



SINGLE ELECTRICITY MARKET COMMITTEE

DS3 System Services Future Programme Approach

Information Paper

SEM-17-017

23 March 2017

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'The SEM Committee is established in Ireland and Northern Ireland by virtue of section 8A of the Electricity Regulation Act 1999 and Article 6 (1) of the Electricity (Single Wholesale Market) (Northern Ireland) Order 2007 respectively. The SEM Committee is a Committee of both CER and NIAUR (together the Regulatory Authorities) that, on behalf of the Regulatory Authorities, takes any decision as to the exercise of a relevant function of CER or NIAUR in relation to an SEM matter.'

1 EXECUTIVE SUMMARY

This paper sets out the SEM Committee’s approach to the implementation of System Services. This approach centres on putting in place a tariff-based procurement process, with clarity on future expenditure and an emphasis on consumer benefit. Expenditure on System Services will increase according to a glide path where new capability is required. However, the expenditure cap will only be reached where additional volumes of all 14 services are required. With this arrangement in place, the SEM Committee will develop and consult upon competitive arrangements.

System Services is a key work stream within the DS3 Programme¹. The overall aim of the DS3 Programme is to put in place the required changes to system policies, tools and performance to allow the electricity system operate safely with a high penetration of wind. In December 2014, the SEM Committee published a decision paper on the high-level design for the procurement of DS3 System Services (“SEM-14-108 Decision Paper”). The Decision Paper also set out the SEM Committee’s emerging thinking on many aspects of the detailed design and implementation of the new arrangements.

Since the SEM-14-108 Decision Paper was published, the Transmission System Operators (TSOs) and Regulatory Authorities have worked to implement many aspects of the SEM high-level design including the successful development and implementation of DS3 System Services Interim Arrangements in October 2016.

Notwithstanding the successful implementation of the Interim Arrangements, a number of key issues have emerged which impact the design of the DS3 System Services programme of work as originally envisaged by the SEM Committee in the SEM-14-108 Decision Paper.

Having cognisance of the various issues and dependencies impacting the implementation of the DS3 System Services, this information paper sets out the SEM Committee’s approach for the DS3 System Services programme of work for the full implementation of the High Level Design established in SEM-14-108 through three work-streams - regulated arrangements, competitive arrangements and TSO incentive mechanisms.

¹[DS3 Programme - Delivering a Secure, Sustainable Electricity System](#)

2 INTRODUCTION

2.1 OVERVIEW

This paper sets out the SEM Committee's approach to the completion of the delivery and implementation of the new System Services arrangements as set out in the High Level Design (SEM-14-108). The approach set out in this paper takes into account the experience of the interim arrangements, responses to the public consultations on the various elements of the detailed design, developments with the EU Electricity Balancing Guideline and the recent I-SEM Stocktake².

The new arrangements will be delivered through three work-streams - regulated arrangements, competitive arrangements, and TSO incentive mechanisms. The work-streams will be sequenced with the regulated arrangements to be put in place first, building upon the current Interim Arrangements, to ensure continued progress to increasing the SNSP limit in advance of 2020 and facilitating market conditions which will increase the success of the competitive arrangements.

As the 'Delivering a Secure Sustainable Electricity System (DS3)' programme of work has evolved, issues have emerged which impact progression of the Enduring Arrangements for 2017 as envisaged in the SEM 14-108 Decision Paper including DS3 competitive procurement process design, inter-dependencies and alignment between DS3 and I-SEM Programme deliverables and emerging requirements with respect to European Network Codes (in particular the European Guideline on Electricity Balancing).

Taking all of the above into consideration, the SEM Committee envisages that the future approach for DS3 System Services falls broadly into the following three categories:

² [I-SEM Stocktake](#)

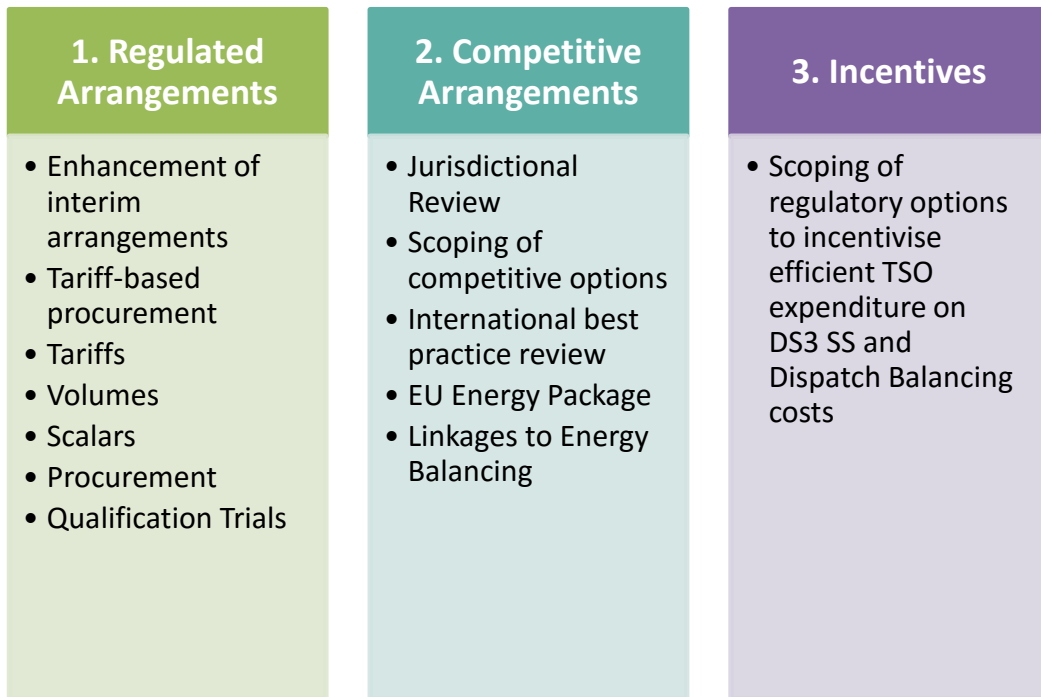


Figure 1: DS3 System

Services Categories

This section of the paper provides background to the DS3 project. Section 4 covers the Regulated Arrangements and Sections 5 and 6 covers the competitive arrangements and the TSO incentive mechanisms.

