

# **DS3 System Services Tariffs (1 Oct 2017 – 30 April 2018) RECOMMENDATIONS PAPER**

DS3 System Services Implementation Project

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21 July 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.

Following the SEM Committee decision<sup>1</sup> 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.

**Following a stakeholder consultation held during May 2017, this paper sets out our recommendation, approved by the SEM Committee, on the tariff payment rates to apply to the existing Interim Framework Agreements for the 11 system services that are being extended to the end of April 2018.**

## Tariff Rates

In our consultation paper<sup>2</sup>, we proposed to adjust the tariff payment rates upwards to align the expected total payment levels with those previously communicated to stakeholders. Based on a comparison of the scale of actual expenditure versus that forecast for the period October 2016 through February 2017, the TSOs proposed to increase all of the tariff rates by 5.3%.

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<sup>1</sup> 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>

<sup>2</sup> Consultation on DS3 System Services Tariffs (1 Oct 2017 – 30 April 2018): [http://www.eirgridgroup.com/site-files/library/EirGrid/OPI\\_INV\\_Paper\\_DS3-SS-Rollover-Tariffs-Consultation-FINAL.pdf](http://www.eirgridgroup.com/site-files/library/EirGrid/OPI_INV_Paper_DS3-SS-Rollover-Tariffs-Consultation-FINAL.pdf)

Six non-confidential responses to the consultation were received. The majority of the comments received focused on the following items:

- Size of the proposed tariff rate increase relative to the SEM Committee annual cap 'Glide-Path';
- Interactions with the energy and capacity markets; and
- Impact of performance scalar on revenues.

The views of respondents have been summarised and addressed in this paper.

Following consideration of the responses received, we have decided to recommend implementation of our original proposal i.e. increase all of the tariff rates by 5.3%.

The tariff rates to apply for the period from 1 October 2017 through 30 April 2018 are set out in Table 1.

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

Service Name	Unit of Payment	Proposed Rate €
Synchronous Inertial Response (SIR)	MWs <sup>2</sup> 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 tariff payment rates have been initially calculated in Euros. In determining the associated sterling rates, we will 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.

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# 1 Introduction and Background

## 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-synchronous<sup>3</sup> 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.

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<sup>3</sup> 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)<sup>4</sup>.

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;

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<sup>4</sup> 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 deliver<sup>5</sup>.

## 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 Approach<sup>6</sup>. 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

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<sup>5</sup> 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.

<sup>6</sup> 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 2018<sup>7</sup>; 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 recommendations 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 are currently consulting on the proposed enduring regulated tariff framework and rates<sup>8</sup> to apply from May 2018 onwards as well as the proposed enduring scalar designs<sup>9</sup>. Responses to the consultation, preferably structured in line with the specific questions raised in the papers should be sent to [DS3@eirgrid.com](mailto:DS3@eirgrid.com) or [DS3@soni.ltd.uk](mailto:DS3@soni.ltd.uk) by 21 August 2017.

## 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

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<sup>7</sup> 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.

<sup>8</sup> DS3 System Services Enduring Regulated Tariffs Consultation Paper:  
<http://www.eirgridgroup.com/site-files/library/EirGrid/DS3-System-Services-Enduring-Tariffs-Consultation-Paper.pdf>

<sup>9</sup> DS3 System Services Enduring Scalar Design Consultation Paper:  
<http://www.eirgridgroup.com/site-files/library/EirGrid/DS3-System-Services-Enduring-Scalar-Design-Consultation-Paper.pdf>

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 Process<sup>10</sup> 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. 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

Following consideration of the responses to the consultation we are publishing this recommendations paper which has been approved by the SEM Committee.

The purpose of this paper is to provide stakeholders with information on our recommendations in relation to the tariff rates to apply for the period from 1 October 2017 through 30 April 2018.

## 1.7 Consultation on Interim Tariff Rates

In May 2017, EirGrid and SONI published a consultation paper covering the proposed tariff payment rate to apply for the “rollover contract” period from 1 October 2017 through 30 April 2018. The consultation paper provided stakeholders with information about our proposals and a guide to the consultation process.

