



**Energia response to SEM Committee  
Scoping Paper SEM-20-044**

***System Services Future Arrangements***

**2 October 2020**

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# 1. Introduction

Energia welcomes the opportunity to respond to the SEM Committee’s Scoping Paper (SEM-20-044) on System Services Future Arrangements (the “Scoping Paper”).

Energia is a major stakeholder in this project to develop future arrangements for system services. Energia has already invested heavily in the all-island market through its portfolio of renewable and flexible generation assets and expects to add up to a further 1.5 Gigawatts of renewable generation to the grid over the next 10 years through its Positive Energy programme. Energia is also investing substantially in energy storage projects and other emerging technologies to enhance the flexibility of the system, and fully anticipates the continued need for its flexible gas fired generation in Dublin to serve demand growth, provide essential grid services, maintain security of supply, and support the growth of renewables.

The remainder of this response is organised as follows. Section 2 provides our overarching comments. Sections 3 elaborates on the nature and scale of the problem to be addressed. Section 4 provides more detail on our suggested way forward for system services. And finally, Section 5 responds briefly to the specific questions in the Scoping Paper.

## 2. Overarching Comments

Energia has a clear interest in the successful delivery of a well-functioning set of future arrangements for system services and will want to engage constructively in the design and implementation process to contribute to that success. In this response, we explain what we consider to be the nature and scale of the problem to be addressed, the prerequisites to success, and what we see as the best way forward from this point.

### ***2.1 The nature and scale of the problem to be addressed***

It is important to understand the nature and scale of the problem to be addressed recognising the particular characteristics of the all-island power system compared with Europe. At a fundamental level, the all-island power system is different and is at the forefront in terms of renewable impacts. We should aim to conform to Europe where possible regarding system services, but it is not a “one-size-fits-all” proposition, hence any flexibilities in terms of EU requirements should be fully utilised. Notably:

- The power system of Ireland and Northern Ireland differs from Europe as it is a highly constrained, small, synchronously isolated power system with ultra-high renewable targets for a small synchronous system. It has always been different e.g. short-term frequency control requirements have always been a much bigger issue than for the European system (or even Nordic or UK systems), and the differences are growing.
- Revenue adequacy for any generator (including conventional generation) comes from a combination of energy, capacity and system services. Energy revenues for conventional generation is getting squeezed in many European countries, but this

will be more acute in Ireland and Northern Ireland as renewables moves from 40% to 70% of electricity generated. At the same time, there is broad consensus across studies from SONI and EirGrid, ENTSO-E, IWEA and the European Commission that significant levels of gas fired generation will be required in the all-island power system in 2030<sup>1</sup> to provide generation and system services at times of system stress or low wind and so any new market arrangements or incentives will have to be designed in a way that is mindful of this reality.

- Hence the comparative scale and importance of revenues from system services (and capacity) is correspondingly greater. Therefore, it is more “core” to the business case for investment or retention of existing conventional generation.
- As a larger component of revenues and being fundamental to the business case (compared to in Europe where system services, while growing in importance, may remain a minor part of overall revenues for most generators), certainty/predictability of revenues (subject to performance) also becomes much more critical.
- System service requirements in all-island power system are also significantly greater (as a proportion of the system size) than for other European systems, at least for most frequency-related products.

Not only is the island of Ireland fundamentally different from mainland Europe, it also faces profound challenges in accommodating 70% renewables, the implications of which are not yet adequately understood – we cannot design and implement enduring arrangements for system services until they are, as further explained below.

- Higher renewable levels will have a significant effect on how the power system operates. The need for greater volumes of some services is recognised in general, though not quantified as yet. It is likely for example that longer timescale frequency control products and ramping requirements will increase (to manage changes in renewable output).
- At times of high renewable output there will be much less conventional generation running. Short-term frequency control products (FFR, POR etc.) can be supplied by renewable generation when it is curtailed. There may be an excess of short-term frequency control services at these times.
  1. Because conventional generation is required to provide the bulk of both energy and system service requirements in a scenario where conventional generation capacity will be diminished, the “scarcities” will likely shift towards Short-term frequency control products when renewable output is

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<sup>1</sup> See Baringa 70by30 report for IWEA, “A 70% Renewable Electricity Vision for Ireland in 2030”, October 2018; ENTSO-E TYNDP 2020, “TYNDP 2020 Scenario Report – Final Report”, June 2020; SONI -“Tomorrow’s Energy Scenarios Northern Ireland 2020”, July 2020; EirGrid “Tomorrow’s Energy Scenarios 2019 Consultation Ireland - Planning our Energy Future”, June 2019; and European Commissions EU SysFlex WP2, D2.4 report – “Technical Shortfalls for Pan European Power System with High Levels of Renewable Generation”, April 2020.

low. When renewable output is low/off, conventional generation is required to provide the bulk of both energy and system service requirements (coming from the same generation capacity).