2.2 DELIVERING A SECURE SUSTAINABLE ELECTRICITY SYSTEM (DS3)

The DS3 programme was established to meet the challenges of operating the all-island electricity system in a safe, secure and efficient manner while facilitating higher levels of renewable energy. Specifically, DS3 aims to ensure enhanced Transmission System Operator (TSO) capability to operate the system with high levels of non-synchronous generation (up to 75% by 2020). Achieving this level of renewable integration on a synchronous system is unprecedented and presents a considerable challenge for the real time operation of the power system given that that SONI and EirGrid (the TSOs) operate transmission systems on the island of Ireland with no synchronous interconnection to the rest of Europe. In order to meet this challenge and in turn to support the achievement of national and European renewable targets, the DS3 Programme focuses on three main pillars which encompasses enhanced operational policies and grid/network code standards, network control centre tools, and enhanced ancillary services (System Services).

1. System Performance
2. System Tools
3. System Policies

This paper only deals with the System Services element of the wider DS3 programme.

2.3 SEM COMMITTEE DS3 SYSTEM SERVICES HIGH LEVEL DESIGN

In December 2014, the SEM Committee published a decision paper on the high-level design for the procurement of DS3 System Services (“SEM-14-108 Decision Paper”). The Decision Paper also set out the SEM Committee’s emerging thinking on many aspects of the detailed design and implementation of the new arrangements.

Some of the key changes outlined in the SEM Committee’s decision and the transition from the previous Harmonised Ancillary Services (HAS) arrangements to the new DS3 System Services include:

- An increase in the number of services procured from 7 to 14 services;
- An increase in the maximum amount payable for the services to €235 million by 2020;
- Movement from the previous HAS system of bilateral contracts with connected service providers to new transparent procurement processes, consisting of either a regulated tariff arrangement or a competitive procurement mechanism depending on the level of competition for each service; and
- Develop an incentive mechanism that delivers efficient action by the TSOs to reduce constraints on the network and enable increased integration of renewables.

2.4 INTERIM ARRANGEMENTS

During 2016, both the TSOs and the Commission for Energy Regulation and Northern Ireland Authority for Utility Regulation (the Regulatory Authorities) focused on the establishment of the Interim Arrangements:

- The design and approval of tariffs for the 2016-2017 year;

- The design and conclusion of a transparent procurement process and contractual framework arrangements for provision of DS3 System Services on a providing unit basis.
 - As of October 2016, 11 System Services have been provided by 107 providing units which qualified under a procurement process.
- The establishment of a qualification trial process for technologies that did not meet the criteria in the main procurement process.
 - Qualification Trials will commence in March 2017 to examine technologies which did not qualify as approved providers in terms of system provision. Trials will also be conducted on various measurement technologies required for accurate assessment of provision of the three fast services (Fast Frequency Response, Fast Post Fault Active Power Recovery and Dynamic Reactive Response); and
- The successful deployment of TSO control centre tools and operational supports to facilitate System Services.

3 PURPOSE OF PAPER

This information paper sets out the SEM Committee's approach for the DS3 System Services programme of work for the full implementation of the High Level Design established in SEM-14-108.

The SEM Committee is cognisant of industry's need for clarity with respect to DS3 System Services in the context of a changing market with numerous interdependencies including the pending I-SEM go-live, Capacity Remuneration Mechanism (CRM) auctions and incoming EU Balancing Guideline. Through this information paper, the SEM Committee intends to provide clarity on the future approach of DS3 System Services until competitive arrangements are in place.

This information paper sets out in detail the approach for the DS3 System Service Regulated Arrangements. Also, in relation to the Competitive and TSO Incentive Arrangements the SEM Committee considers it appropriate to set out its approach at a high level in 2017. This will allow the SEM Committee to further consider the complex issues and interdependencies and, importantly will allow the SEM Committee, to seek participants' views prior to committing to a given approach.

In advance of the competitive arrangements being put in place the SEM Committee aims to provide clarity for investors and ensure delivery of consumer benefits. SEM-14-108 set out that *"a glide path (with an annual expenditure cap) to the cap of €235m in 2020 will be established in the detailed design and implementation phase. This will be based upon the required volumes of system services for each of the years 2016 – 2020"*. Section 4 sets out the SEM Committee's view on how this glide-path should be applied.

The SEM Committee remains committed to delivering a sustainable competitive procurement process as the best method of ensuring value for the all-island consumer in the long term. Further detail on the approach to the development of a competitive procurement process is provided in Section 4 of this paper. In addition the SEM Committee will put in place an incentive mechanism on the TSOs to ensure efficient expenditure and system operation.

