

Consultation on DS3 System Services Tariffs (1 Oct 2017 – 30 April 2018)

DS3 System Services Implementation Project

2 May 2017



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Executive Summary

Introduction and Background

EirGrid and SONI are the Transmission System Operators (TSOs) in Ireland and Northern Ireland. We are responsible for maintaining a safe, secure, reliable and economical electricity system. We are also required to facilitate increased levels of renewable energy arising from energy policy objectives in Northern Ireland and Ireland.

In 2011, we established our '*Delivering a Secure Sustainable Electricity System (DS3)*' programme. The objective of the DS3 Programme, of which System Services is a part, is to meet the challenges of operating the electricity system in a safe, secure and efficient manner while facilitating higher levels of renewable energy.

The aim of the System Services work stream is to put in place the correct structure, level and type of services in order to ensure that the system can operate securely with higher levels of non-synchronous renewable generation (up to 75% instantaneous penetration). Operating in this manner will reduce the level of curtailment for wind farms and should deliver significant savings to consumers through lower wholesale energy prices.

In October 2016, the TSOs completed the procurement of 11 system services (including four new services) resulting in 107 providing units being added to separate Interim Tariff Framework Agreements in Ireland and Northern Ireland.

On 23 March 2017, the SEM Committee published an information paper on the DS3 System Services Future Programme Approach¹. 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).

In its paper, the SEM Committee sets out its view that:

- The 107 existing Interim Framework Agreements for the 11 services, due to expire in October 2017, will be extended until the end of April 2018 (procurement regulations mean that during this period no new entrants will be allowed onto the framework nor will existing providers be able to increase their contracted volumes) in order to facilitate learnings from the Qualification Trial Process to be integrated into the enduring Regulated Arrangements and to facilitate the introduction of a new panel-based procurement process;
- The TSOs will run a Regulated Tariff procurement process in Q4 2017 for the 11 services to enable new contracts to be executed on 1 May 2018 – these arrangements will be open to a wider range of service providers; and
- The TSOs will run a further Regulated Tariff procurement process for 3 new services with a contract execution date of 1 September 2018; and

¹ SEM Committee Information Paper on DS3 System Services Future Programme Approach:
<https://www.semcommittee.com/sites/semcommittee.com/files/media-files/SEM-17-017%20DS3%20System%20Services%20Future%20Approach%20Information%20Paper.pdf>

- The Regulatory Authorities will review the options for competitive procurement for enduring implementation in the coming years. This initial investigative work on competitive procurement options started in Q1 2017.

This consultation paper is focused on the tariff payment rates to apply to the existing Interim Framework Agreements for the 11 services that are being extended to the end of April 2018. The Regulatory Authorities and TSOs will separately engage in the coming months on the other aspects of the arrangements set out above.

In particular, the TSOs will consult in July 2017 on system services volume requirements, enduring scalar designs and the regulated tariffs to apply from May 2018 onwards. The regulated tariff methodology will be consistent with the principles included in the recent SEM Committee Future Programme Approach paper and will respect the “glide path” for payments set out by the SEM Committee in that same paper.

Proposed Tariff Methodology and Resulting Tariff Rates

In August 2016, the TSOs published the final Interim Tariff rates to apply for the period from 1 October 2016 through 30 September 2017. The payment rates and resulting overall budgetary allowance for the tariff year 2016/17 were a first step along a “glide path” to an agreed expenditure level of up to €235m by 2020.

Following the SEM Committee decision to extend the duration of the Interim Arrangements to the end of April 2018, it is necessary to determine a new set of tariff rates to apply for the seven month contract rollover period. In determining the proposed tariff rates, we have been guided by the following principles:

- The relative importance of the services and the associated relative weightings should be kept the same as those selected for the 2016/17 tariff year². These reflect the contribution each service will make to the immediate needs of the system, and the transitional nature of the rollover period;
- The payment rates should be set at a level that is sufficient to provide industry stakeholders with confidence in the future trajectory of payments while being mindful of the short-term impact of higher system services expenditure on consumers. Sufficient confidence in the arrangements is more likely to result in new providers entering the market, and increases in capability from existing providers, following the next procurement process which is scheduled to conclude by the end of April 2018; and
- The outcomes and learnings to date from the Interim Arrangements, particularly relating to the overall monies paid out for DS3 System Services relative to the forecast levels previously communicated to stakeholders, should be used to inform any adjustment to the rates.