2. Longer term frequency control and ramping products. Even when renewable output is high, at most limited reliance can be placed on it for these services. Therefore, these will still have to come mainly from conventional generation resources.
- For shorter-term frequency control products, conventional generation's revenue opportunity may be limited (largely) to times when renewable output is low. It needs to be allowed to garner revenues at such times, without inappropriate price caps or bid limits. However, even the mere possibility of regulatory intervention where there is a reliance on scarcity rents for system services can give rise to the missing money problem which needs to be addressed, for example through adjustments to bid limits in the capacity market. All this needs considered and worked through.

In conclusion, changes in moving to 70% renewables by 2030 are fundamental but not fully understood, analysed or communicated. The proportion of conventional generation revenues that come from system services will increase significantly, and the patterns of system service requirements and scarcities will change significantly. Until these issues are more fully understood, trying to design and implement an enduring system services mechanism is not appropriate, and is inherently very risky for all concerned. But we still need to make progress towards 2030 targets while the enduring arrangements are fully considered. This can be achieved by building on the existing arrangements, making changes where necessary.

## **2.2 Pre-requisites to success**

Fundamentally we see five pre-requisites to success and have some key concerns in relation to each from what we have seen in the Scoping Paper and the industry workshops, as explained below:

1. A **clear vision** of what success means should be reflected in the overall objective for the project. In our view this should be to facilitate 2030 renewable electricity (RES-E) targets<sup>2</sup> whilst maintaining security of supply, as this will deliver the best outcome for consumers and the environment. The objective proposed in the Scoping Paper is overly focused on the method of procurement, specifically on delivery of a competitive framework, but should instead focus on the efficiency of outcomes<sup>3</sup>.

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<sup>2</sup> The recently published National Climate and Energy Policy 2021-2030 has set a RES-E target of 70% which is formally committed to in the program for government. In Northern Ireland, the Minister of the Economy issued a statement on 28<sup>th</sup> September 2020 committing to a minimum 70% RES-E target by 2030.

<sup>3</sup> The Scoping Paper proposes that the objective of the project should be “to deliver a competitive framework for the procurement of System Services, that ensures secure operation of the electricity system with higher levels of non-synchronous generation”.

2. An efficient outcome will not be delivered without investment. Therefore, the new arrangements must provide sufficient **investor certainty** to finance and make significant capital expenditure decisions<sup>4</sup>. Delivering investment certainty, including some form of longer term contracting, should be a key principle underpinning the design and investor certainty should be explicitly added to the list of assessment criteria. We have a concern, for reasons explained later, that daily auctions will not provide the investment certainty required.
3. A comprehensive and **holistic approach** is needed giving due consideration to **revenue adequacy** taking account of the energy market, capacity and system services together. Such an holistic approach should expressly consider timing issues with capacity auctions, market power mitigation measures, and importantly, the potential for missing money (caused by regulatory intervention or market failure), bearing in mind that required gas fired capacity will be similar to today but will operate less, as discussed in 2.1 above. The Scoping Paper states in broad terms that “the SEM Committee will seek to ensure appropriate alignment between the markets in energy, capacity and system services”, but the scope needs to include more specifically consideration of the issues described above, including the missing money problem.
4. A high level of **transparency** and understanding is required of what system services are needed, including their volumes, by when, and in what locations, along with current capabilities. Little detail has been provided to date on the above and whilst we appreciate that information about future requirements is inherently uncertain, the TSOs (and DSOs) are in a better position to provide this information than anyone else. An appropriate design cannot be considered or determined without this more detailed information being made available, which is also required by developers to inform their decisions on what, where and when to invest.
5. A **realistic roadmap and target date** is needed to facilitate meaningful engagement with market participants (the investors, who will need to have confidence in the new arrangements for them to be successful) and to provide sufficient time (taking into account the need for a holistic approach) for proper consideration, analysis and testing. The target date for a decision in Q1 2021 in order to have the framework implemented by 1 May 2023 is unrealistic given the complexity and scale of the challenge described earlier. The move from 40% RES-E to 70% will be another huge transformation of the all-island electricity sector, perhaps even greater than the one to get to 40%. Getting to a solution by Q1 2021 would be unduly hasty.