At a high level and described in more detail in this paper, during 2017, the focus of the Regulatory Authorities and TSOs with respect to DS3 System Services will be to ensure that progress is achieved on the following work areas:

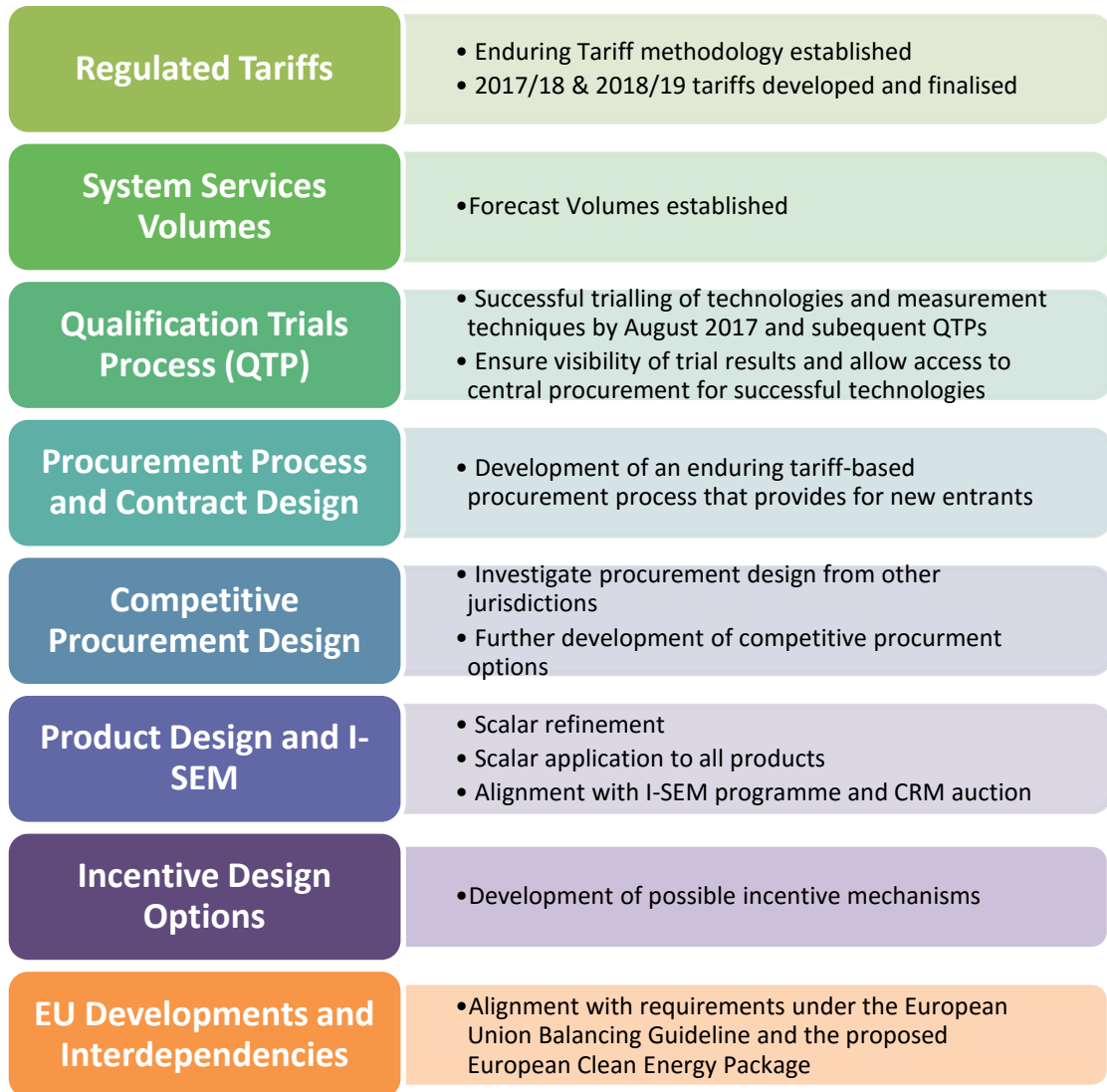


Diagram 2: Detailed DS3 Work-Streams

4 REGULATED ARRANGEMENTS

This section sets out the SEM Committee's approach to the Regulated Arrangements. The main elements of the Regulated Arrangements are:

- Clarity on the TSOs' expenditure cap each year to 2020 through the glide-path.
- The establishment of an enduring procurement framework, which is efficient for existing providers, new entrants and the TSO.
- An enduring tariff methodology that targets revenues to deliver consumer benefits.
- The publication of forecast volumes of existing and required capability in each service for 2020 to give potential providers of System Services information on where investment is required and facilitate a tariff methodology that focuses expenditure where it delivers the greatest value for the consumer.
- The development of the current performance and product scalars and the implementation of the remaining two scalars (scarcity and volume). This should be aimed at providing benefits for customers by, for example, penalising poor performance, incentivising good performance or focusing payments to the delivery of system services by the providers, locations, and times that provide the most value to the system.

4.1 TSO SYSTEM SERVICES EXPENDITURE CAP

SEM-14-108 established an expenditure cap of €235m by 2020 for system services and provided for the establishment of a glide path for the years 2016-2020. The SEM Committee has decided that this will be a straight-line glide path as depicted in Figure 3 below.

The SEM Committee is of the view that the glide path of the expenditure cap, coupled with the volume requirement forecasts will:

- Provide industry with increased certainty of income and signals to invest, in the absence of a competitive procurement mechanism before 2019.
- Enable more efficient market participant bidding strategies in the CRM auction and the energy market.
- Facilitate the timely development of DS3 System Services Enduring Arrangements by enabling the Regulatory Authorities and TSOs to focus on the design of competitive arrangements and incentive mechanisms.