² See Table2 on pg. 29 of the DS3 System Services Interim Tariffs Decision Paper <http://www.eirgridgroup.com/site-files/library/EirGrid/DS3-System-Services-Decision-Paper-on-Interim-Tariffs-FINAL.pdf>

Based on an assessment of DS3 System Services settlement outcomes for the period October 2016 through February 2017, the overall monies paid out for DS3 System Services have been less than forecasted. The payment rates for the tariff year 2016/17 were set in July 2016 ahead of completion of the Interim Tariff procurement process and final decisions on the contractual volumes for each service provider. In the period since, greater clarity has emerged on some of the key drivers of the outturn remuneration volumes.

The performance scalar has been applied since December 2016 and has resulted in lower payments to providers with historically poor performance. The tariff setting exercise completed in July 2016 used performance scalars calculated using the most up-to-date information then available on the industry average performance in percentage terms and added 10% to reflect a view that units would be expected to improve their performance over the year. However, the impact of the performance scalar has contributed to overall expenditure on System Services being lower than previously indicated to stakeholders.

We now have a better understanding of the implications of the current performance scalar methodology gained through continuous learning post go-live of the arrangements. On 13 April 2017, we published a consultation paper³ summarising the main stakeholder concerns in relation to the current methodology and outlining a number of proposals to address these concerns. We plan to implement the proposed changes to the performance scalar methodology from July 2017 onwards.

Other factors contributing to the lower than expected outturn expenditure include the challenge of forecasting system services remuneration volumes for four new services and three re-defined services, and the introduction of new product scalars designed to incentivise enhanced provision of system services.

In that context, we propose to adjust the tariff payment rates upwards to align the expected total payment levels with those previously communicated to stakeholders⁴. Based on a comparison of the scale of actual expenditure versus that forecast for the period October 2016 through February 2017, **the TSOs propose to increase all of the tariff rates by 5.3%**. The resulting proposed tariff rates are set out in Table 1 overleaf.

³ DS3 System Services Interim Performance Scalar Calculation Methodology Consultation Paper: <http://www.eirgridgroup.com/site-files/library/EirGrid/Consultation-Paper-for-Interim-Performance-Scalar-Calculation-Methodology.pdf>

⁴ Based on the assumption that current trends seen to date will continue.

Table 1: Proposed Tariff Rates for 1 October 2017 – 30 April 2018

Service Name	Unit of Payment	Proposed Rate €
Synchronous Inertial Response (SIR)	MWs ² h	0.0048
Primary Operating Reserve (POR)	MWh	3.09
Secondary Operating Reserve (SOR)	MWh	1.87
Tertiary Operating Reserve (TOR1)	MWh	1.48
Tertiary Operating Reserve (TOR2)	MWh	1.18
Replacement Reserve – Synchronised (RRS)	MWh	0.24
Replacement Reserve – Desynchronised (RRD)	MWh	0.53
Ramping Margin 1 (RM1)	MWh	0.11
Ramping Margin 3 (RM3)	MWh	0.17
Ramping Margin 8 (RM8)	MWh	0.15
Steady State Reactive Power (SSRP)	MVArh	0.22

The proposed tariff payment rates have been initially calculated in Euros. In determining the associated sterling rates, we propose to apply the same methodology as was used in 2016/17 for the interim arrangements. This methodology is consistent with that applied under the Trading and Settlement Code for the calculation of the annual capacity exchange rate i.e. the average of the forwards rates for the forthcoming year as taken over a period of 5 days prior to tariff and payment setting.

Next Steps

Responses to the consultation, setting out your views on the proposed tariff methodology and the resulting tariff rates, should be sent to DS3@eirgrid.com or DS3@soni.ltd.uk by 30 May 2017.