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<sup>10</sup> 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>

Stakeholders were requested to provide feedback on the topics discussed within the consultation paper, in particular their views on the proposed tariff principles and methodology and the resulting tariff rates.

## **1.8 Structure of this Paper**

This paper provides a high level overview of the stakeholder responses to the consultation on the various key elements. It also sets out our response to the issues raised by stakeholders and our final recommendation on the tariff rates to apply for the “rollover contract” period from 1 October 2017 through 30 April 2018.

Section 2 provides an overview of the System Services required to support a move to operation with higher levels of non-synchronous generation.

Section 3 provides information on the number and type of responses received to the consultation.

Section 4 begins by providing an overview of the tariff determination methodology proposed in the consultation paper. Stakeholder comments on the proposal are then presented and the TSOs’ response provided.

The final tariff rates are then presented in Section 4.

Finally, Section 5 provides a brief summary of the key recommendations and the final resulting tariff rates.

## 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 <sup>2</sup> 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 MVar capability is achievable)
Dynamic Reactive Response	DRR	MWh	MVar capability during large (>30%) voltage dips

# 3 Responses to Consultation

Six non-confidential responses to the consultation were received from:

- Bord Gáis Energy
- Bord na Móna
- Energia
- ESB GWM
- Power NI PPB
- Demand Response Aggregators of Ireland

The views of respondents have been summarised and addressed in this paper. A number of respondents provided very specific replies, often reflecting the respondents' particular circumstances. In keeping with previous DS3 System Services consultation papers, all responses have been published alongside this recommendations paper. In addition, all responses were shared with the Regulatory Authorities to inform their approval of the final payment rates set out in this paper.

A number of respondents replied with comments outside the scope of this consultation. These have been or will be dealt with, as appropriate, in other consultations or fora. They include:

- Grid Code requirements; and
- Design of the Capacity Remuneration Mechanism.

# 4 Tariff Rates

## 4.1 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.

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 this chapter, the principles and high-level approach that the TSOs proposed in the consultation paper to use to set the DS3 System Services payment rates for the “rollover” contract period between 1 October 2017 and 30 April 2018 are described<sup>11</sup>.

Stakeholder comments on the proposals are then presented and the TSOs’ response provided.

The final tariff rates are then set out as well as the exchange rate methodology to apply for conversion of the rates from Euro to Sterling.

## 4.2 Proposals set out in the Consultation Paper

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 that context, the TSOs published a consultation paper in May 2017 where we set out the principles we used to guide our determination of the proposed tariff rates for the period of the extended arrangements, as well as the resulting tariff rates themselves.

The principles we used to guide our determination of the proposed tariff rates were as follows:

- The relative importance of the services and the associated relative weightings should be kept the same as those selected for the 2016/17 tariff year<sup>12</sup>. These

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<sup>11</sup> A separate new tariff methodology will be applied for the contracts executed in May 2018 and August 2018 – the new tariff methodology is the subject of a separate on-going consultation.

<sup>12</sup> 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>

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.

The TSOs conducted 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 were less than forecasted. There were a number of reasons for this.

Firstly, 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.

For example, 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.

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, in our consultation paper we proposed to adjust the tariff payment rates upwards to align the expected total payment levels with those previously communicated to stakeholders<sup>13</sup>. Based on a comparison of the scale of actual expenditure versus that forecast for the period October 2016 through February 2017, **the TSOs proposed to increase all of the tariff rates by 5.3%.**

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<sup>13</sup> Based on the assumption that current trends seen to date will continue.



## 4.3 Stakeholder comments on Proposals

The increasing importance of the DS3 System Services revenue stream was highlighted by several respondents particularly in the context of on-going changes to the energy and capacity markets and the associated revenue uncertainty.

In that context, the majority of the comments received focused on the following items:

- Size of the proposed tariff rate increase relative to the SEM Committee annual cap 'Glide-Path';
- Interaction with the energy and capacity markets; and
- Impact of performance scalar on revenues.

A number of other issues were also raised by individual respondents. These related to topics like DS3 System Services procurement and settlement.

The respondents' comments and our responses are covered in Sections 4.3.1 – 4.3.4.