The SEM Committee considers that this approach strikes the appropriate balance between limiting consumer expenditure, where uncertainty exists in terms service provision, and providing the clarity and incentives necessary to facilitate investment. While the SEM Committee is aware of the need to ensure TSO expenditure is efficiently incurred it is important to note that the net increase in consumer costs may be lower than the increase in the System Services due to the interaction with the Capacity Payment Mechanism. As system services revenues increase, the “missing money” that capacity payments are designed to cover is reduced. This interaction is beneficial for customers as it also ensures that the expenditure is more efficiently directed at those generators who are providing value to the system.

It is the intention of the SEM Committee that the tariff methodology will target the expenditure increases to the services which are most likely to be scarce in the future. To this end, the SEM Committee intends that the expenditure increase will be allocated in proportion to the TSOs’ forecast of system needs and the proportion of additional volume capability needed. This concept is outlined in more detail in Section 4.3.

The SEM Committee notes that as set out in SEM-14-108 the expenditure cap limits expenditure to a maximum level but does not guarantee that this level of monies will be spent. Therefore, tariff rates will not increase for services where there is no additional system need and where additional investment is not required. Providing the most overall value to the customer is of primary importance to the SEM Committee. In view of this, if TSO expenditure on System Services is more than the SEM Committee would expect based on forecasts and volumes, the Regulatory Authorities reserve the right to review TSO System Service processes and expenditure.

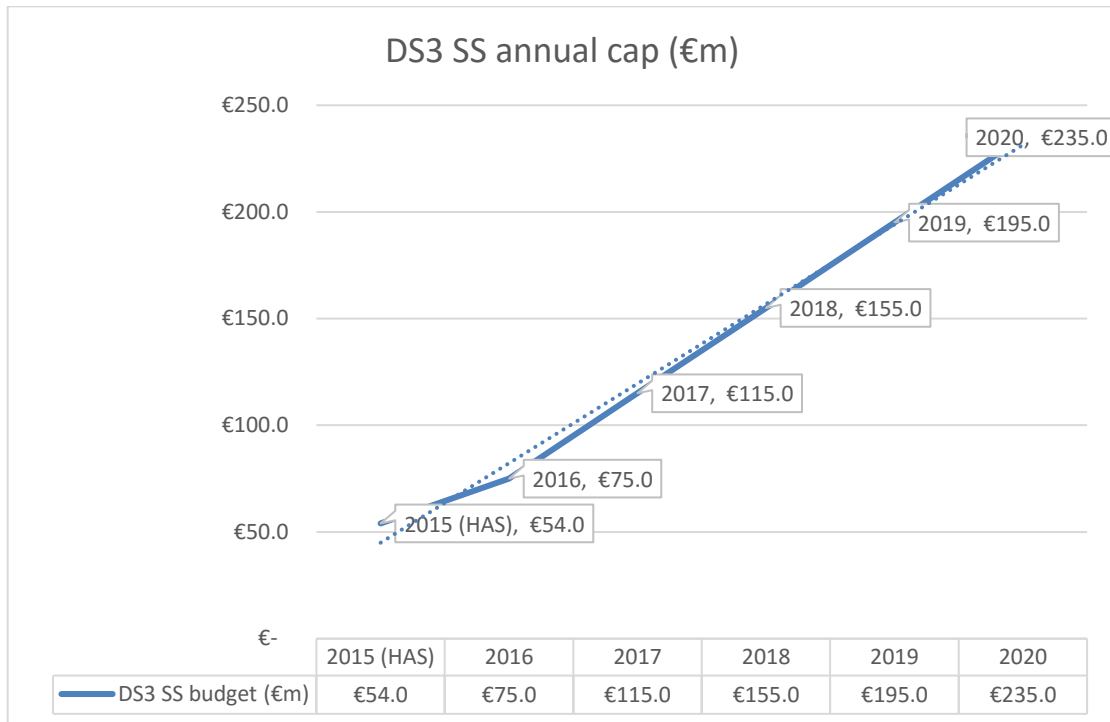


Figure 3: DS3 System Services Glide-Path

4.2 DS3 SYSTEM SERVICES TARIFF BASED PROCUREMENT PROCESS

In 2016, the TSOs conducted an interim tariff-based central procurement process resulting in one-year Interim Arrangement Framework Agreements which replaced the previous Harmonised Ancillary Services (HAS) contracts. On 1st October 2016, as a result of the interim central procurement process, 107 units were enabled to provide DS3 System Services in Ireland and Northern Ireland.

In the absence of a competitive procurement process at this point and in order to enable the continued procurement of System Services, and to facilitate the participation of new entrants, the TSOs are investigating the possibility of using an enduring panel-based procurement process until competitive arrangements are in place. While the TSOs’ procurement strategy is still under development, any enduring procurement process will be designed to be more flexible than the arrangements established in October 2016 under the Interim Arrangements by allowing participants to qualify to gain a DS3 System Services contract more frequently (e.g. every six months). This flexibility would help facilitate the participation of new entrants, new technologies and providers emerging from the enduring Qualification Trial Process, allow providers to make required changes to existing contracts (e.g. update availability/capability) and provide more frequent

opportunities for participants to access System Services contracts. The process for the procurement process is envisaged as follows:

