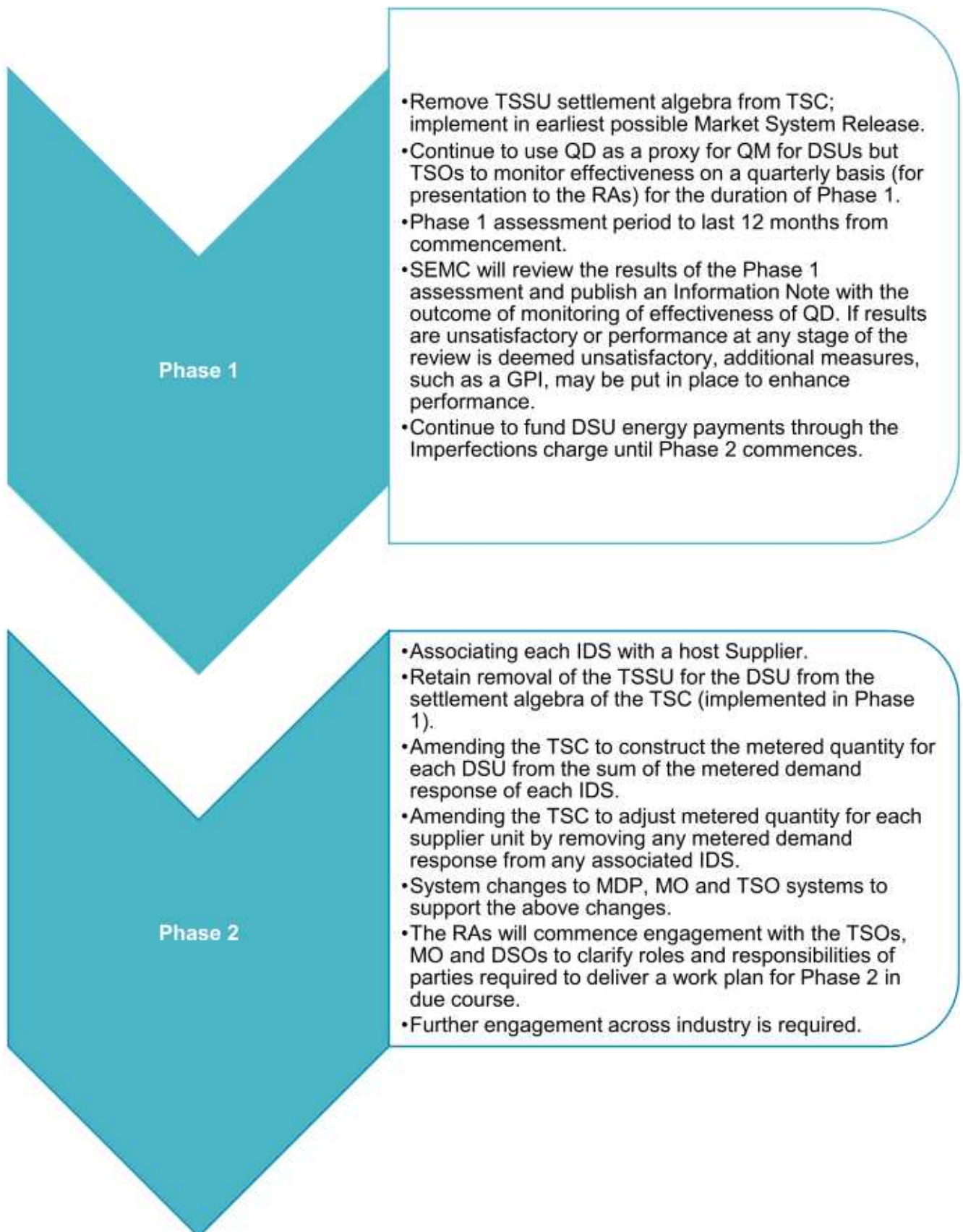


Table of Contents

Glossary of Terms and Abbreviations.....	4
1. Introduction.....	5
1.1 Background	5
1.2 Purpose of this Decision Paper.....	6
1.3 Responses to the consultation	6
2. Enduring solution to enable energy payments in the balancing market for DSUs .	7
2.1 Consultation summary	7
2.2 Summary of responses	8
2.3 Post consultation engagement	11
2.4 SEM Committee response and decision	12