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<sup>4</sup> As explained earlier, investor certainty around system service revenues is more critical in the all-island market because such revenues represent a large component of total revenues and are fundamental to the business case, whereas in Europe system services, while growing in importance, may remain a minor part of overall revenues for most generators.

### **2.3 Key takeaways from industry workshops**

We believe that many of the concerns discussed above were borne out in the industry workshops on 26 August and 17 September, at which the RAs, TSOs, DSOs and industry associations presented their views.

At the August workshop, the RAs indicated that a decision was now more likely to be in Q2 2021. However, the TSOs expressed considerable concern with the timelines and noted that a decision will need to be made by end of Q1 2021 at the latest in order to have time to put in place the post 2023 framework. The TSOs presented a high-level conceptual idea for future arrangements based on daily auctions for all system services proceeding after the day ahead energy market (with that market capped by operational limits). A lot more information would be needed to understand the TSO proposal, but it looks very challenging to implement and would appear unfinanceable based on what little we know about it (as presented). On the latter note, for example investors would have no certainty or confidence of being able to recover their (sunk) capital costs in a daily auction for system services as they would have to rely on scarcity rents subject to regulatory intervention.

The clear and strong message from almost every industry association at the September workshop was that rushing to deliver an enduring framework would deliver sub-optimal results given the scale and complexity of the issues to be addressed and that the proposed timeline for delivery by April 2023 was unrealistic. The further point was made by IWEA and IESA that EBGL requirements were not particularly relevant (and certainly not beneficial) until there is direct interconnection to mainland Europe (when Celtic is expected to come online in 2026)<sup>5</sup> and that a realistic roadmap and target date for the new arrangements should be set now, with the current Regulated Arrangements extended for one or more period(s) of 18 months with an appropriate increase in the glide path and revenue for DS3 service provision in line with EirGrid and SONI's €750 million recommendation. We would agree with this point, as further discussed below.

### **2.4 Recommended next steps**

Rather than rushing through a new set of arrangements for System Services for April 2023 and the considerable risks that this would entail for the customer (including failure to secure the new investment required for achieving 2030 renewable targets) it would seem prudent to extend the current tariff regime, as an interim measure, to provide a modicum of midterm certainty for investors. When combined with a mechanism to stabilise revenues for new investment – e.g. longer term fixed price contracts, or a revenue floor mechanism -the tariff arrangements could provide the

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<sup>5</sup> The European Commission's opinion on this matter is particularly notable as reflected in the recently published 'EC Opinion pursuant to Article 20(5) of Regulation (EC) No 2019/943 on the Implementation Plan of the Republic of Ireland', wherein it is stated on page 3 that "The Commission considers that Ireland should join the EU platforms as soon as it becomes interconnected with the integrated electricity market of the EU." The same opinion was given to Northern Ireland.

certainty required for investment in DS3 technologies over the mid-term until new enduring DS3 market arrangements are developed – i.e. it would bridge the market for investors.

We also recommend that it would be prudent to consider an interim volume cap for high-availability technologies under the DS3 tariff arrangements, prioritising delivery of units with pre-existing contractual obligations under the DS3 and capacity market. This would avoid any potential for security of supply issues (e.g. in the case of the capacity market in relation to meeting the NI and Dublin based capacity constraints). This approach also targets strategically critical infrastructure and ensures projects that maximise utility to end consumers are incentivised to be developed first.

The proposal requires EirGrid to clearly indicate volume requirements for high availability technologies (i.e. technologies that can provide System Services without displacing renewable generation / increasing curtailment) under DS3 to meet 2030 targets. It also requires the DS3 budget to be reassessed to facilitate delivery of these requirements, and within the context of the wide-ranging benefits to electricity customers of meeting 2030 targets, to provide certainty of funds for EirGrid. An appropriate budget glide path to 2030, combined with a suitable revenue floor and interim volume cap, could provide the mid-term certainty required to promptly deliver the required investment without allowing the DS3 market to overheat.

The existing arrangements could be developed in phases depending on how quickly EirGrid identifies new product requirements to maintain the trajectory towards 2030 targets. How this could be achieved to serve as an effective transitional mechanism is further explained in section 4 of this response.