- The 107 existing Interim Framework Agreements for the 11 services, due to expire in October 2017, will be extended until end of April 2018.
- Tariffs for these extended contracts will be consulted in May 2017, and published in July 2017.
- The TSOs will run a panel-type based procurement process in Q3/Q4 2017 for the 11 existing services to enable new contracts to be executed in May 2018 based on 2017/18 tariffs. This procurement process will be open to existing contracted units, new connections and successful participants emerging from the Qualification Trial Process with contracts executed in May 2018 based on 2017/18 tariffs.
- The TSOs will run a separate procurement process in Q2 2018 for the provision of the three remaining services (Fast Frequency Response, Fast Post Fault Active Power Recovery and Dynamic Reactive Response) with contracts to be executed in August 2018 based on published 2017/18 tariffs.
- The TSOs have informed the SEM Committee of the necessity, from their technical perspective to stagger the introduction of the three fast services (FFR, FPFAPR and DRR). This request for a longer implementation time is based on the TSOs' need to develop the appropriate contractual definitions for technical product delivery, product response criteria, and settlement and performance monitoring system requirements for each of the three services for a range of conceivable technologies. The TSOs have stated this is required to provide potential service providers with appropriate clarity as to the obligations associated with provision of these services, and should provide sufficient foresight to enable providers to initiate changes or refinements to systems to meet those obligations. This should help ensure that service provision and settlement system remuneration is robust and DS3 System services are provided in a manner that meets the needs of the electricity system.
- From 2019 onwards, the panel-based procurement would be sequenced to ensure one process for all 14 services with frequent opportunities for new participants to access System Services contracts.
- Notwithstanding that the Regulatory Authorities may review the process, should this be required from time-to-time, a more flexible procurement process would become the standard procurement process for DS3 System Services until a competitive procurement process is in place.

- The Qualification Trial Process would continue to run annually to enable new and emerging technologies to prove their service provision capability.

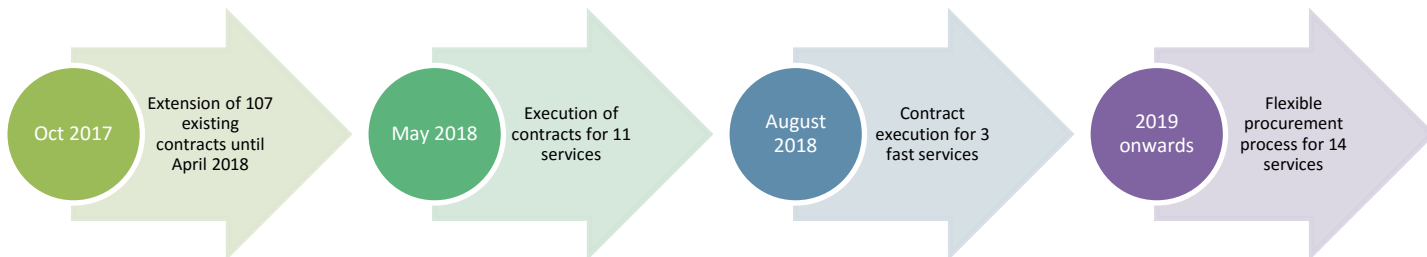


Figure 4: DS3 System Services Procurement Process Timeline

4.3 TARIFF METHODOLOGY

4.3.1 Background

The High Level Design SEM-14-108, required the TSOs to develop Interim Tariffs to be in place for 1st October 2016. The purpose of the Interim Tariffs was to allow for the timely implementation of System Services, enable the transition from previous Harmonised Ancillary Services arrangements and assist the development and operation of the enduring design and provide valuable information on the existing capability of the system. Following public consultation³ the TSOs submitted their recommendations on the proposed methodology and rates for the Interim Tariffs to the SEM Committee, which were approved in August 2016.⁴

The TSOs also consulted⁵ on an enduring tariff methodology, as required by SEM-14-108. Following a review of the responses to the consultation and further analysis of the proposed methodology the TSOs made a submission to the Regulatory Authorities outlining their view that the level of complexity and the difficulty in selecting the required variables while maintaining technology neutrality was such that enduring tariffs would not be developed in time for the next central procurement process. Based on the TSOs' recommendation the SEM Committee decided that a new methodology that built upon the existing Interim Tariff methodology should be developed.

³ [Consultation on DS3 System Services Interim Tariffs](#)

⁴ [DS3 System Services Interim Tariffs Decision Paper](#)

⁵ [Consultation on Regulated Tariff Calculation Methodology](#)

4.3.2 Tariff Methodology

The SEM Committee is committed to the introduction of competitive arrangements for the procurement of System Services. However the consultation on Auction Design in 2015/2016 revealed a number of complexities, not least the need to review the commitment placed on market participants for provision of balancing services in the All-Island market where central dispatch can change planned generator activity at short notice. This complexity coupled with the need to ensure compliance with the Balancing Framework Guidelines requirements (which are due to be finalised later in 2017) has resulted in a delay to the development of a comprehensive and conclusive competitive procurement mechanism. This delayed implementation does however afford the TSOs, Regulatory Authorities and Market participants an increased opportunity to understand in more depth any potential interactions with the I-SEM balancing market. Therefore the SEM Committee is of the view that the tariff regime should be designed to be in place for a number of years.

As stated above in Section 4.3.1, as the interim methodology was envisaged as a transitional measure from HAS, it is considered that refinement of this process is needed. System Service tariff rates are now established for all 14 System Services and the SEM Committee now considers that the current rates should be used as the base rates so that the new methodology can build upon the work already completed.

As discussed in Section 4.1 above the SEM Committee intends the Regulated Arrangements to provide revenue clarity for providers and incentivise the provision of services where investment is most needed. To ensure value to the consumer the SEM Committee requires that the tariff methodology directs revenues (the expenditure increases) to services in proportion to the TSOs' assessment of system needs and the proportion of additional volume capability needed. Noting that the expenditure cap limits expenditure to a maximum level but does not guarantee that this level of monies will be spent; tariff rates will not increase for services where there is no additional system need and where additional investment is not required.

The SEM Committee therefore requests the TSOs to develop and consult on a tariff methodology based on the approach set out below and submit their recommended tariff rates, for 2018/19 to the SEM Committee for approval.