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1 Introduction

1.1 SONI and EirGrid

EirGrid and SONI are the Transmission System Operators (TSOs) in Ireland and Northern Ireland. It is our responsibility to manage the electricity supply and the flow of power from generators to consumers. Electricity is generated from gas, coal, peat and renewable sources (such as wind and hydro power) at sites across the island. Our high voltage transmission network then transports electricity to high demand centres, such as cities, towns and industrial sites.

We have a responsibility to enable increased levels of renewable energy to generate on the power system. However, we want to make sure that the system operates securely and efficiently, while allowing for more renewable energy. In 2010, we published the results of the “*Facilitation of Renewables*” studies. Those studies identified a metric called “*System Non-Synchronous Penetration*” (SNSP) as a useful proxy for the capability to operate the power system safely, securely and efficiently with high levels of renewable generation. SNSP is a real-time measure of the percentage of generation that comes from non-synchronous⁵ sources, such as wind generation, relative to the system demand.

The studies in 2010 identified 50% as the maximum level of non-synchronous renewable generation allowable on the power system until solutions could be found to the various technical challenges identified. If this limit had not been increased, curtailment on installed wind could have risen to over 25% per annum.

1.2 The DS3 Programme

Our ‘*Delivering a Secure Sustainable Electricity System (DS3)*’ programme sought to address the challenges of increasing the allowable SNSP up to 75% by 2020 where by the curtailment of wind would be reduced to approximately 5% per annum.

DS3 incorporates mutually reinforcing innovative technical, engineering, economic and regulatory initiatives. It is divided into three pillars:

- System Performance
- System Policies
- System Tools

DS3 is not only making the necessary operational changes to manage more renewable generation, it is also about the evolution of the wider electricity industry and implementing changes that benefit the end consumer. From the onset, the integration of wind generation presented a range of challenges previously unseen in the power sector. Through collaboration with the Regulatory Authorities and the wider electricity industry, DS3 has developed a number of innovative and progressive solutions.

⁵ Non-synchronous generators supply power to the electrical grid via power electronics. Power electronics are used to adjust the speed and frequency of the generated energy (typically associated with wind energy) to match the speed and frequency of the transmission network.

The results of the programme are now beginning to deliver benefits to the consumer. On 1 March 2016, the allowable SNSP level was increased from 50% to 55% following the successful conclusion of a 55% SNSP operational trial.

More recently, on 9 March 2017, the allowable SNSP level was increased further to 60% following a similarly successful operational trial. It is expected that similar trials will be conducted in the coming years with a view to achieving the overall goal of 75% SNSP by 2020 in a controlled manner.

1.3 DS3 System Services Process

The objective of the DS3 Programme, of which System Services is a part, is to meet the challenges of operating the electricity system in a safe, secure and efficient manner while facilitating higher levels of renewable energy.

One of the key work streams in the DS3 Programme is the System Services work stream. The aim of the System Services work stream is to put in place the correct structure, level and type of services in order to ensure that the system can operate securely with higher levels of non-synchronous renewable generation (up to 75% instantaneous penetration). Operating in this manner will reduce the level of curtailment for wind (and solar) farms and should deliver significant savings to consumers through lower wholesale energy prices.

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)⁶.

The SEM Committee's decision framework aims to achieve the following:

- Provide a framework for the introduction of a competitive mechanism for procurement of system services;
- Provide certainty for the renewables industry that the regulatory structures and regulatory decisions are in place to secure the procurement of the required volumes of system services;
- Provide certainty to new providers of System Services that the procurement framework provides a mechanism against which significant investments can be financed;
- Provide clarity to existing providers of system services that they will receive appropriate remuneration for the services which they provide;
- Provide clarity to the TSOs that the required system services can be procured from 2016 onwards in order to maintain the secure operation of the system as the level of wind increases;
- Provide clarity to the Governments in Ireland and Northern Ireland (and indeed the European Commission) that appropriate structures are in place to assist in the delivery of the 2020 renewables targets;

