Single Electricity Market Committee

Harmonised All-Island Implementation Arrangements for Ancillary Services and Other Payments and Charges

A Decision Paper

SEM-09-003

30th January 2009

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1. Executive Summary

Following consultation, in February 2008 the SEM Committee[1] published a High Level Decision (HLD) paper[2] providing a high level policy framework for the all-island harmonisation of Ancillary Services (AS) and other related generator payments and charges. Industry workshops then followed in April and May when the Transmission System Operators (TSOs) discussed the detailed potential harmonised arrangements and implementation alternatives with industry participants. Subsequently in September the SEM Committee approved and published a consultation paper[3] containing the TSOs' detailed proposals for implementing harmonised arrangements for AS, other generator payments/charges, and generator performance incentives. This consultation paper was the subject of an industry briefing session on 1st October 2008, chaired by the TSOs and involving both Regulatory Authorities (RAs), to explain the proposals.

The RAs have considered the TSOs' proposals and reviewed the comments received to the September consultation paper. A total of eight responses were received. The detailed responses from six parties, where parties had no objection to publication, are published separately with this paper, Taking on board these comments, the SEM Committee has found that the proposed detailed harmonised AS implementation arrangements were generally in agreement with the principles in the HLD. The SEM Committee has now made decisions on the detailed harmonised all-island AS arrangements, other related payments/charges and generator performance incentives that will be applicable from 1st October 2009 in the SEM. These decisions are set out in this paper, with the highlights provided in this Executive Summary.

The actual rates for the initial harmonised payments/charges and generator performance incentives under these arrangements will be the subject of a separate consultation by the TSOs in early Q2 2009. The rates, charges and incentives will be decided by the SEM Committee in early Q3 2009 with a view to implementation from the start of the next tariff period, 1st October 2009.

1.1. General Principles and Common Features

In the September 2008 consultation the TSOs followed the principles set out in the earlier SEM Committee's HLD paper. Some of the common features proposed by the TSOs and approved by the SEM Committee are summarised below.

An All-Island Statement of Charges and Payments will be produced outlining all rates/charges associated with AS, including generator performance incentive charges. AS payments will be independent from payments made within the SEM. AS will be procured using a set of approved rates, and these rates will be applied in contracts between the TSOs and service providers. A harmonised AS contractual framework is envisaged that includes a standard agreement forming the basis of individual contracts between the TSO and each service provider.

Charges for non fulfilment of AS contracts will be based on the payments available for the service and the relative magnitude of the impact of the non-delivery. Monies collected as charges will be used to reduce the AS expenditure funding requirements from general customers in the following tariff period.

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

[2] [AIP-SEM-08-013] 'Harmonised All-Island Ancillary Services Policy - A Decision Paper, February 2008

[3] [AIP-SEM-08-128] "Harmonised Ancillary Services, Other System Payments & System Charges' September 2008

For clarity, this funding arrangement will not affect the size of the AS pot annually determined by the TSOs and approved by the SEM Committee.

No significant AS allowance changes from those allowed for currently should arise from the implementation of these all-island AS harmonisation arrangements. However, if SEM requirements/arrangements subsequently change, for example with the connection of increased amounts of wind to the system, then the AS allowance may change accordingly.

1.2. Reserve

The main design features of the harmonised arrangements for reserve are:

- Five key categories of reserve are identified;
- Fixed minimum regulated payment rates for the services are set annually based on the AS allowance and predicted levels of contracted provision. In order to facilitate predictability of income for service providers, the use of a variable component in the rates, which was allowed in the SEM Committee's HLD paper, will not be applied at this stage;
- Each unit contracts for its capability level and Reserve characteristic curve for each service based on past performance and expected future performance;
- Each unit declares its Reserve availability to the TSO for each trading period to a maximum of its contractual capability in accordance with the relevant Grid Code;
- Charges are applicable where units fail to deliver the declared level of performance. Charges will be dependant on the level of underperformance during low frequency events which will be monitored. Charge per incident will be equivalent to a corresponding 30-day reserve payment;
- Payment is calculated for each category of reserve in each trading period taking into account its average power output, reserve curve characteristics, declared and contracted availability; and,
- The TSOs may enter contracts with reserve providers to take into account longer term system requirements and to facilitate investment in certain types of plant. It is expected however that long term contracts would only occur in rare cases.

1.3. Reactive Power

The main design features for reactive power are:

- A fixed payment rate for the service is set annually based on the AS allowance and predicted level of contracted provision. The payment is intended to incentivise providers to maintain the capability to provide reactive power; it is not intended to refund capital expenditure or provide locational investment signals. In order to facilitate predictability of income for service providers, the use of a variable component in the rates, which was allowed in the SEM Committee's HLD paper, will not be applied at this stage;
- Each service provider contracts with the TSO on the basis of its contractual reactive power capability range that is based on historic and expected performance;
- Each unit contracts for its capability range and where appropriate its Reactive Power characteristic curve and its Automatic Voltage Regulator (AVR) capability. Payment is scaled to incentivise the provider to contract at an achievable level;
- For each trading period, an applicable unit declares its capability range independent of output to the TSO in accordance with the Grid Codes;
- Charges will apply to units who do not deliver to their set capability range. The charge per failure to provide will be equivalent to a corresponding 30-day contractual capability payment; and,

- The TSOs will be allowed to enter into long-term contracts with market participants for Reactive Power in order to take into account longer-term system requirements.