The principles for establishing a tariff methodology should be based on the following approach:

1. Each year, uses the existing rates as a base.
2. Allocates a portion of the budget increase to system needs and a portion to volume requirements.
3. To the extent possible, the TSOs would allocate the system needs budget across the services based on their assessment of the services' value to the system.
4. The TSOs allocate the volume requirements budget across the services based on the volume shortfall relative to the required additional investment forecast for 2020.
5. The TSOs then use the resulting additional budget for each service to calculate the tariff rate increase, if any, for each service.

Allocating the expenditure increase in proportion to both system needs and required volumes ensures that providers are incentivised to make available those services of most value to the TSO and also provides signals for investment in the services where additional capability is required on the system. Using the current rate each year, and applying the methodology to any potential increase in total system services expenditure, will provide greater clarity to investors and participants in future CRM auctions of potential revenues from System Services auctions. Finally, using the resulting budget for each service ensures that the tariff rates will not increase for services where an increase is not required but that the budget allocation will be highest where there is the most consumer value. It is noted that the detailed methodology will also have to account for the expected availability in a given year and that there may need to be an upper limit to the budget increase of any one service to avoid volatility in the TSOs' budget.

The SEM Committee considers that this approach to the methodology ensures that the expenditure cap in a given year will not be reached unless it is required; and where it is required the budget will be allocated in such a way as to maximise consumer benefit.

The annual tariff setting process is proposed as follows:

- TSOs will prepare and submit proposals for a tariff methodology and the resultant tariffs to be publically consulted to the SEMC for approval.

- Following refinement post-consultation the TSOs will submit tariffs to the Regulatory Authorities for scrutiny in advance of submission to the SEM Committee.
- The SEM Committee will review the proposed tariffs for approval; and
- Following SEM Committee approval the TSO will publish the tariffs.

The SEM Committee is cognisant of the need to ensure co-ordination between the work underway in Energy Trading Arrangements, System Services, and the Capacity Auction process. As such, it is noted that there are a number of I-SEM dependencies which require industry to have sight of 2017/18 DS3 System Services tariffs before Q4 2017. Work is required to ensure that tariffs for 2017-2018 are determined before October 2017; therefore the Regulatory Authorities have directed the TSOs to start the Volumes, Tariff and Scalar development in early 2017.

Table 1: Timeline of DS3/I-SEM events

Key Event	Date
End of Qualification Trial Process (with new entrants qualified to enter next Central Procurement Process)	August 2017
Consultation on future DS3 System Services tariffs, volumes and scalars	July 2017
Finalised DS3 System Services tariffs	September 2017
Start of 2017 Procurement Process (May 18 – Sep 18 Tariffs)	October 2017
CRM auction (T-1)	15 th December 2017
Completion of DS3 System Services interim contracts	April 2018
Start of procurement of three fast System Services	April 2018
Execution of new 11 services panel-based contracts	May 2018
I-SEM Go-live	23 rd May 2018
Contract execution of three fast System Services	August 2018
Consultation on 18/19 DS3 Tariff Rates	July 2018
Finalised DS3 System Services tariffs for 18/19	September 2018
CRM auction (T-4)	Q3 2018

4.4 VOLUMES

The SEM-14-108 paper required the TSOs to determine estimated volumes of each service to meet the system needs for five years (2016-2021).

The Volume Calculation Methodology that was consulted on in 2015 and for which a decision paper was published by the TSO in July 2016 was developed with the specific aim of determining the Capability Volume Requirements that could be used in an auction. It was intended to publish these volumes in advance of the DS3 System Services auction in order to inform participants and contribute to formulation of their bidding strategy.

The TSOs have indicated that the published methodology was not developed for the purposes of ascertaining the volumes of needed new investment in capability, or tariff based procurement of services.

Given the current timetable it is proposed to develop and use a revised methodology that will seek to establish:

- The services which are most likely to be most scarce in the period to 2020 and beyond;
- Current capability of existing fleet to provide technically realisable system services, highlighting potential areas for investment in additional provision; and
- A process for comparing forecasts with actual provision in previous years

The TSOs will be required to provide further detail on this volume calculation methodology, and the SEM Committee are of the view that this will, at a minimum require the TSOs to make assumptions regarding future operational constraints and potential future service provider portfolios. The portfolios will be used for the purpose of determining the appropriate volume requirements and will not represent desired, expected or optimal portfolios. The outturn volumes from the studies will be influenced by the service provider portfolios used. The TSOs need to ensure that a range of reasonable scenarios are used and that the portfolios can be operated from a technical perspective.

In addition to the determination of new volumes for the period to 2020, further consideration is required in terms of the overall procurement framework in order to deliver the new capabilities in a cost-effective manner. In particular, modifications to the payment rules and use of scarcity scalars may be required to ensure that monies

are targeted to new investment while respecting the principle of technology neutrality. The TSOs will prepare recommendations and consult on these aspects in addition to the provision of volume information in July 2017. Thereafter the TSOs will provide volume forecasts on an annual basis.

4.5 SCALARS

The SEM-14-108 paper decided that scalars will be applied to the unit price of a given service received by a given provider to incentivise best outcomes and performance in service provision. The SEM-14-108 set out the following scalars:

- A performance scalar to incentivise reliability and reduce payments to unreliable providers;
- A volume scalar to protect the consumer from overpayment;
- A scarcity scalar to incentivise availability from providers at times and locations of most value to the system; and
- Product scalars to incentivise enhanced delivery of services from providers

The TSOs published a proposed Scalar Methodology Consultation⁶ paper in March 2016 and received 24 responses. Two of the proposed scalars (performance and product) are already now in operation through the current DS3 System Services contracts, and following significant discussion with industry the TSOs intend to refine these to ensure as optimal as possible scalar application. The two remaining scalars – volume and scarcity, will be considered in future procurement rounds and will therefore move into Business As Usual operations during 2017/2018.