### **3. The nature and scale of the problem to be addressed**

#### ***3.1 General impacts of high renewable integration***

The introduction of large-scale renewable generation is having a significant effect on power systems in several European countries. The intermittent nature of renewable generation (solar, wind) and its limited contribution to capacity adequacy, has resulted in a significant reduction in energy production from conventional generation units, but only a limited reduction in the installed capacity requirements. The introduction of large-scale renewables also tends to put downward pressure on energy market prices.

The combined impact of lower capacity factors of conventional generation units coupled with lower energy market prices results in reduced energy market revenues for conventional generation units, creating the so-called “revenue gap” or “missing money” problem. This is now widely recognised and the need for future market design to take account of it is increasingly understood.

The fact that most renewable generation is also non-synchronous also has impacts through reduction in levels of synchronous inertia. Synchronous Inertial Response (SIR), as we know, has been a “given” on power systems (until now), and is



fundamental to how power systems operate. However, this erosion of SIR, while not inconsequential, is of less importance in vast synchronous power systems such as the integrated power system on mainland Europe<sup>6</sup>.

So while the “missing money” issue and its potential to undermine the economic viability of conventional generation units is understood, it has not been comprehensively addressed. It is generally recognised that the balance of revenue sources for conventional generation units needs to evolve with the reduction in energy market revenues being replaced by greater revenues from capacity and system services. The potential need for a more fundamental review of the European electricity market design at some stage in the future has already been mooted.

### **3.2 Particular challenges for the island of Ireland**

The impacts of large-scale renewable integration (both on system operation & system services, and on revenue adequacy) are much more acute on the island of Ireland. This arises from a combination of critical factors:

#### **1. Power system size**

The power system on the island of Ireland is a small, highly constrained, synchronous isolated system. Long before the advent of renewables, issues such as short-term frequency response (frequency regulation and response to loss of a large infeed) were much more acute than in Europe. For mainland Europe, issues such as primary frequency response (in the “seconds” timescale) could be effectively ignored, as the loss of even the largest generation unit was inconsequential in terms of the scale of the synchronous power system.

#### **2. Renewable integration levels**

The island of Ireland has already achieved levels of renewable integration far in excess of the equivalent levels on other European synchronous systems, and is now adopting targets of 70% renewable electricity, requiring up to 90 to 95% instantaneous penetration by 2030. This will have a profound effect on the running patterns of conventional units and on the need for, and provision of, system services.

#### **Consequences**

In summary, while the general nature of the challenges faced in the island of Ireland and in larger systems (such as mainland Europe) have the same roots, the impacts on the power system of Ireland and Northern Ireland are fundamentally different, due to it being:

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<sup>6</sup> For example, in the event of loss of a large generation unit, SIR is a primary determinant of the rate of drop of frequency that the power system will experience, dictating ROCOF and the time available for other resources to respond to address the shortfall. While generation units on the mainland-European system can be larger than in Ireland and Northern Ireland, the loss of even the largest unit is still almost inconsequential in terms of the scale of the overall power system. For this reason, short-term frequency response has always been a relatively little concern, as compared to the all-island (or even GB) systems, where the loss of a large infeed can represent a significant proportion of the current system resources.

- A small, synchronously isolated power system;
- With much more aggressive renewable targets than other systems.

As a result:

- The problem of revenue adequacy will be more acute and will impact more heavily and earlier than for most or all other European countries;
- The importance of system services and their comparative scale to the energy market (whether in volume terms or revenue terms) is much more significant than for larger European synchronous systems. So while shorter-term frequency control products may be increasing in importance even in mainland Europe, they can still be treated more or less as a minor “adjunct” to the energy market. This is not the case for the island of Ireland.

### **Conclusion**

The net point here is that the arrangements that will work in Europe for system services (or will work at least for the next number of years), simply may not work in Ireland and Northern Ireland. “The proportionality” of system services compared to the overall size (physical or financial) of the market is entirely different. While it is of course proper to aim to adopt the European arrangements to the extent possible, the island of Ireland may, simply, have to be different<sup>7</sup>.

We cannot simply force in the European design arrangements without full consideration of the special circumstances that exist in Ireland and Northern Ireland. The island of Ireland is once more as the leading edge of renewable integration; and will have to lead the design effort in some respects, rather than simply following it.