Glossary of Terms and Abbreviations

Abbreviation or Term	Definition or Meaning
CRM	Capacity Remuneration Mechanism
DSO	Distribution System Operator
DSU	Demand Side Unit
DS3 Programme	Delivering a Secure, Sustainable Electricity System Programme
IDS	Individual Demand Site
GPI	Generator Performance Incentive
MO	Market Operator
MRP	Market Reference Price
QD	Dispatched Quantity
QM	Metered Quantity
RAs	Regulatory Authorities
RO payments	Reliability Option Payments
SEMC	Single Electricity Market Committee
TSC	Trading and Settlement Code
TSO	Transmission System Operator
TSSU	Trading Site Supplier Unit

1. Introduction

1.1 Background

When establishing the Capacity Remuneration Mechanism (CRM) as part of the I-SEM programme, the SEM Committee (SEMC) determined that Demand Side Units (DSUs), while able to participate in CRM auctions, would be exempt from Reliability Option (RO) payments where the contracted demand reduction is delivered⁵. RO difference payments would be applied to DSUs only when the demand reduction is not delivered, and the Strike Price is exceeded by the Market Reference Price (MRP). This recognised the fact that DSUs do not have offsetting energy payments in the balancing market. State Aid approval from the European Commission for the CRM allowed this different treatment to apply to DSUs as a temporary measure but obliged the Regulatory Authorities (RAs) to end the exemption from payback obligations for DSUs from the delivery period starting October 2020.

The timescales involved in making system changes and developing the profiles and code changes required to determine the actual delivered quantity of an Individual Demand Site (IDS) and therefore a DSU are in the magnitude of years. As a result, the SEMC proposed an interim solution to be followed by an enduring solution which would be compliant with the final Electricity Regulation⁶. The enduring solution, as determined at that time, was to be rolled out as soon as reasonably practicable.

In 2019, following public consultation, the SEMC published a Decision Paper⁷ outlining an interim solution that could be implemented by October 2020 to be compliant with State Aid. The interim solution, had the following key features:

- An assumption that dispatched quantity (QD) was a suitable proxy for metered quantity (QM) for DSUs;
- Use of the Socialisation Fund to socialise the costs of DSU energy payments across Suppliers; and
- DSUs' energy payments were to be made only at times of scarcity (i.e., at times when DSUs are required to pay difference charges).

The Clean Energy Package has since been finalised and includes a number of obligations designed to fully integrate DSUs into electricity markets, making it an appropriate time to consider an enduring solution where DSUs receive energy payments at all times.

⁵ <https://www.semcommittee.com/publication/sem-15-103-capacity-remuneration-mechanism-decision-1>

⁶ https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv:OJ.L_.2019.158.01.0054.01.ENG&toc=OJ:L:2019:158:TOC

⁷ [SEM-19-029 - DSU Compliance with State Aid Decision Paper](#)

In addition, the SEMC published its Forward Work Plan for October 2021-September 2022⁸ recognising the development of a demand side management enduring solution for energy payments as one of its key projects.

To this end, in July 2022 the SEMC published "Enduring Solution to Enable Energy Payments in the Balancing Market for DSUs – A Consultation" (SEM-22-036, "the Consultation"). This was to provide stakeholders with an opportunity to comment on the proposals for setting out a phased approach to implement an enduring solution to allow DSUs to participate in the market as signalled within the Clean Energy Package and the "interim solution" (SEM-19-029). At a high level, the SEMC proposed:

- **Phase 1:** Maintain existing "interim solution" design but with an assessment of DSUs' performance in the balancing market. This would involve DSUs receiving energy payments at all times and not only at times of scarcity.
- **Phase 2:** Implement previously proposed "enduring solution" in SEM-19-029 with existing operational metering.

1.2 Purpose of this Decision Paper

The purpose of this Decision Paper is to set out the decisions of the SEMC, following consideration of the responses received to the Consultation and engagement with key stakeholders. The Decision implements the SEMC's intention to move to making energy payments to DSUs at all times as outlined in SEM-19-029, and to ensure compliance with the Electricity Regulation and Directive, which forms part of the Clean Energy Package.

1.3 Responses to the consultation

This paper includes a summary of the responses made to the Consultation.

A total of 11 responses were received to the Consultation, one of which was marked confidential. The respondents who did not mark their response as confidential are listed below, and copies of the public responses are published alongside this Decision Paper.