To address the refinements to the existing scalars and to support the final detailed development of the two outstanding scalars, the TSOs will develop and consult upon proposed scalars in July 2017 with the intent to ensure full application of all four scalars in the next procurement process.

The SEM Committee notes that the TSOs were not minded to recommend the implementation of locational scarcity scalars due to the potential operational complexity involved. However, given the SEM Committee's conclusions in the CRM Locational Market Power Decision⁷, the locational nature of some services (e.g. SSRP), and the potential for deferral of network investments the SEM Committee

⁶ [EirGrid Consultation on DS3 System Services Scalar Design](#)

⁷ [SEM Committee I-SEM Capacity Remuneration Mechanism Locational Issues Decision Paper](#)



requests the TSOs to re-examine the possibility of including a locational scalar in their recommendations. It is acknowledged that such a scalar may not be implementable at the same time as the other scalars go-live but the arrangements (contracts, systems, etc.) must provide for its future implementation.

During tariff based non-competitive procurement, where there is no mechanism for the TSOs to limit the volume of potential service provision contracted it is possible that the TSOs will over-contract certain services where provision is high. It is likely therefore that the volumes scalar will become increasingly important where there is a need to maintain DS3 System Services expenditure within the expenditure cap allocated by SEM Committee. This would allow the TSOs to target expenditure to those services where contracted provision is low, and maintain expenditure within the allocated budget for where contracted provision is high. However, the Regulatory Authorities in considering the design of a volume scalar, will be cognisant of the need to maintain revenue clarity for providers.

5 SCOPING OF FUTURE COMPETITIVE PROCESS

The SEM Committee position on competitive procurement was detailed in the SEM-14-108 paper which stated the DS3 System Services programme should procure System Services through competition where possible, and tariffs where competition is not possible. A consultation⁸ on an Auction Design Proposal⁹ developed by Dot-Econ was published in December 2015. Twenty two responses were received and 19 of these (three responses were confidential) were published in April 2016¹⁰. Given the level of concerns and specific issues raised by industry related to the proposed Auction Design an Industry wide forum was held in April 2016. Industry participants were invited to give their views on the proposed Auction design and to recommend any alternative methodologies at this forum. The presentations made at the Forum were published¹¹ on 27 April 2016.

Following the level of Industry input and concern regarding the original auction design (as described in Section 4.3.2) the SEMC issued a note in May 2016¹² highlighting a delay to the implementation of Auction Design, given the need for further consideration of the issues raised.

The Regulatory Authorities have considered the industry responses and are in the process of reviewing options for competitive procurement. This initial investigative work on competitive procurement started in Q1 2017 with the detailed design phase anticipated to start in Q3 2017. The initial investigative work will focus on four main work-streams:



⁸ [DS3 SS Auction Design consultation paper](#)

⁹ [Dot Econ Auction Design proposal](#)

¹⁰ [Responses to Auction Design consultation](#)

¹¹ [Presentations made at DS3 SS Auction Design Industry Forum](#)

¹² [DS3 System Services - Notification of delay](#)

5.1 EVIDENCE FROM OTHER JURISDICTIONS

The Regulatory Authorities, have commissioned a jurisdictional analysis of procurement of System Services type products worldwide (e.g. ERCOT (Texas), California ISO, MISO (North America), UK, Elia (Belgium), TENNET (Netherlands)). Work will focus on evaluating the following key aspects and identifying potential applicability to the DS3 System services programme.

- i. System type services – review similar deployment worldwide, types of products– identify key market regions to investigate.
- ii. Key parties involved: DSO/TOS/ISO/Balancing service providers/balance responsible parties
- iii. Procurement mechanisms employed: competitive auction/tenders/short term contracts/long term contracts/investment incentives
- iv. Interaction with balancing markets for selected market regions
- v. Incentives mechanisms used in key market regions for TSO, DSO, ISO, System service providers, etc. that enhance the procurement/cost efficacy of system service utilisation in conjunction with balancing market/re-dispatch incentives.

It is hoped that by examining best international practice valuable learning can be brought to the procurement aspects of DS3 System Services. It is anticipated that this work will complete by mid-2017.

5.2 EU REQUIREMENTS AND EU BALANCING CODE

The Electricity Balancing Framework Guideline¹³ is a document that was stipulated in the Third Energy package¹⁴, and is focused on delivering harmonised requirements for Balancing services procurement and settlement, to facilitate the internal EU energy market. The Guidelines focus on the procurement and utilisation of frequency containment reserves, frequency restoration reserves and replacement reserves - and while these standard products require detailed definition it is clear that these will apply to some of the DS3 products. In general the aim of the Balancing Guidelines is to facilitate the standardisation of balancing service products

¹³ [European Commission Electricity Codes and Guidelines](#)

¹⁴ [European Union Third Energy Package](#)

and to procure balancing services and balancing capacity as close to real time as possible.

The CER and TSOs have been fully engaged on the drafting of the Guidelines to ensure that economically efficient procurement of DS3 System Services is possible. The final drafting of the Guidelines is currently underway with a vote to be taken by Member States on the final draft of the Guidelines scheduled to take place in Q1 2017. Following a Member state vote, this is then followed by a period of EU legal scrutiny, with possible amendments and a final adoption of the requirements of the Guidelines by the EU Parliament.