### 4.3.1 Scale of increase versus SEM Committee "Glide-Path"

There was a significant level of commentary on our proposal to increase tariff rates by 5.3% for the 7 month period between 1 October 2017 and 30 April 2018.

The following provides a high-level summary of the comments received:

- One respondent expressed disappointment with the scale of the increase (5.3%) and stated that this approach does not provide the required confidence for investors to develop new, flexible technologies for providing fast services. The respondent stated that the RAs' glide path is completely contradicted by the TSOs' proposal to maintain the same DS3 expenditure and the first opportunity to provide investment confidence has been undermined. To ensure investor interest in DS3, the respondent expressed the view that more transparency is critical and that it is imperative that the logic behind tariff setting, scalar design, forecast volumes and overall spending is completely transparent and included in the upcoming consultation in July of 2017.
- One respondent stated that the tariff consultation paper contains little information upon which comment can be provided. The respondent also stated that the 5.3% increase proposed appears to only cover the money which wasn't paid out in the early months and therefore the 5.3% uplift merely reflects what the 2016/17 rates should have been to pay out the 2016/17 target amount. The respondent also expressed the view that this does not provide potential investors or existing providers with confidence that the additional money previously promised, will be paid in the future. The respondent indicated that they would have expected approximately a 50% increase to keep the target payments increasing along the 'glide path' previously communicated by SEM Committee. The respondent expressed the view that the small increase in DS3 System Services payment from HAS does not encourage the existing generators to increase levels of provision of services either, and that due to the failure to properly reward the

provision of DS3 services, consumers are receiving disproportionate value for money. The respondent stated that this will damage the scope for investment, will deliver a worse overall outcome in the longer term, and thus a more balanced approach must be established.

- One respondent commented that the 5.3% proposed increase in rates for the 7 month period appears insufficient by a large margin. The respondent stated that the capped increase between 2017 and 2016 is 53% (i.e. €115m/€75m), that this is without budgetary provisions to pay for fast services, and that this is extremely low and totally out of kilter with the aforementioned 53% increase for 2017 versus 2016 or for the 35% increase (i.e. €155m/€115m) for 2018 versus 2017.
- One respondent stated that a straightforward application of the originally proposed straight-line glide path to the development of DS3 system services tariffs would result in an increase in the tariff rate of approximately 53%. The respondent agreed that it important to factor in the potential short-term impact of such increases on consumers but disagreed with the proposed level of tariff increase of 5.3%, as they do not consider that it is sufficient to attract investment. The respondent argued that that the proposed level of increase doesn't provide certainty to new providers regarding future trajectory of payments, against which they can finance investments. The respondent expressed the view that instead of providing investor certainty, the proposed tariff increase of just 5.3%, will only serve to perpetuate investor nervousness and stifle DS3 system services development.
- One respondent stated that they are still awaiting the analysis and methodology used to determine the level of the expenditure cap and glide-path that the SEM Committee has determined appropriate. The respondent also expressed the view that in the absence of further detail on how the proposed increase of 5.3% was derived, the direct implication is that the under expenditure resulting from the application of the Performance Scalar is being recycled to increase the tariff rates in the extension period. The respondent stated that if this is the case, it would fundamentally undermine the good faith shown by the industry since the beginning of the interim arrangements where issues arising from the current implementation of the performance scalar were raised by the industry and a process of open engagement undertaken to address these issues with the TSOs. The respondent stated that proposals to deny resettlement to the revised performance scalar framework while representing the under expenditure as a subsequent increase in the tariff rates is manifestly unfair and damaging to the confidence of industry stakeholders rather than supportive of its instillation.
- One respondent stated that the proposal in the paper does not provide the necessary signals with the seemingly arbitrary and inadequate 5.3% increase being far short of what would be expected of the stated 'glide path'. The respondent commented that there is a level of detail lacking in the paper that hinders analysis of the proposal and that whilst the TSOs have committed to consulting on enduring scalars and tariffs in July of this year, the lack of sight of future tariffs in this paper combined with the wholly inappropriate 5.3% increase

will not precipitate the investment needed in System Services. The respondent also expressed concern that the tone of DS3 papers has shifted from an “available budget” to a “cap” and with a view that the cap does not need to be reached. Without adequate remuneration, the respondent expressed the view that stakeholders will not invest in new or existing generation, and therefore strongly urged the RAs to reconsider the proposal and revert to a figure that is more representative of the stated ‘glide path’ and one that restores investor confidence.