- EirGrid/SONI
- ESB Networks
- NIE Networks
- Federation of Energy Response Aggregators (FERA)
- Demand Response Association of Ireland (DRAI)
- Wind Energy Ireland/Renewable NI
- Irish Solar Energy Association (ISEA)

⁸ <https://www.semcommittee.com/sites/semc/files/media-files/SEMC%20Forward%20Work%20Programme%20Oct21%20-%20Sept%2022.pdf>

- Bord Gais Energy
- Grid Beyond
- SSE

2. Enduring solution to enable energy payments in the balancing market for DSUs

2.1 Consultation summary

The SEMC set out a proposed phased approach to implement an enduring solution to allow DSUs to participate in the market. At a high level, the SEMC proposed:

Phase	Description
<p>Phase 1: Maintain existing "interim solution" design but with an assessment of DSUs performance in the balancing market</p>	<p>This would maintain the assumption that dispatched quantity (QD) is a suitable proxy for metered quantity (QM) for DSUs. It would also maintain the use of the imperfections charge as an appropriate mechanism for funding energy payments for DSUs.</p> <p>Proposed changes, however, are that:</p> <ul style="list-style-type: none"> • DSUs should receive energy payments at <u>all</u> times and not only at times of scarcity; and • The effectiveness of dispatched quantity (QD) as a proxy for metered quantity (QM) in the balancing market needs to be assessed. <p>It was proposed that performance of DSUs in the balancing market would require a continuous monitoring process to be introduced by the TSOs once the SEMC publishes a decision. That review would conclude results at the end of a 12-month period, and would entail but not be limited to:</p> <ul style="list-style-type: none"> • Assessing dispatched quantity (QD) as a suitable proxy for metered quantity (QM) i.e., have DSUs provided requested capacities; • The suitability of the Imperfections Charge for funding DSU energy payments; and • The level and cost of DSU participation in the balancing market.
<p>Phase 2: Implement previously proposed "enduring solution" in SEM-19-029 with existing operational metering.</p>	<p>This would involve continuing with most elements of the previously proposed enduring solution which include:</p> <ul style="list-style-type: none"> • Associating each Individual Demand Site (IDS) with a host Supplier;

	<ul style="list-style-type: none"> • Removing the Trading Site Supplier Unit (TSSU) for the DSU from the settlement algebra of the Trading and Settlement Code (TSC); • Amending the TSC to construct the metered quantity for each DSU from the sum of the metered demand response of each IDS; • Amending the TSC to adjust metered quantity for each supplier unit by removing any metered demand response from any associated IDS; and • System changes to Meter Data Providers (MDPs), Market Operator (MO) and Transmission System Operators' (TSOs) systems to support the above changes. <p>However, a change from the initial proposed enduring solution is the use of existing operational site metering. DSU performance is currently assessed in both the Capacity Market and DS3, while most IDS sites participating in DSUs have appropriate metering at least at the connection level with quarter/half hourly reading.</p>
--	--

The purpose of the phased approach is that before the enduring Phase 2 is implemented, Phase 1 would allow DSUs full market access in the near term. This would enable assessment of the effectiveness of Phase 1 and act as an incentive to DSUs to participate in the market, potentially adding additional flexibility as early as possible.

2.2 Summary of responses

The Consultation sought views on the proposed phased approach to implement an enduring solution to enable energy payments in the balancing market for DSUs.

Overall, respondents agreed that a phased approach was appropriate to allow DSUs access to the balancing market in the short term while an enduring solution is implemented.

Respondents were broadly supportive of the use of existing operational site metering for the Phase 2 enduring solution but highlighted the complex nature of implementing this solution, with the majority of parties indicating that further engagement across industry would be required to develop a robust enduring solution.

Respondents noted that allowing DSUs to receive energy payments in the balancing market at all times would provide a signal to DSUs to increase participation in the market and create a more level playing field with other market participants.

In relation to the Phase 1 solution, key components of respondents' comments related to:

- ***Continuation of dispatched quantity as a suitable proxy for metered quantity***

Several respondents indicated that they were supportive of the continuation of dispatched quantity as a suitable proxy for metered quantity to simplify the implementation of Phase 1. One respondent suggested that, as long as DSUs are commonly metered as import without export, this proxy cannot change. It was also noted that the TSOs are currently monitoring this as part of the ongoing interim solution, with one respondent requesting that this existing analysis is shared to support the view that dispatched quantity is a suitable proxy for metered quantity.