Until this process is complete it will not be possible to finalise the design of a competitive procurement framework, however once a clear vote has been established for the Guidelines the Regulatory Authorities will be working to ensure the DS3 procurement process takes cognisance of the likely requirements of the Balancing Guidelines into competitive procurement decisions for DS3.

5.3 ONGOING INTERACTION WITH I-SEM DELIVERY DESIGN

The Regulatory Authorities are currently engaged on possible interactions between DS3 System Services and I-SEM design. Key areas of focus include the Balancing Market design, operational constraint management and the design and delivery of the CRM auction platform and procedures. The Regulatory Authorities are committed to ensuring that a coordinated approach is taken to ensure robust design decisions are taken both in I-SEM and DS3.

5.4 EUROPEAN CLEAN ENERGY FOR ALL PACKAGE

In December 2016 the European Commission launched its proposal on a number of energy initiatives with the Clean Energy for All Europeans package¹⁵, including a new Energy Market Design, Renewable Energy Directive and Energy Efficiency Directive. While these proposals will take some time to finalise, with Member State negotiations anticipated, it will be important to ensure that the general tenets of the proposed Clean Energy package are evaluated and incorporated into the DS3 design where possible.

¹⁵ [Clean Energy for all Europeans](#)

6 INCENTIVE DEVELOPMENT

In the SEM-14-108 Decision Paper, the CER decided that an incentive mechanism should be put in place to ensure the economic procurement of system services by the TSO and to deliver the best overall value for the consumer. At a high level the SEM Committee set out that the incentive mechanism should require key performance indicators against which performance should be measured and should ensure that the procurement of system services is carried out by the TSOs in a cost-effective manner incentivising delivery of an increased level of wind penetration that does not create any perverse incentives for the TSOs. Under I-SEM it is unlikely that the current Dispatch Balancing Costs incentive mechanism will deliver the required incentives on TSOs with the introduction of the balancing market and DS3 system Services.

The Regulatory Authorities anticipate the commencement of scoping of the incentives mechanism during 2018. The outcome of the EU Balancing Guideline is key to determining the scope of any incentive mechanism and the appropriate role for both Regulatory Authorities and TSOs in the development, implementation and oversight of an incentive mechanism. The SEM Committee is of the view that any incentive programme under DS3 will be a complex body of work. In addition the development of any incentive mechanism under DS3 requires significant analysis encompassing a wide range of factors including most notably energy balancing, price controls, Key Performance Indicators and other naturally arising incentives the TSOs face in carrying out their broader duties.

The Regulatory Authorities are therefore currently considering a wide range of approaches to TSO incentivisation. It has been shown through the DBC incentives under SEM that financial incentives can help drive further efficiencies in network operation. Changes in market design bring new challenges, and with the introduction of DS3 system services the TSO will be faced with new challenges.

Current Dispatch Balancing Incentives require significant modelling ex-ante, followed by ex-post adjustments to determine the incentive payment/penalty resulting from TSO performance. There is currently no incentive on system services expenditure; however this has been identified by the SEM Committee as a requirement

By targeting incentives jointly towards system services and non-energy actions the Regulatory Authorities may be able to encourage the TSO to improve efficiency in operating the network for the benefit of consumers. Initial thinking in this area is



that by incentivising both System Services and non-energy actions together this should introduce more freedom for the TSO in the operation of the network.

It is acknowledged that relieving a transmission constraints may result in changes to system services provisions, likewise relieving an ancillary service constraint may dynamically affect transmission constraints. Therefore incentivising a single goal than two competing objectives should be beneficial for the consumer.

The Regulatory Authorities intend to further scope possible TSO incentives during 2018 and will aim to develop further industry interaction on possible incentive design following the initial scoping work.

7 KEY INTERACTIONS AND DEPENDENCIES

7.1 CRM ALIGNMENT

As noted in SEM-14-108 there is a need to consider the possible interactions with developments in the I-SEM. The SEM Committee has noted the importance of ensuring a broad consistency across the DS3 and I-SEM programmes.

It is recognised that for providers seeking to deliver new plant or significantly refurbish existing plant there will be a preference to gain investment certainty based on projected revenue streams, and that for some new entrants this will mean securing both DS3 and CRM revenues. The key aim is to ensure that timelines between CRM and DS3 are aligned to the extent possible to ensure investors have clarity over future investment decisions insofar as it is possible.

Given the delays to a DS3 System Services Competitive procurement process design it is not now possible to ensure that a DS3 auction or competitive procurement mechanism runs in advance of the CRM auctions. However it is the intention to ensure that clarity on total expenditure limits for DS3 System services is clear to 2020 (with the production of the glide-path as discussed in Section 4), and that tariffs and signals for investment are made with the publication of Volumes Tariffs and Scalar design for consultation by July 2017.

7.2 BALANCING MARKET ALIGNMENT

The EU Balancing Guidelines will stipulate stringent requirements for balancing service procurement, settlement and procedures. It will be important to align the work underway in DS3, balancing market principles and the RAs and TSOs are currently focused on assessing the likely requirements in this regard.

7.3 NON ENERGY ACTIONS ALIGNMENT

Current work is underway between the TSOs and RAs to ensure DS3 System Service utilisation and the ETA developments of non-energy actions are aligned.

8 CONCLUSION AND NEXT STEPS

This paper has set out the SEM Committee’s approach to the DS3 System Services programme of work from 2017 until competitive arrangements are in place.

It is important to note that this information paper sets out the SEM Committee’s approach to the Regulated Arrangements in detail but provides a high level approach to competitive arrangements and incentives as these items will be consulted on separately at a later stage.