⁶ DS3 System Services Procurement Design and Emerging Thinking Decision Paper (SEM-14-108): <http://www.semcommittee.eu/GetAttachment.aspx?id=c0f2659b-5d38-4e45-bac0-dd5d92cda150>

- Ensure that Article 16 of Directive 2009/EC/28 is being effectively implemented (duty to minimise curtailment of renewable electricity);
- Provide assurance to consumers that savings in the cost of wholesale electricity which can be delivered through higher levels of wind on the electricity system, can be harnessed for the benefit of consumers;
- Provide assurance to consumers that they will not pay more through system services than the benefit in terms of System Marginal Price (SMP) savings which higher levels of wind can deliver⁷.

1.4 Interim and Enduring Arrangements

In its SEM-14-108 decision paper, the SEM Committee decided that the implementation of the DS3 System Services arrangements would be divided into two phases. The enduring arrangements will deliver competitive procurement, where appropriate, for the 14 services. A tariff will be applied to services where there is insufficient competition.

During the interim period, the TSOs will contract for services with all eligible providers, who will be paid at a rate, approved by the RAs, for the volume of services they are able to deliver in each trading period.

Under both arrangements, potential providers are required to participate in a procurement exercise.

In October 2016, the TSOs completed the procurement of 11 system services (including four new services) resulting in 107 providing units being added to separate Interim Tariff Framework Agreements in Ireland and Northern Ireland.

On 23 March 2017, the SEM Committee published an information paper on the DS3 System Services Future Programme Approach⁸. 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 Stocktake.

In its paper, the SEM Committee sets out its view that:

- The 107 existing Interim Framework Agreements for the 11 services, due to expire in October 2017, will be extended until the end of April 2018 (procurement regulations mean that during this period no new entrants will be allowed onto the framework nor will existing providers be able to increase their contracted

⁷ Note: the composition of the price that will be paid by end consumers for wholesale electricity will change significantly following the introduction of the I-SEM trading arrangements. The savings delivered by DS3 will be split across the imbalance settlement, balancing costs, the price in the ex-ante markets and the Capacity Remuneration Mechanism.

⁸ SEM Committee Information Paper on DS3 System Services Future Programme Approach: <https://www.semcommittee.com/sites/semcommittee.com/files/media-files/SEM-17-017%20DS3%20System%20Services%20Future%20Approach%20Information%20Paper.pdf>

volumes) in order to facilitate learnings from the Qualification Trial Process to be integrated into the enduring Regulated Arrangements and to facilitate the introduction of a new panel-based procurement process;

- The TSOs will run a Regulated Tariff procurement process in Q4 2017 for the 11 services to enable new contracts to be executed on 1 May 2018 – these arrangements will be open to a wider range of service providers; and
- The TSOs will run a further Regulated Tariff procurement process for 3 new services with a contract execution date of 1 September 2018⁹; and
- The Regulatory Authorities will review the options for competitive procurement for enduring implementation in the coming years. This initial investigative work on competitive procurement options started in Q1 2017.

This consultation paper is focused on the tariff payment rates to apply to the existing Interim Framework Agreements for the 11 services that are being extended to the end of April 2018. The Regulatory Authorities and TSOs will separately engage in the coming months on the other aspects of the arrangements set out above.

1.5 Transition to New Technologies

We are required to procure system services in an efficient manner. Given the increasing reliance on system services, we are of the opinion that these should only be paid for where delivery and quality of performance can be measured. We therefore need to establish reliable methods for measuring quality of service provision for all 14 services.

We have been able to build confidence in traditional power system technologies with many years of proven experience. The large scale deployment of new technologies through the DS3 System Services enduring arrangements is intended to reduce total costs and facilitate the delivery of public policy objectives. However, we will need to be confident that this deployment will not inadvertently undermine the resilience and security of the power system. As TSOs, we have a duty to maintain system stability and avoid loss of supply. We therefore need to take steps to identify the associated risks, obtain information about the capability of new types of service provider and manage this transition in a prudent fashion.