### TSOs’ Response

One of the principles used to determine the proposed rates was a desire 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. As set out in the consultation paper, the proposed increase of 5.3% was derived from a comparison of the scale of actual expenditure versus that forecast for the period October 2016 through February 2017. The under expenditure was due to a number of factors with no single issue solely responsible. The rates were set in advance of the conclusion of the procurement process i.e. before the successful tenderers were known and contracted volumes finalised. Therefore assumptions and/or forecasts had to be made on the following key items, amongst others:

- The likely contractual volumes for existing and new providers for all 11 services;
- System services remuneration volumes for the four new services;
- System services remuneration volumes for the three re-defined services;
- The impact of new product scalars designed to incentivise enhanced provision of system services; and
- The impact of the new performance scalar.

Clearly, the outturn volumes and associated expenditure have deviated from that forecasted. We therefore proposed in the consultation to adjust the tariff payment rates upwards to align the expected total payment levels with those previously communicated to stakeholders.

The TSOs agree that an increase in tariff rates of 5.3% is not sufficient to deliver the investment required. However, without the ability to add new entrant service providers to the framework or for contracted parties to increase their contracted volumes for the duration of the arrangements<sup>14</sup>, and given that the arrangements are only being extended by 7 months, it is the TSOs’ view that it is unlikely that significant investment would be delivered even if rates were set at higher more ‘investable’ levels.

More generally, there are numerous challenges to achieving investment certainty for new or enhanced system service providers, including contract length of service provision and price certainty for system service tariffs. These challenges, and possible mitigation

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<sup>14</sup> This is discussed further in Section 4.3.4.

options to contract length and price certainty challenges, are discussed at length in the recently published Enduring Tariffs Consultation Paper.

The enduring regulated tariff payment structures and associated tariff rates set out in that paper have been designed with the purpose of delivering investment in needed system services capability while ensuring payments stay within the overall expenditure “glide-path” set out by the SEM Committee.

Stakeholder comments on the performance scalar arrangements are separately addressed in Section 4.3.3.

#### **4.3.2 Interaction with other markets**

Several respondents highlighted the interaction with the energy and capacity markets as being a significant source of concern, for example:

- One respondent stated that DS3 System Services is an essential component of Service Provider revenues, forming one of the three key revenue legs (the others being Energy and Capacity) The respondent commented that there are significant commercial issues relating to the low level of increased proposed tariffs of just 5.3% for the seven month period, given the lack of opportunity for adequate cost recovery across the energy, capacity and system services revenue streams such as to enable a commercial return on investment for existing assets. The respondent further stated that annual industry capacity payments look likely to fall by between €200 and €350m by 2020, which would not be offset by DS3 System Services revenues at the rates of tariff increase proposed, resulting in a potential revenue gap of between circa €194m to €344m.
- Two respondents stated that the increase in expected expenditure from HAS to the interim DS3 System Services arrangements was matched by a reduction in the CPM pot calculated for the same period. One of the respondents commented that while from the end user’s perspective, the move to the interim DS3 arrangements was cost neutral, from a service provider’s perspective it did not provide any increase in remuneration across revenue streams for the value that these services are providing. The other respondent commented that the CPM pot for 2017 was reduced to reflect the expected increase in DS3 System Services revenues but since actual DS3 System Services payments have been less than expected, the CPM pot was understated.
- One respondent commented that the consultation states that it expects that increases in the system service tariffs as proposed will act to reduce the CPM pot. The respondent stated that where the proposed increase in tariff rates is derived from under-expenditure being recycled from the previous year, in effect the CRM pot will be reduced twice for the same DS3 System Services expenditure.
- One respondent stated that a solution to the artificial reduction in generator revenues would be to retrospectively resettle the DS3 System Services payments for 2016/17 using the rates uplifted by 5.3%. Another respondent urged the

TSOs to support re-settlement to reflect the revised Performance Scalar framework from the beginning of the interim DS3 arrangements.