### ***3.3 The revenue adequacy and bid limits problem***

In any market, the revenues available from energy, capacity and system services collectively must be sufficient to provide revenue adequacy to well-functioning resources (including conventional generation).

In Ireland and Northern Ireland, some of the challenges are more acute than in Europe; and may require quite different approaches (while preserving commonality with the European market design principles to the extent possible).

Renewables will represent a much greater proportion of the overall energy volumes. Therefore, the reduction in revenues that conventional generation will receive from the energy market will be more acute, and the proportion of revenues required from the capacity and system services markets needs to be correspondingly greater. As the

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<sup>7</sup> An alternative view is that the island of Ireland is not perhaps so much different, as it needs to be ahead of the European arrangements. European standard designs may “catch up” in time as renewable levels increase and the effects seen in Ireland and Northern Ireland are increasingly shared by Europe, but we cannot wait for that to happen if we are to pursue and achieve the island’s 2030 renewable targets. Also, the acuteness of some of the factors in the smaller all-island system may never be seen to the same extent in the huge European system.

reliance on capacity and system services for revenue becomes much more significant, predictability of revenue also becomes much more important<sup>8</sup>.

The approach to system services may have to be significantly different in Ireland and Northern Ireland, due to the comparative scale of the system service requirements and the energy and capacity requirements. In Europe it may be adequate for short term frequency products to remain almost as an adjunct or even “after-thought” to the energy market, but this is unlikely to work in Ireland and Northern Ireland.

The move to higher renewable levels will have fundamental effects on how the power system operates, although these effects are not yet fully understood or analysed. Patterns of system service requirements, surpluses and scarcities are likely to be quite different from today. Trying to design an enduring solution prior to having a clearer understanding of these changes, is inappropriate and extremely risky.

### **Greater requirement for longer-term frequency control and reserve products**

The need for greater volumes of some services is recognised in general, though not quantified as yet. It is likely for example that longer timescale frequency control products and ramping requirements will increase (to manage changes in renewable output).

Renewables can potentially also provide some longer-term frequency control services. However even when renewable penetration is high (or predicted to be high), at most limited reliance can be placed on it for these services. Therefore, these will still have to come (mainly) from conventional generation resources.

Consequently, one would expect that longer-term frequency control and ramping products will become more scarce, due to a combination of greater volume requirements, and reduced sources of provision.

### **Changes in provision of, and times of scarcity of shorter-term frequency control products**

At times of high renewables there will be much less conventional generation running. Short-term frequency control products (FFR, POR etc.) are likely to be able to be supplied by renewables when it is curtailed. There may indeed be an excess of short-term frequency control services at these times.

Because conventional generation is required to provide the bulk of both energy and system service requirements in a scenario where conventional generation capacity will be diminished, the “scarcities” will likely shift towards short-term frequency control products are likely to shift strongly toward periods when renewable output is low. When renewable output is low/off, conventional generation is required to provide the bulk of both energy and system service requirements (coming from the same generation capacity). Therefore, market behaviour, if allowed to function normally,

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<sup>8</sup> As compared to larger power system with lower renewable levels, where system services for many generators may remain more of a “nice to have”, rather than a fundamental and significant component of overall revenue requirements.

should create a substantial variation in pricing of these services between times of low and high renewable output.

Price caps: For shorter-term frequency control products, conventional generations' revenue opportunity may be limited (largely) to times when renewable output is low. It needs to be allowed to garner revenue at such times, without inappropriate price caps or bid limits. However, even the mere possibility of regulatory intervention where there is a reliance on scarcity rents for system services can give rise to the missing money problem which needs to be addressed, for example through adjustments to bid limits in the capacity market.

#### **4. Extension of current arrangements and suggested amendment to serve as effective transitional mechanism**

The target date for a decision in Q1 2021 in order to have the enduring framework implemented by 1 May 2023 is unrealistic given the complexity and scale of the challenge described earlier. Of course, things do have to move on; the 2030 goals are challenging and progress toward them is required right away. Until the design of enduring arrangements appropriate for the specific and unique context of the all-island system is achievable, progress should be made by leveraging the existing system services framework (with necessary changes to reflect increased volumes of system services arising from increased renewables).

##### **4.1 Key recommendations**

We therefore recommend extending the current tariff regime, as an interim measure, to provide a modicum of midterm certainty for investors. When combined with a mechanism to stabilise revenues for new investment e.g. longer term fixed price contracts or a revenue floor mechanism - the tariff arrangements would provide the certainty required for investment in DS3 technologies over the mid-term until new enduring DS3 market arrangements are developed – i.e. it would bridge the market for investors.