The interim arrangements have provided an ideal opportunity to establish the mechanisms by which the characteristics of new technologies can become “Proven” and “Measureable” for the widest range of non-energy system service provision possible.

We are currently engaged in a Qualification Trial Process¹⁰ which aims to provide potential providers with an opportunity to demonstrate the capabilities of technologies

⁹ The TSOs informed the SEM Committee of the necessity to stagger the introduction of the three fast-acting services (FFR, FPFAPR and DRR). This longer implementation timeline will allow for learnings from the Qualification Trial Process to be integrated into the arrangements and for the TSOs to develop the appropriate contractual definitions for technical product delivery, product response criteria, and settlement and performance monitoring system requirements for these three services.

that have not previously delivered system services on a system with similar characteristics to that of the all-island system which we operate. The Qualification Trial Process is the mechanism by which new unproven technology providers of DS3 System Services can ultimately gain access to DS3 System Services contracts in future central procurement processes.

We will also need to be able to measure the quality of provision of “fast” services i.e. Fast Frequency Response (FFR), Fast Post-Fault Active Power Recovery (FPFAPR) and Dynamic Reactive Response (DRR) when these are procured in 2018. We are also exploring these “measurability” aspects during the interim phase as part of the Qualification Trial Process.

Following an open competitive procurement process, the Qualification Trial Process began on 1 March 2017 and will run through to 31 August 2017. A total of 12 contracts were executed covering 15 trials (seven “provenability” trials and eight “measurability” trials).

1.6 Purpose of this Paper

The purpose of this paper is to provide stakeholders with the information that they need to assess the proposed payment rates for the 11 system services during the contract rollover period from 1 Oct 2017 through to 30 April 2018.

1.7 Structure of this Paper

This paper provides a high level overview of the process that is being followed to implement the DS3 System Services arrangements, which are necessary if higher amounts of non-synchronous renewable generation are to be accommodated on the system. It provides a description of the system services, and the benefits being obtained through the interim arrangements.

The paper also describes the principles and methodology that have been used to calculate the proposed payment rates. Subsequently the rates and the potential impact on end user tariffs are presented.

The paper concludes with details of how to respond to the consultation.

¹⁰ DS3 System Services Qualification Trial Process Decision Paper:
<http://www.eirgridgroup.com/site-files/library/EirGrid/DS3-System-Services-Decision-Paper-on-Qualification-Trial-Process-FINAL.pdf>

2 System Services Required

2.1 Overview of System Services

EirGrid and SONI have licence and statutory obligations to procure sufficient system services to enable efficient, reliable and secure power system operation. The contractual arrangements and payment rates in Ireland and Northern Ireland were harmonised following the introduction of the SEM. Seven products were procured under these Harmonised Ancillary Services (HAS) arrangements.

New services are required to support a move to higher levels of non-synchronous generation. Four new services were introduced from 1 October 2016 following the commencement of the new DS3 System Services arrangements and a further 3 services will be introduced in 2018 (Fast Frequency Response, Dynamic Reactive Response, and Fast Post Fault Active Power Recovery). These will be required to maintain the resilience of the power system at SNSP levels of up to 75% by 2020.

The Grid Codes do not oblige generators, or other service providers, to deliver the new services. However through the DS3 System Services arrangements, the standards to which providers will offer these on a commercial basis are being developed. This will necessitate a consideration of a range of issues including standards, performance monitoring, and settlement issues. These are being dealt with outside the scope of this paper. Table 2 provides a high-level summary of the DS3 System Services products.