- ***DSU energy payments being funded through the Imperfections Charge***

There was a mixed response on the use of the Imperfections Charge to fund DSU energy payments in Phase 1. Most respondents noted that it is not a perfect solution but acknowledged that it is the most pragmatic solution to proceed with for Phase 1. Two respondents noted that the existing socialisation of costs via the Imperfections Charge appears to be functioning well in the current interim solution.

Two respondents commented that an increase in the Imperfections Charge would be of great concern to customers. There were two suggested actions relating to this concern. Firstly, to forecast the impact on the Imperfections Charge in advance of Phase 1 to inform industry engagement and to determine a way to limit the impact on consumers. Secondly, to improve communication and clarify that, when the Imperfections Charge is funding a legitimate DSU service, it represents a saving of demand on the system and a revenue to customers.

All respondents recognised the requirement to develop an alternative funding mechanism for Phase 2.

- ***Assessing the cost and level of DSU participation in the balancing market***

DSU industry respondents raised concerns over the cost and level of DSU participation being used as assessment criterion to determine whether their performance is satisfactory. They highlighted that their participation is dependent on numerous other factors and barriers to demand-side participation. It was also noted in follow-up engagement with representatives of the DSU industry that other market participants are not subject to assessments of their level of participation in the same manner.

The TSOs highlighted that the average availability of DSUs for the 12-month period from May 2021 was less than 30% but stressed that consistent and reliable

performance must be the cornerstone of any new measures, noting the greatest risk of costs to consumers would be due to non-delivery of dispatched DSU capacity.

Other respondents stated that DSU responsiveness and reactivity to scarcity events should increase from present levels and be delivered reliably if Phase 1 is implemented.

- ***Appropriate length of Phase 1 assessment***

Respondents broadly agreed that 12 months is an appropriate period over which to assess the effectiveness of Phase 1. One respondent cautioned that it may not provide full visibility due to settlement rounds (i.e., M+13). Another party requested that the 12-month period be strictly adhered to in the interest of the consumers.

- ***Satisfactory or unsatisfactory outcomes for a DSU in Phase 1***

DSU industry respondents expressed concern that external influencing factors on DSU participation will not be considered and that by being assessed as a group, DSUs exhibiting satisfactory behaviour may be negatively impacted by the poor performance of others.

- ***The treatment of DSUs between the end of Phase 1 and the introduction of an enduring solution (Phase 2)***

Several respondents agreed that there may be a requirement to introduce a new Generator Performance Incentive (GPI) to apply to DSUs if Phase 1 continues beyond 12 months. A number of respondents noted that the TSOs' assessment of Phase 1 to share with the RAs will provide a clear indication on whether a GPI is required. One party suggested that it may be appropriate to have a separate consultation relating to performance management measures following the review of Phase 1. Another party suggested that an increased incentive to improve DSU responsiveness at times of scarcity is also required.

Additional engagement between the RAs and the TSOs suggested that it would not be a simple exercise to revert to the existing interim arrangements once modifications to market systems had been implemented; such action would be akin to a reversal of any changes made to systems, which could be as timely as original implementation. The TSOs highlighted that, if energy payments to DSUs were to continue between the end of Phase 1 and the introduction of Phase 2 even in the event that the outcome of the review of the performance monitoring was unsatisfactory, then action would need to be taken to discourage poor performance. DSU industry respondents welcomed engagement on introducing performance measures post Phase 1 and provided an alternative approach of performance

scalars like those applied to DS3 participants.

2.3 Post consultation engagement

The SEMC has given careful consideration to responses received to the Consultation and notes that the RAs engaged extensively with the TSOs/MO and representatives of the DSU industry in the preparation of this Decision. The SEMC would like to acknowledge the time commitment and meaningful dialogue with all parties.

The RAs engaged with the TSOs/MO to gain a better understanding of:

- What modifications would need to be made to the TSC and subsequently to market systems to allow DSUs to receive energy payments at all times, and what timelines are involved in delivering this work;
- What, in their view, would be a satisfactory outcome of Phase 1;
- What monitoring activities would be required to determine the effectiveness of Phase 1 (including a run through of existing performance monitoring activities);
- The suitability of the Imperfections Charge for DSU energy payments; and
- Views on the involvement of the TSOs/MO in the body of work to deliver Phase 2.

The TSOs/MO:

- Outlined the existing performance monitoring carried out on DSUs relating to the Dispatched Quantity as a proxy for Metered Quantity. The existing process can be carried on and delivered to the RAs on a regular basis; and
- Provided justification of why a high-level delivery plan for Phase 2 with estimated timeframes could not be delivered ahead of the publication of this Decision. It would require inputs beyond the remit of the TSOs/MO and the wholesale markets, including retail market aggregation systems, and data exchanges between Distribution System Operators (DSOs), TSOs and MO.