We also recommend that it would be prudent to consider an interim volume cap for high-availability technologies under the DS3 tariff arrangements, prioritising delivery of units with pre-existing contractual obligations under the DS3 and capacity market. This would avoid any potential for security of supply issues (e.g. in the case of the capacity market in relation to meeting the NI and Dublin based capacity constraints). This approach also targets strategically critical infrastructure and ensures projects that maximise utility to end consumers are incentivised to be developed first.

The proposal requires EirGrid to clearly indicate volume requirements for high availability technologies (i.e. technologies that can provide System Services without displacing renewable generation / increasing curtailment) under DS3 to meet 2030 targets. It also requires the DS3 budget to be reassessed to facilitate delivery of these requirements, and within the context of the wide-ranging benefits to electricity

customers of meeting 2030 targets, to provide certainty of funds for EirGrid. An appropriate budget glide path out to 2030, combined with a suitable revenue floor and interim volume cap, would provide the mid-term certainty required to promptly deliver the required investment without allowing the DS3 market to overheat.

The existing arrangements could be developed in phases depending on how quickly EirGrid identifies new product requirements to maintain the trajectory towards 2030 targets. How this could be achieved to serve as an effective transitional mechanism is further explained below.

## **4.2 Potential stages:**

### **Stage 1 (2020-2023? – depends how quickly EirGrid identifies new product requirements):**

Maintain existing arrangements with changes in system service volume requirements to reflect (a) increasing RES/SNSP levels and (b) glide path toward anticipated SS revenues for 2030.

### **Stage 2 (2023-2026? – depends on how quickly EirGrid identifies new product requirements):**

Maintain existing framework but introduce new system service products (if required) to maintain trajectory toward 2030 targets.

- The requirement for, and timing of, this Stage will depend on when and if EirGrid identifies that it is necessary to introduce new System Service products prior to the implementation of the enduring system service framework, in order to maintain the trajectory toward 2030 targets.

### **Stage 3 (2026 onward – enduring arrangements):**

**New arrangements in place by 2026. This probably requires agreement on the arrangements by c.2023, to allow EirGrid to implement them and (equally importantly) to allow all parties to transition toward them. All parties have to make decisions based on their future revenue expectations, regarding participation in system services and in the capacity and energy markets more generally.**

- Without time to make the necessary transitions, the system services will not be available in 2030 to meet requirements. Therefore, the final arrangements need to give a clear picture of not just the system service arrangements, but also the Capacity and Energy market arrangements that will co-exist with it. They must also be introduced with a lead time that avoids the risk of creating “missing money” under T-4 capacity market contracts.
- And it should always be remembered that we cannot assume that the arrangements that work for Europe will work for the island of Ireland (small, highly constrained, synchronously isolated system with ultra-high renewable targets). Consistency with European arrangements is a legitimate goal, but not an absolute. We should aim to conform to Europe where possible regarding system services,

but it is not a “one-size-fits-all” proposition, hence any flexibilities in terms of EU requirements should be fully utilised.

## **5. Response to specific Scoping Paper questions**

Below we set out our response to the specific questions in the Scoping Paper, which should be read in conjunction with sections 2, 3 and 4 of this response.

### ***Introduction and Background***

#### **Q1) Are there additional requirements in EU legislation or national policy that should be considered as key guidance for the project?**

It is important to understand the nature and scale of the problem to be addressed recognising the particular characteristics of the all-island power system compared with Europe. At a fundamental level, the all-island power system is different and is at the forefront in terms of renewable impacts. We should aim to conform to Europe where possible regarding system services, but it is not a “one-size-fits-all” proposition, hence any flexibilities in terms of EU requirements should be fully utilised. Please see sections 2 and 3 of this response for more details.

#### **Q2) What should the role of DSOs be in development of the new arrangements?**

DSO participation is of paramount importance to the success of the project. The procurement and delivery of system services should be conducted with full visibility of both distribution and transmission systems to minimise the potential for conflicting operational instructions and ensure the most optimal outcome for overall system(s) security. In this regard Energia supports the DSOs having an active role in the development of the future system service arrangements and there is a clear requirement for effective DSO / TSO co-ordination and co-operation.