Table 2: Summary of DS3 System Services Products

Service Name	Abbreviation	Unit of Payment	Short Description
Synchronous Inertial Response	SIR	MWs ² h	(Stored kinetic energy)* (SIR Factor – 15)
Fast Frequency Response	FFR	MWh	MW delivered between 2 and 10 seconds
Primary Operating Reserve	POR	MWh	MW delivered between 5 and 15 seconds
Secondary Operating Reserve	SOR	MWh	MW delivered between 15 to 90 seconds
Tertiary Operating Reserve 1	TOR1	MWh	MW delivered between 90 seconds to 5 minutes
Tertiary Operating Reserve 2	TOR2	MWh	MW delivered between 5 minutes to 20 minutes
Replacement Reserve – Synchronised	RRS	MWh	MW delivered between 20 minutes to 1 hour
Replacement Reserve – Desynchronised	RRD	MWh	MW delivered between 20 minutes to 1 hour
Ramping Margin 1	RM1	MWh	The increased MW output that can be delivered with a good degree of certainty for the given time horizon.
Ramping Margin 3	RM3	MWh	
Ramping Margin 8	RM8	MWh	
Fast Post Fault Active Power Recovery	FPFAPR	MWh	Active power >90% within 250 ms of voltage >90%
Steady State Reactive Power	SSRP	MVArh	MVAr capability*(% of capacity that capability is provided)
Dynamic Reactive Response	DRR	MWh	MVAr capability during large (>30%) voltage dips

3 Tariff Methodology

3.1 Overview

There are 107 providing units currently under contract for provision of 11 DS3 System Services. The existing Ireland and Northern Ireland Interim Framework Agreements executed on 1 October 2016 and originally due to terminate on 30 September 2017 will be extended until 30 April 2018.

In this section, the principles and high-level approach that the TSOs propose to use to set the DS3 System Services payment rates for the “rollover” contract period between 1 October 2017 and 30 April 2018 are described¹¹.

Procurement regulations mean that for the period of the contract extension:

- It is not possible to add new providing units on to the framework; and
- It is not possible for those providing units currently on the framework to increase their contracted volumes for each service.

In that context, the next section sets out the principles and high-level approach to determination of the payment rates for DS3 System Services for the period of the extension of the Interim Tariff arrangements.

3.2 Calculation of Rates

In determining the proposed tariff rates to apply for the seven month contract rollover period, we have been guided by the following principles:

- The relative importance of the services and the associated relative weightings should be kept the same as those selected for the 2016/17 tariff year¹². These reflect the contribution each service will make to the immediate needs of the system, and the transitional nature of the rollover period;
- The payment rates should be set at a level that is sufficient to provide industry stakeholders with confidence in the future trajectory of payments while being mindful of the short-term impact of higher system services expenditure on consumers. Sufficient confidence in the arrangements is more likely to result in new providers entering the market, and increases in capability from existing providers, following the next procurement process which is scheduled to conclude by End April 2018; and
- The outcomes and learnings to date from the Interim Arrangements, particularly relating to the overall monies paid out for DS3 System Services relative to the

¹¹ A separate new tariff methodology will be applied for the contracts executed in May 2018 and August 2018 – the new tariff methodology will be the subject of a separate consultation in July 2017.

¹² See Table 2 on pg. 29 of the DS3 System Services Interim Tariffs Decision Paper <http://www.eirgridgroup.com/site-files/library/EirGrid/DS3-System-Services-Decision-Paper-on-Interim-Tariffs-FINAL.pdf>

forecast levels previously communicated to stakeholders, should be used to inform any adjustment to the rates.

Based on an assessment of DS3 System Services settlement outcomes for the period October 2016 through February 2017, the overall monies paid out for DS3 System Services have been less than forecasted. The payment rates for the tariff year 2016/17 were set in July 2016 ahead of completion of the Interim Tariff procurement process and final decisions on the contractual volumes for each service provider. In the period since, greater clarity has emerged on some of the key drivers of the outturn remuneration volumes.

The performance scalar has been applied since December 2016 and has resulted in lower payments to providers with historically poor performance. The tariff setting exercise completed in July 2016 used performance scalars calculated using the most up-to-date information then available on the industry average performance in percentage terms and added 10% to reflect a view that units would be expected to improve their performance over the year. However, the impact of the performance scalar has contributed to overall expenditure on System Services being lower than previously indicated to stakeholders.