The SEMC engaged with representatives of the DSU industry to further understand:

- What, in their view, would be a satisfactory outcome of Phase 1;
- Industry concerns with the proposed approach, particularly relating to the outcome of the Phase 1 assessment; and
- Industry views on how Phase 1 may influence DSU behaviour.

The engagement with the DSU industry provided the SEMC with clarity on the DSU industry's concerns with the inclusion of level and cost of participation as an assessment criterion. DSU industry members' also raised concerns relating to being assessed as an industry rather than on an individual basis was also noted.

The DSU industry provided reassurance to the SEMC that proceeding with the phased approach to an enduring solution is appropriate. DSU industry representatives also emphasised the potential benefit of the continuation of Phase 1 suggesting the certainty it would provide would be more attractive to new load types and therefore may result in additional capacity joining the market.

2.4 SEM Committee response and decision

The SEMC welcomes the broad support on the phased approach to introducing an enduring solution and the recognition that extending the current interim solution to give DSUs full access to the market provides a more level playing field with other market participants.

For Phase 1 to deliver energy payments to DSUs, the removal of specific treatment of the TSSU will be required. This removal will result in concerns relating to “double counting” as the energy payments are effectively a double counting of energy (against the DSU and the reduced consumption at the Supplier Unit(s)). This consequence will remain until the enduring solution is implemented in Phase 2, but it remains the only way to ensure DSUs are in receipt of energy payments at all times to move forward with Phase 1.

The SEMC decision to proceed with the proposed phased approach to enable DSUs access to energy payments in the balancing market will involve an assessment of the impact of the decision on the Imperfections Charge, and therefore cost to consumer. This assessment will be carried out by the TSOs/MO.

Phase 1

The SEMC notes the following key points in relation to the Phase 1 solution.

- ***Continuation of dispatched quantity as a suitable proxy for metered quantity***

The SEMC recognises that by extending the current interim solution for Phase 1, dispatched quantity would continue as a proxy for metered quantity and that continued monitoring of its effectiveness will be required by the TSOs for the duration of the assessment period. The SEMC also notes a request to publish the outcome of any monitoring of effectiveness of this proxy. The SEMC will publish an Information Note at the end of the 12-month review period after implementation of Phase 1 to provide insight to the results of this analysis and will consider any necessity for quarterly reporting during that period.

- ***DSU energy payments being funded through the Imperfections Charge***

The SEMC acknowledge that this approach will have an impact on the Imperfections Charge for the duration of Phase 1 but considers that this appears to be the most appropriate funding mechanism for this Phase. An impact assessment of the continued use of the imperfections charge has been requested as part of the preparation for the TSC modification proposal to remove the TSSU settlement algebra. When the interim solution was introduced, it was stipulated that the recovery mechanism should continue to allocate costs between Suppliers in a fair and reasonable way. The Imperfections Charge was selected by the TSC Modification Committee as the most appropriate as it is intended to cover energy imperfections and is a flat rate against all demand volumes regardless of meter type or time of day.

- ***Assessing the cost and level of DSU participation in the balancing market***

The SEMC acknowledge that DSU participation in the balancing market will not solely be influenced by access to energy payments so assessing the cost and level of participation would need to encompass a number of other factors.

- ***Appropriate length of Phase 1 assessment***

The SEMC notes that 12 months appears to be a suitable assessment period which provides the opportunity to incorporate learnings from monitoring. The assessment criteria need to be considered carefully to ensure a fair assessment of performance and that they correctly capture the effectiveness of Phase 1.

- ***Satisfactory or unsatisfactory outcomes for a DSU in Phase 1***

The SEMC notes the concerns of the DSU industry that to assess the performance of DSUs as a group may negatively impact some participants due to the poor performance of others.

Key elements of the Phase 1 solution:

a) **Continue to use Dispatched Quantity (QD) as a suitable proxy for Metered Quantity (QM) for DSUs:**

- The SEMC has decided that the effectiveness of this will need to be monitored by the TSOs in order to produce monthly reports. Those reports will be collated to form quarterly and annual reviews for the RAs (at months four, seven, ten and thirteen after implementation of Phase 1). This will inform a final SEMC decision on the effectiveness of Phase 1.
- The RAs will engage with the TSOs to establish the threshold for what will be deemed as satisfactory/unsatisfactory performance.