- One respondent commented that the system services approach is not technology neutral as there are new entrants in to the DS3 System Service market that have no exposure to the capacity market and therefore this methodology will see a transfer from traditional service providers to these new entrants. The respondent commented that on average these traditional services providers, who continue to be the mainstay of service provision, are, at best, left neutral even though additional opportunity costs are potentially incurred due to the greater risk of incurring penalties. The respondent stated that traditional service providers are therefore only being subjected to greater risk and are not being rewarded for greater service provision of necessary products.
- One respondent stated that the consultation sets the value of system services against the reduction in wholesale energy resulting from increasing the level of zero marginal cost generation and that while this is one measure of the value of services delivered it is not complete in that in periods of high wind the availability of system services is necessary to maintain system security. The respondent commented that it is possible today to assure system security by curtailing available wind capacity and increasing conventional generation but in the longer term this will not necessarily be the case and it is not sustainable to value service provision solely based on their availability's impact on wholesale prices.

### TSOs' Response

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.

In our consultation paper, we set out at a high-level our view that the proposed system services payments could have an impact on the CPM "pot". However, it is the SEM Committee rather than the TSOs that is responsible for determining the appropriate value of the CPM "pot".

For example, in May 2016, the SEM Committee held a consultation on the "Fixed Cost of a Best New Entrant Peaking Plant, Capacity Requirement and Annual Capacity Payment Sum For Trading Year 2017". The associated SEM Committee decision paper<sup>15</sup> published on 10 August 2016 set out the impact of the final DS3 System Services tariff rates on the CPM "pot".

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<sup>15</sup> Fixed Cost of a Best New Entrant Peaking Plant, Capacity Requirement and Annual Capacity Payment Sum For Trading Year 2017 - Decision Paper:  
[https://www.semcommittee.com/sites/semcommittee.com/files/media-files/SEM-16-044 Final Decision ACPS 2017.pdf](https://www.semcommittee.com/sites/semcommittee.com/files/media-files/SEM-16-044%20Final%20Decision%20ACPS%202017.pdf)

On 10 July 2017, the SEM Committee published a consultation paper<sup>16</sup> on the “Fixed Cost of a BNE Peaking Plant, Capacity Requirement & ACPS for Trading Year 2018” which sets out the impact that the new DS3 System Services tariff rates will have on the CPM “pot” for the period through to go-live of the Capacity Remuneration Mechanism.

With regards to the comments on technology neutrality, in so far as possible we have designed the system services arrangements in a technology neutral manner. This includes the definition of the services themselves, as well as the development of contracts and delivery of procurement processes. We do agree however with the comment that different technologies will be exposed to different risks depending on the markets in which they compete (system services, energy, and capacity). The TSOs acknowledge that investments in DS3 System Services capability will not necessarily be fully recovered by the DS3 System Services arrangements alone, in particular for providing units active in the energy and capacity markets. To that extent we agree that there needs to be appropriate co-ordination between energy, capacity and system services payments.

In relation to valuing DS3 System Services, we previously provided the results of our economic analysis to the SEM Committee and recommended paying out the full value to incentivise investment in needed system services. The SEM Committee subsequently consulted on the procurement arrangements and more recently set out an annual cap ‘glide-path’ in its Information Paper on the DS3 System Services Future Programme Approach. The enduring regulated tariff payment structures and associated tariff rates set out in our recently published DS3 System Services Enduring Tariffs Consultation Paper have been designed with the purpose of ensuring payments stay within the overall expenditure “glide-path” set out by the SEM Committee.