We now have a better understanding of the implications of the current performance scalar methodology gained through continuous learning post go-live of the arrangements. On 13 April 2017, we published a consultation paper¹³ summarising the main stakeholder concerns in relation to the current methodology and outlining a number of proposals to address these concerns. We plan to implement the proposed changes to the performance scalar methodology from July 2017 onwards.

Other factors contributing to the lower than expected outturn expenditure include the challenge of forecasting remuneration volumes for four new services and three re-defined services, and the introduction of new product scalars designed to incentivise enhanced provision of system services.

In that context, we propose to adjust the tariff payment rates upwards to align the expected total payment levels with those previously communicated to stakeholders¹⁴. Based on a comparison of the scale of actual expenditure versus that forecast for the period October 2016 through February 2017, **the TSOs propose to increase all of the tariff rates by 5.3%**. The resulting proposed tariff rates are set out in Table 3 overleaf.

¹³ DS3 System Services Interim Performance Scalar Calculation Methodology Consultation Paper: <http://www.eirgridgroup.com/site-files/library/EirGrid/Consultation-Paper-for-Interim-Performance-Scalar-Calculation-Methodology.pdf>

¹⁴ Based on the assumption that current trends seen to date will continue.

Table 3: Proposed Tariff Rates for 1 October 2017 – 30 April 2018

Service Name	Unit of Payment	Proposed Rate €
Synchronous Inertial Response (SIR)	MWs ² h	0.0048
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Ramping Margin 1 (RM1)	MWh	0.11
Ramping Margin 3 (RM3)	MWh	0.17
Ramping Margin 8 (RM8)	MWh	0.15
Steady State Reactive Power (SSRP)	MVArh	0.22

3.3 Exchange Rate Methodology

The proposed tariff payment rates have been initially calculated in Euros. In determining the associated sterling rates, we propose to apply the same methodology as was used in 2016/17 for the interim arrangements. This methodology is consistent with that applied under the Trading and Settlement Code for the calculation of the annual capacity exchange rate i.e. the average of the forwards rates for the forthcoming year as taken over a period of 5 days prior to tariff and payment setting.

3.4 Potential Impact on End User Tariffs

The tariff payment rates set out in this paper will only apply for the contract rollover period from 1 October 2017 through 30 April 2018¹⁵. The rates proposed would potentially increase the total payments for system services to existing providers by approximately €2m during this seven month period¹⁶.

The increase in payment rates will have an impact on the Capacity Payment Mechanism (CPM) “pot”. The CPM is a fixed revenue mechanism which collects a pre-determined amount of money from suppliers. This “pot” of money is then paid to available capacity in accordance with rules set out in the SEM Trading and Settlement Code.

However, it is the SEM Committee rather than the TSOs that is responsible for determining the appropriate value of the CPM “pot”. The SEM Committee will set out the impact of the final DS3 System Services tariff rates on the CPM “pot”. It would be expected that increases in the System Services tariffs would reduce the size of the CPM “pot”.

¹⁵ The TSOs are undertaking separate analyses and consultation to determine the regulated tariff rates that will apply from 1 May 2018.

¹⁶ Annual equivalent of c. €3.5m

4 Benefits Provided by the Interim Phase

4.1 Overview

When determining the payment rates for the interim contract rollover period, we have considered the benefits that can be achieved both in the short term and long term. The transition to new trading arrangements for wholesale electricity in Q2 2018, including the interaction between the system services and the balancing markets, means that it is not straightforward to model the impact of the enduring DS3 arrangements on end user prices at present. However savings are expected to be obtained across a number of areas including the Capacity Remuneration Mechanism, ex-ante trading of wholesale electricity, the imbalance price and in the cost of balancing the system.

Further evolution of the wholesale market to incorporate the requirements of the Electricity Balancing Network Code, will also be relevant to a quantitative assessment of the long term benefits of DS3 System Services. What is clear though is that a higher utilisation of non-synchronous sources of electricity, facilitated by an increase in SNSP¹⁷, will reduce costs for end users when compared to the current maximum levels that can be accommodated.