- The SEMC will communicate the outcome of the performance monitoring review via an Information Note after completion of the twelve-month review period. The outcome of the review will be used to inform the requirement for any additional measures to be put in place to address unsatisfactory performance. However, performance measures may be introduced at any point within the 12-month review if performance is deemed unsatisfactory.
- b) **Remove the Trading Site Supplier Unit (TSSU) for the DSU from the settlement algebra of the Trading and Settlement Code (TSC):**
- For Phase 1 to deliver energy payments to DSUs, the removal of specific treatment of the TSSU will be required. This removal will result in concerns relating to “double counting” as the energy payments are effectively a double counting of energy (against the DSU and the reduced consumption at the Supplier Unit(s)). This consequence will remain until the enduring solution is implemented in Phase 2, but it remains the only way to ensure DSUs receive energy payments at all times to move forward with Phase 1.
 - As an immediate next step for Phase 1, the RAs will continue to engage with the TSOs/MO to draft a Modification Proposal for consideration by the TSC Modification Committee as soon as possible.
- c) **Continue to fund DSU energy payments through the Imperfections Charge in accordance with Trading and Settlement Code (TSC) modification, Mod_17_19⁹:**
- The SEMC has determined that the Imperfections Charge are the most appropriate recovery mechanism to fund DSU payments and suggests this remains the case for Phase 1.
 - There is no Code change required to continue using the Imperfections Charge as this is done via the tariff setting process. As part of the preparation for the TSC Modification Proposal proposed at (b), the TSOs/MO are requested to undertake an impact assessment on the continued use of the Imperfections Charge.
 - To proceed with implementation of Phase 1 the RA will engage with the TSOs/MO to ensure that the funding of Phase 1 is included in the calculation of the Imperfections Charge for the relevant year(s).

The Consultation also proposed that, as part of the monitoring of the effectiveness of Phase 1 by the TSOs (for the RAs), the TSOs would assess the level and cost of DSU participation in the balancing market. This component of the monitoring process

⁹ https://www.sem-o.com/documents/market-modifications/Mod_17_19/Mod_17_19_V2-DSUStateAidComplianceInterimApproach.docx

will no longer form part of the formal assessment criteria but will be monitored to inform the impact to consumers of Phase 1 and any potential future evolutions of the arrangements.

Moving from Phase 1 to an Enduring Solution (Phase 2)

The SEMC understands that it would not be a simple exercise to revert to the existing interim arrangements following Phase 1 due to the lead time of code and market system modifications. This emphasises the importance of the review of Phase 1 implementation in identifying, if any, consistent poor performance on an individual unit basis. The outcome of this review will inform the requirement of performance metrics, such as a GPI, ahead of the introduction of Phase 2. A performance metric may be introduced at any point within the 12-month review to enhance performance.

Key elements of the solution between Phase 1 and Phase 2:

- a) The SEMC has decided that any changes made to the TSC and market systems in order to implement Phase 1 of the solution will not be rolled back to existing arrangements following the end of Phase 1 and before the commencement of Phase 2. The SEMC's outcome of the review of the effectiveness of Phase 1 will be used to inform the requirement for any additional measures to be put in place to address unsatisfactory performance.

Phase 2

In relation to Phase 2, the SEMC notes the potential for the proposed change to the enduring solution of using existing operational site metering but also recognises the complexity of the implementation of an enduring solution.

Key elements of the Phase 2 solution:

- a) As outlined in the Consultation, the following components are proposed in the development of the enduring solution:
 - Associating each IDS with a host Supplier;
 - Retain removal of the TSSU for the DSU from the settlement algebra of the TSC (implemented in Phase 1)
 - Amending the TSC to construct the metered quantity for each DSU from the sum of the metered demand response of each IDS;
 - Amending the TSC to adjust metered quantity for each supplier unit by removing any metered demand response from any associated IDS; and

- System changes to MDP, MO and TSO systems to support the above changes.
- b) Due to the complexity associated with the implementation of a Phase 2 enduring solution, the SEMC recognises the need for a review of the results of the Phase 1 assessment and further engagement by the RAs with industry before any Phase 2 solution is designed or implemented.
 - c) The RAs will commence engagement with the MO, the TSOs and the DSOs to clarify roles and responsibilities of parties required to deliver a work plan for Phase 2 in due course.