#### **Q3) Should any further assessment criteria be included in this workstream?**

An efficient outcome will not be delivered without investment. Therefore, the new arrangements must provide sufficient investor certainty to finance and make significant capital expenditure decisions. Delivering investment certainty, including some form of longer term contracting, should be a key principle underpinning the design and investor certainty should be explicitly added to the list of assessment criteria. We have a concern that daily auctions will not provide the investment certainty required.

We also recommend that the existing Alignment criterion be amended. The Scoping Paper states in broad terms that “the SEM Committee will seek to ensure appropriate alignment between the markets in energy, capacity and system services”, but the scope needs to include more specifically consideration of the timing issues with capacity auctions, market power mitigation measures the potential for missing money.

### ***Proposed Overall Approach***

#### **Q4) Is the general approach to the Project appropriate and complete?**

We believe the general approach to the Project needs significant further consideration and amendment. Please see section 2.2 of our response for further details.

**Q5) For which products is a market-based approach appropriate? What sort of market-based approach is most appropriate?**

Changes in moving to 70% renewables by 2030 are fundamental but not fully understood or analysed. The proportion of conventional generation revenues that come from system services will increase significantly, and the patterns of system service requirements and scarcities will change significantly. Until these issues are more fully understood, trying to design and implement an enduring system services mechanism is not appropriate, and is inherently very risky for all concerned. But we still need to make progress towards 2030 targets while the enduring arrangements are fully considered. This can be achieved by building on the existing arrangements, making changes where necessary. Please see section 2.2 of our response for our recommended way forward from this point.

**Q6) For which products is a market-based approach not appropriate? Why is a market-based approach not appropriate for these products? Will an alternative approach be more economically efficient? What sort of alternative approach should be considered?**

These questions cannot be answered until the issues referred to in response to question 5 (and discussed in section 2.2 of this response) are more fully understood.

***Market Based Arrangements – Governance Arrangements***

**Q7) Do stakeholders believe the current qualification process, is the most efficient approach? Do stakeholders have any alternative proposals?**

The current qualification process and specifically the bi-annual procurement gates, are overly restrictive and create unnecessary risks in relation to the timing for commissioning and testing of new build assets seeking to provide system services. We therefore recommend that as much flexibility is built into this process as possible and note the options presented in the recent EirGrid/SONI consultation paper on mitigating the impact of COVID-19 in the procurement of system services. In this regard, consideration for the extension of testing deadlines could be rolled out on a more consistent basis across procurement gates. In addition, consideration should be given for the provision of long-stop dates in respect of new build assets under the DS3 qualification processes, noting their use in DS3 Fixed Contract auctions and Capacity auctions. In any future enduring arrangements, the qualification and procurement process should be adjusted to introduce as much flexibility as possible which will serve to support the provision of additional system services from new assets.

**Q8) What are stakeholder views on the overall current governance arrangements including the contractual principles, the Protocol Document and the market ruleset? Should these be modified into an overall protocol document which captures all of the rules for providing and procuring System Services with increased regulatory oversight?**

Energia recommends that the all of the rules pertaining to the governance arrangements for providing and procuring system services should be held together and modified into a single document. The current arrangements of having different details contained in different documents adds an unnecessary layer of complexity and can make it difficult for providers to know how they will be remunerated for provision of services.

Providers of system services also require comfort that the revenue streams from any established procurement process are not subject to amendments at the behest of the TSO and which are outside of the provider's control. Any changes in the governance documents should be subject to a review panel (similar to the modification process in the Trading and Settlement Code) which allows fair representation from all participating technologies. It is vital that the governance arrangements overseeing DS3 system services are transparent and consistent and are not subject to amendments without the necessary industry involvement in the process.

**Q9) Should System Services continue to be funded through network tariffs? Are there views on any alternative arrangements?**

Until the issues referred to in response to question 5 (and discussed in section 2.2 of this response) are more fully understood, trying to design and implement an enduring system services mechanism, including how system services should be funded, is not appropriate at this stage.

***Market Based Arrangements – Auction Design***

**Q10) Should all services be procured through a single daily auction framework or should bespoke arrangements be developed for the separate products?**

As discussed in section 2, we have a real concern that daily auctions will not provide the investment certainty required e.g. investors would have no certainty or confidence of being able to recover their (sunk) capital costs in a daily auction for system services as they would have to rely on scarcity rents subject to regulatory intervention.