1.4. Black Start

The main design features of the harmonised black start arrangements are:

- Black Start will be contracted on a site by site basis based on a number of technical requirements;
- In the case of a newly connecting plant, contracts will be established following a tender process. As a secondary step contracts may be awarded via direct negotiations. The awarding of contracts for new plant will be subject to approval by the relevant RA;
- Contract length will be subject to negotiation with the TSO, and long term contracts are envisaged, though not necessarily linked to the expected life of the plant. Black Start plant must meet minimum technical criteria;
- A fixed payment rate for the service will be set and adjusted annually based on the cost of providing the service as advised by the potential provider. The minimum rate of return may reflect the TSOs' cost of capital, but providers may seek to justify a rate above this;
- In each trading period a unit will declare its Black Start status;
- Payment is calculated for each trading period;
- Each site is required to carry out Black Start tests that will be monitored by the respective TSO; and,
- Charges will apply in case of annual tests failure. Charges will vary depending on the severity and the type of test failed, being equal to 30 days maximum payment for a partial failure to meet some contractual element, and up to 90 days maximum payment in case of outright failure.

1.5. Potential New Ancillary Services

Taking on board comments received to the September paper, the SEM Committee concludes that at present there does not seem to be any strong evidence that the system requires or would benefit from any new ancillary services in addition to those already approved in the HLD. Therefore no new AS services will initially form part of the harmonised AS arrangements expected to start in Q4 2009. The TSOs are encouraged to suggest new ancillary services, or modifications to existing ones for consideration by the industry and for approval by the RAs, when anticipated to be required by the SEM.

1.6. Short Notice Declaration Charges and Trip charges

The main approved features of the short notice declaration charges for generators are:

- The earlier the notification the smaller the charge;
- The charge will be applied to downward declarations within a 12 hour period;
- The charge will generally only apply to re-declarations over 10 MW, although re-declarations below 10 MW more than three times in an hour will incur a charge;
- The charge is set to a single annual value; and,
- The charge will apply to all units dispatched through EDIL, and so will include controllable wind, demand side units and interconnectors.

The main approved features of trip charges are:

- They will apply to demand side units and all generation (including wind, distributed generation and future generation technologies);
- The higher the MW loss, the higher the charge;
- The faster the trip the higher the charge; and,
- Charge rates will be reviewed annually.

It is considered however that the numerical values in the calculation of trip charges (TR.6) should be further considered and included in the consultation for establishing the initial values of the harmonised AS rates/charges that will follow this decision paper.

1.7. Generator Testing Charges

The SEM Committee instructs the TSOs to produce a consultation paper on testing and commissioning charges by early Q2 2009 that would review the existing SEM testing charging methodology and the extension of testing charges for commissioning of new units. Consideration will also be given to other testing requirements in AS and generator performance.

1.8. Generator Performance Incentives

The main features of the approved new all-island arrangements to incentivise generator compliance with certain relevant Grid Code parameters are:

- All new users of the transmission system should meet the Grid Code requirements;
- All exceptions to Grid Code standards are encapsulated in RA approved derogations;
- An approved derogation relaxes a Grid Code requirement and reduces it to a new standard. Consequently, any charges for underperformance apply to the derogated standards, so long as the derogations are applicable, rather than the base Grid Code values;
- Performance of units will be judged against Grid Code standards (or if applicable, standards approved under a derogation) and will be observed by TSOs. If appropriate, TSOs may require a unit to demonstrate that it can meet a particular requirement;
- Charges for Grid Code underperformance are separate from, and in addition to, any charges for non-delivery under an AS contract; and,
- Multiple charges may be applicable for the same incident.

The preliminary incentives proposed in the September consultation are based on the existing SONI SSSA arrangements in Northern Ireland, which the SEM Committee considers provide a sound practical basis for implementation on 1st October 2009. These preliminary parameters could therefore include some of the following: Operating Reserve, Reactive Power, minimum load, fault ride through, minimum up/down times, ramp up/down rates, minimum time to synchronise from warm and hot, times from synchronising to minimum load, times to deload from minimum load, and the maximum number of starts in a 24h period.

The initial proposed charges associated with the parameters selected will be included in the consultation on AS rates/charges earmarked for early Q2 of 2009.

The RAs note that the naming and definition of some of the proposed parameters are not consistent in both Irish and Northern Ireland Grid Codes. It may be necessary to ensure consistency in the definition of the parameters to include in the generator performance scheme in both Grid Codes before the harmonised AS arrangements are implemented. The requirements for each parameter however may be different for historic and technical reasons.

It is envisaged that in the future, as system constraints are reduced, Grid Code requirements will gradually converge for new plant connected to the system. Furthermore, additional incentive parameters will be added into the future as the TSOs gain experience in operating the systems on an all-island basis.