As already discussed in Section 1.5, since the go-live of the Interim Arrangements in October 2016 we have also commenced a Qualification Trial Process which aims to provide potential providers with an opportunity to demonstrate the capabilities of technologies that have not previously delivered system services on a system with similar characteristics to that of the all-island system which we operate, and to establish appropriate measurement standards for the three fast-acting services - FPFAPR, DRR and FFR. The Qualification Trial Process is the mechanism by which new unproven technology providers of DS3 System Services can ultimately gain access to DS3 System Services contracts in future central procurement processes.

The extension of the existing contractual arrangements will allow for the learnings from the Qualification Trial Process to be fully integrated into the enduring regulated arrangements, informing the setting of relevant standards and processes as required.

The Interim Arrangements have also allowed us to establish and bed-in the commercial arrangements and TSO systems and processes (e.g. settlement, performance monitoring) that will ultimately underpin the enduring approach.

This remainder of this section focuses on the benefits already obtained from DS3, and other direct financial benefits to consumers arising from the arrangements.

4.2 Benefits Already Obtained from DS3

On 2 November 2016, we commenced an operational trial to assess system behaviour

¹⁷ This will require the full range of changes delivered by DS3, not only the system services

with higher allowable levels of SNSP up to 60%. This was made possible by the introduction of the new control centre tools and operational policies developed over the last number of years.

The trial has shown that with the current tools and services and the generation portfolio that has been available, it is possible to maintain system stability up to 60% SNSP. Following a successful conclusion to the trial, the allowable SNSP level was permanently increased to 60% from 9 March 2017. This follows on from a previous successful trial and associated increase in allowable SNSP from 50% to 55% in March 2016.

Operating the system with SNSP up to the higher limit of 60% reduces the curtailment of wind, and consequentially reduces constraint costs in the SEM.

The increase in the SNSP limit to 60% should provide substantially greater benefit as the amount of wind farms connecting to the Ireland and Northern Ireland power system increases in the coming years. This is because there will be a larger number of hours when the total amount of wind generation results in SNSP exceeding the 50% limit that was originally in place.

4.3 Direct Financial Benefits for Consumers

The introduction of four new services, and the associated increase in expenditure on DS3 System Services, has contributed to the recent increase in allowable SNSP to 60% with a direct benefit to consumers through reduced wind curtailment.

In addition, the higher level of SNSP (60%) will be reflected in the constraint forecasts used to calculate the Imperfections Tariff for 2017/18. This will result in a lower tariff than would have otherwise been put in place. Should it be possible to raise the SNSP limit further during this period, it would reduce the actual dispatch balancing costs further. Any further reduction in these costs would be passed back to suppliers through reductions in the Imperfections Tariff in subsequent years¹⁸.

In addition, as already outlined in Section 3.4, it would be expected that the increases in the System Services tariffs set out in this paper would reduce the size of the CPM “pot”. The SEM Committee will set out the impact of the final DS3 System Services tariff rates on the CPM “pot” in a consultation later this year.

In the longer term, more savings will be made through further increases in SNSP. Savings are also expected to be obtained across a number of areas including the Capacity Remuneration Mechanism, ex-ante trading of wholesale electricity, the imbalance price and in the cost of balancing the system.

¹⁸ The Imperfections Tariff is set to recover the forecast costs. The tariff for future years is adjusted to reflect any over or under recovery to ensure that customers are only charged for the actual costs incurred in balancing the system.

5 Next Steps

5.1 Consultation Responses

EirGrid and SONI welcome feedback on the topics discussed within this paper, in particular your views on the proposed tariff principles and methodology and the resulting tariff rates. Your feedback will be used to inform the final payment rates that are submitted to the RAs for approval.

Responses should be submitted to DS3@soni.ltd.uk or DS3@EirGrid.com before 30 May 2017.

It would be helpful if responses are not confidential. If you require your response to remain confidential, you should clearly state this on the coversheet of the response. We intend to publish all non-confidential responses. Please note that, in any event, all responses will be shared with the Regulatory Authorities to inform their approval of the final payment rates.