### 4.3.3 Performance Scalar

Several respondents commented on the impact of the performance scalar on payments to date and expressed concerns about aspects of the performance scalar arrangements. The following is a summary of the comments received:

- One respondent commented that they welcomed many of the proposals in the recent Performance Scalar Methodology consultation. However, the respondent stated that in the context that there has been an underspend on DS3 System Services payments to date, they remain concerned about the revenue depressing effect on provider revenues from potential plans to ‘tighten’ existing scalars and what the effect on provider revenues of the new scalars, yet to be introduced, will be.
- One respondent expressed concerns about potential future ‘minded to’ positions on the performance scalar methodology such as reducing the inertia credit

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<sup>16</sup> Fixed Cost of a Best New Entrant Peaking Plant, Capacity Requirement and Annual Capacity Payment Sum For Trading Year 2018 - Consultation Paper:  
<https://www.semcommittee.com/sites/semcommittee.com/files/media-files/SEM-17-047%20ACPS%202018%20Consultation%20Paper.pdf>

allowance and the introduction of more demanding criteria for ramping. The respondent also expressed concern about the costs of performance testing within the data-poor proposed solution. This is of particular concern to the respondent where a providing unit delivers relatively low volumes and the associated cost of proving performance significantly cannibalises the earned revenue.

- One respondent urged the TSOs to support re-settlement to reflect the revised Performance Scalar framework from the beginning of the interim DS3 arrangements. The respondent stated that they also proposed further amendment to the Performance Scalar framework in their response to the consultation issued in April 2017 on the Performance Scalar Calculation Methodology, which would seek to balance the incentive provided by the Performance Scalar between rewarding reliable services provision and penalising unreliable service provision.

### TSOs' Response

As a result of feedback received from industry on the original performance scalar methodologies in place at the start of the Interim Arrangements and as a result of having gained a better understanding of their impact following their go-live in October 2016, a consultation paper was published in April 2017 proposing changes to the methodologies.

On 28 June 2017, EirGrid and SONI published a decision paper<sup>17</sup> on the Revised DS3 System Services Interim Performance Methodologies. In addition to the decision paper, the DS3 Interim Protocol Document<sup>18</sup> was also updated to reflect the changes in methodologies. The DS3 Protocol Document forms part of the Interim Tariff contractual arrangements along with the accompanying Framework Agreement and the Statement of Payments. This updated Protocol Document took effect from the date of publication of the decision paper.

With regard to the request that the TSOs support re-settlement to reflect the revised Performance Scalar framework from the beginning of the interim DS3 arrangements, as set out in the aforementioned decision paper, we do not believe this approach to be appropriate as the performance scalars calculated were in line with the methodology outlined in the Protocol document at the time of assessment.

With regard to the impact of the other scalar types (scarcity, product, and volume), on 4 July 2017 we published a consultation on the proposed DS3 System Services Enduring Scalar Design. The Enduring Scalar Design consultation paper looks at how scalars could be implemented to incentivise flexibility, reliability, and value for money, and sets out our proposed approach on how these would be best implemented for the Regulated Arrangements. Responses to the consultation should be sent to to [DS3@eirgrid.com](mailto:DS3@eirgrid.com) or [DS3@soni.ltd.uk](mailto:DS3@soni.ltd.uk) by 21 August 2017.

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<sup>17</sup> Decision Paper on Revised DS3 System Services Interim Performance Methodologies: <http://www.eirgridgroup.com/site-files/library/EirGrid/Decision-Paper-Interim-Performance-Scalars-Revised-Methodology.pdf>

<sup>18</sup> DS3 System Services Protocol – Interim Arrangements: <http://www.eirgridgroup.com/site-files/library/EirGrid/DS3-System-Services-Protocol-Interim-Arrangements-June-2017.pdf>



#### 4.3.4 Other Issues

A number of respondents replied with comments outside of the direct scope of this consultation. These have been or will be dealt with, as appropriate, in other consultations or fora. This section is intended to provide a high-level summary of the other relevant key issues raised and how/where they are being dealt with.

##### ***Procurement***

One respondent queried why it is not possible for new entrants to sign up to a framework agreement nor existing providers allowed to increase their contractual volumes during the extension period. The respondent stated that this limitation places a significant constraint on the ability of the industry to deliver the increase in system services that the TSOs are seeking to incentivise.

##### ***TSOs' Response***

During the Interim Tariff procurement process, the TSOs set out that potential providers needed to be in a position to provide the services by 1 October 2016 and that no further new entrants could be added to the framework following the conclusion of the process. These decisions were taken as a result of system needs and the constraints of procurement regulations. We also clarified during the process that no changes could be made to contracted volumes for the duration of the Interim Arrangements.