**Q11) What are stakeholders' views on the timing of auctions?**

Until the issues referred to in response to question 5 (and discussed in section 2.2 of this response) are more fully understood, trying to design and implement an enduring system services mechanism, including any decisions on the timing of auctions, is premature and inappropriate at this stage.

**Q12) Do stakeholders have any proposals on how best to ensure commitment obligations are met?**

Any commitment obligations should recognise that this is not a bilateral market, unlike most markets in Europe, and system service providers should not be adversely affected by constraints or system operator dispatch decisions in any future design for system services.



#### **Q14) Do stakeholders have further views or proposals in relation to auction design?**

It is premature to consider proposals for auction design at this stage until the issues referred to in response to question 5 (and discussed in section 2.2 of this response) are more fully understood.

#### **Q13) What are the significant interactions within potential System Services product markets and between Systems Services markets and the energy and capacity markets? How should issues arising be addressed?**

A comprehensive and holistic approach is needed giving due consideration to revenue adequacy taking account of the energy market, capacity and system services together. Such an holistic approach should expressly consider timing issues with capacity auctions, market power mitigation measures, and importantly, the potential for missing money (caused by regulatory intervention or market failure), bearing in mind that required gas fired capacity will be similar to today but will operate less, as discussed in section 2.1 of the response.

In addition, system services revenue streams are a key determinant in capacity market bidding strategies for market participants. Therefore, alignment of the implementation of future arrangements with capacity auction timelines is a necessity. Otherwise an illogical situation will materialise whereby market participants will be required to incorporate an unknown System Service market into their capacity market bids (as will be the case for the upcoming T-4 capacity auction in January 2021 for Capacity Year 2024/25 if the RAs seek to put future arrangements in place by 1 May 2023).

In summary, the System Services markets and energy and capacity markets are inextricably interlinked with System Services revenue streams set to play a key role in ensuring revenue adequacy for generators. These points are echoed in WP3 of the EU-SysFlex project which states that, *"As the marginal cost of energy decreases in the future, with increasing levels of renewables in the market, there will need to be a holistic view of energy market, capacity market and flexibility services revenues to ensure that the various revenue streams are aligned and that overall, appropriate investment signals are created for both new entrants offering flexible services and existing service providers which can improve their flexible behaviour."*<sup>9</sup>

#### **Fixed Contract Arrangements**

#### **Q15) Do stakeholders believe there would be benefit in maintaining the Fixed Contract Arrangements for future procurement runs?**

As discussed in section 4, an efficient outcome will not be delivered without investment. Therefore, the new arrangements must provide sufficient investor certainty to finance and make significant capital expenditure decisions. Delivering investment certainty, including some form of longer term contracting, should be a key

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<sup>9</sup> EU SysFlex WP3, D3.2 - Conceptual market organisations for the provision of innovative system services: role models, associated market designs and regulatory frameworks, Page 112

principle underpinning the design and investor certainty should be explicitly added to the list of assessment criteria. We have a concern that daily auctions will not provide the investment certainty required e.g. investors would have no certainty or confidence of being able to recover their (sunk) capital costs in a daily auction for system services as they would have to rely on scarcity rents subject to regulatory intervention.

### ***Additional Considerations***

#### **Q16) Do stakeholders have views on the list of additional considerations above? Are there any further issues to consider?**

It is important to understand the nature and scale of the problem to be addressed recognising the particular characteristics of the all-island power system compared with Europe. At a fundamental level, the all-island power system is different and is at the forefront in terms of renewable impacts. We should aim to conform to Europe where possible regarding system services, but it is not a “one-size-fits-all” proposition, hence any flexibilities in terms of EU requirements should be fully utilised. Please see section 3.2 of this response for further details.

#### **Q17) What are stakeholders’ views on the potential existence of, and options for mitigation of, market power?**

The move to a higher level of renewables will have fundamental effects on how the power system operates, although these effects are not yet fully understood or analysed. Patterns of system service requirements, surpluses and scarcities and market power are likely to be quite different from today. Trying to design options for mitigation of market power seems premature in these circumstances. However, it is important to recognise that conventional generations’ revenue opportunities may be limited (largely) to times when renewable output is low. It needs to be allowed to garner revenue at such times, without inappropriate price caps or bid limits. However, even the mere possibility of regulatory intervention where there is a reliance on scarcity rents for system services can give rise to the missing money problem which needs to be addressed, for example through adjustments to bid limits in the capacity market.