However, for the enduring regulated arrangements due to go live on 1 May 2018, we intend to adopt a different procurement approach. In particular, we are planning to put in place a panel-based procurement process. This is intended to be more flexible than the arrangements established under the Interim Arrangements by allowing service providers to qualify to gain a DS3 System Services contract more frequently (e.g. every six months) and to allow those services providers that already have a contract to make changes to their contracts. Further information on the proposed new procurement process will be shared with stakeholders in the coming months.

##### ***Settlement***

One respondent commented on the TSOs' settlement systems and processes. In particular, the respondent expressed concerns about the IT systems' ability to facilitate payment for the flexibility provided by service providers. The respondent also stated that provision of settlement data is either extremely slow or missing and it is difficult to make progress on queries and ultimately final settlement. The respondent suggested that as a result existing providers are being discouraged and frustrated and that these uncertainties may drive existing generators to offer less DS3 System Services and more energy in the future markets.

##### ***TSOs' Response***

The TSOs have designed the IT settlement systems to reward service providers for their 'availability' to provide the services as defined in the contractual arrangements. The settlement systems can also accommodate multiple technology types. A detailed 'user



guide' document describing the settlement calculations was provided to all successful tenderers in November 2016. We are continually looking to make improvements to the settlement system functionality and the associated reporting.

Settlement timelines and processes were consulted on as part of the Interim Framework Agreement consultation during 2016. There will be a further consultation on the enduring regulated tariff contracts scheduled to be held in October 2017.

### ***Three new fast-acting services***

One respondent welcomed the plans to remunerate the three fast-acting services but expressed disappointment that the earliest remuneration timing will be as far out as August 2018.

### **TSOs' Response**

The longer implementation time for the three fast-acting services is based on a 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.

This will provide service providers with greater clarity as to the obligations associated with provision of these services and will help ensure that service provision and remuneration are robust and that DS3 System Services are provided in a manner that meets power system needs.

## **4.4 Final Tariff Rates**

Following consideration of the responses received, we have decided to recommend implementation of our original proposal i.e. increase all of the tariff rates by 5.3%.

The tariff rates to apply for the period from 1 October 2017 through 30 April 2018 are set out in Table 3.

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

Service Name	Unit of Payment	Proposed Rate €
Synchronous Inertial Response (SIR)	MWs <sup>2</sup> 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

## 4.5 Exchange Rate Methodology

The tariff payment rates have been initially calculated in Euros. In determining the associated Sterling rates, we will 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.

## 5 Summary

In our consultation paper<sup>19</sup>, we proposed to adjust the tariff payment rates upwards to align the expected total payment levels with those previously communicated to stakeholders. Based on a comparison of the scale of actual expenditure versus that forecast for the period October 2016 through February 2017, the TSOs proposed to increase all of the tariff rates by 5.3%.

Six non-confidential responses to the consultation were received. The majority of the comments received focused on the following items:

- Size of the proposed tariff rate increase relative to the SEM Committee annual cap 'Glide-Path';
- Interaction with the energy and capacity markets; and
- Impact of performance scalar on revenues.

Following consideration of the responses received, we have decided to recommend implementation of our original proposal i.e. increase all of the tariff rates by 5.3%.

The tariff rates to apply for the period from 1 October 2017 through 30 April 2018 are set out in Table 4.

**Table 4: Proposed Tariff Rates for 1 October 2017 – 30 April 2018**

Service Name	Unit of Payment	Proposed Rate €
Synchronous Inertial Response (SIR)	MWs <sup>2</sup> 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 tariff payment rates have been initially calculated in Euros. In determining the associated Sterling rates, we will apply the same methodology as was used in 2016/17 for the Interim Arrangements 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.

<sup>19</sup> Consultation on DS3 System Services Tariffs (1 Oct 2017 – 30 April 2018):  
[http://www.eirgridgroup.com/site-files/library/EirGrid/OPI\\_INV\\_Paper\\_DS3-SS-Rollover-Tariffs-Consultation-FINAL.pdf](http://www.eirgridgroup.com/site-files/library/EirGrid/OPI_INV_Paper_DS3-SS-Rollover-Tariffs-Consultation-FINAL.pdf)