1.9. TSO Incentivisation

As also indicated in the February HLD, the SEM Committee made a policy decision to include a performance review of each TSO with respect to AS. This will be undertaken by the relevant RA on an annual or multi-annual basis consistent with the regulatory revenue/price control in place for the TSO and any other incentives that may be applicable.

2. Introduction and Background

At present a number of payments and charges are paid/levied outside the main energy markets by the Transmission System Operators (TSOs), EirGrid in Ireland and SONI in Northern Ireland respectively. Most of these charges are related to Ancillary Services (AS) which are services necessary for the secure operation and restoration of the electricity system. The structure, treatment and arrangements of these charges are different in Ireland and Northern Ireland. However in all cases these costs are recovered from demand customers, through the Transmission Use of System (TUoS) charges in Ireland and the System Support Services (SSS) levy in Northern Ireland (NI).

These charges are not included in the Trading and Settlement Code (TSC) of the all-Island Single Electricity Market (SEM) and therefore it becomes necessary to define the arrangements that will be applicable in both jurisdictions under the SEM.

In September 2006 the RAs approved[4] the continuation of separate commercial arrangements for AS and related charges within Ireland and Northern Ireland for "Day 1" of the SEM - the "go-live" date, 1st November 2007 - pending a full and proper review of suitable harmonised all-island arrangements for the longer-run.

As part of this review process, in August 2007 the RAs published a consultation paper[5] by the TSOs, SONI and EirGrid[3]. This set out the high-level harmonised all-island policy options for AS and other system operations related payments/charges, for implementation at some stage post the SEM's "go-live" date.

Following this consultation period the SEM Committee issued a high level decision (HLD) paper on 27th February 2008[2] that confirmed the intention to have in place a set of harmonised arrangements for Ancillary Services/System Support Services (AS/SSS) across both Ireland and Northern Ireland. The HLD paper established the high level policy framework for the development of the proposed harmonised AS arrangements, and also addressed other payments and charges and generator performance incentives.

Following the publication of the HLD paper, the TSOs organised industry workshops on 29th April 2008 and 1st May 2008[4] on the detail of the possible services and invited feedback from participants. In September the RAs published a consultation paper[6] containing the TSOs' detailed proposals for implementing harmonised arrangements for AS, other generator payments and charges, and generator performance incentives. This consultation paper was the subject of an industry briefing session on 1st October, chaired by the TSOs and involving both RAs, to explain the proposals.

The RAs have reviewed the comments received to this consultation paper. A total of eight responses were received. The detailed responses from six parties, where parties had no objection to publication, are published separately with this paper, Following from this the SEM Committee has made decisions on the future implementation of harmonised arrangements for ancillary services, other related payments/charges and generator performance incentives across the island in the SEM, for implementation from 1st October 2009, as set out in this paper.

[4] [AIP-SEM-160-06] "Day 1 Decision for System Support Services in NI and Ancillary services, Short notice redeclarations

[5] [AIP-SEM-07-447] "Proposed System Operations Services' Payments & Charges in SEM"

[6] [AIP-SEM-08-128] "Harmonised Ancillary Services, Other System Payments & System Charges' September 2008

3. Scope and Structure of Paper

3.1. Scope of Paper

The main objective of this paper is to present the SEM Committee's decisions on the detailed harmonised all-island AS policy, other related payments/charges and generator performance incentives that will be applicable from 1st October 2009 in the SEM. Rates and charges, included as indicative in the TSOs' consultation paper, will be the subject of a follow-up consultation. The actual rates for the initial harmonised payments and charges and generator performance incentives under these arrangements will be the subject of a consultation in early Q2 2009. The rates will be decided by early Q3 2009 for implementation from the start of the next tariff period; 1st October 2009. An indicative timetable for next steps can be found at the end of this paper. For clarity, the existing jurisdictional AS arrangements will continue until the harmonised arrangements are implemented on 1st October 2009.

3.2. Structure of Paper

This paper should be read in conjunction with the TSOs' AS consultation paper[6] and covers the following issues:

- Harmonised Ancillary Services;
- Reserve;
- Reactive Power;
- Black start;
- Potential New Ancillary Services;
- Alternative Fuel Payments;
- Trip, Short Notice Declaration and Testing Charges; and,
- Generator Performance Incentives.

For each of the above a brief summary of the TSOs' proposals as set out in their consultation paper is provided, followed by an overview of the responses from commentators. A subsequent response by the TSOs is included with commentary by the RAs, as appropriate, on the issues raised and other related matters. Taking into account the views of respondents to the consultation, the decision of the SEM Committee follows.

A summary of the SEM Committee decisions and a programme of the next steps is provided at the end of this document.

4. Harmonised Ancillary Services

4.1. Outline of Proposals

4.1.1. General Principles

The general policy principles which will apply to harmonised AS have emerged as a result of the decisions in the SEM Committee's HLD paper and on principles which were set out in the September 2008 AS consultation paper. These include:

- The cost of AS will be socialised but new generating plant and interconnectors may be subject to a reserve causation charge depending on their size and impact on system costs;
- Payments for ancillary services should not duplicate payments from the SEM, or other schemes
- Charges will apply for underperformance;
- AS procurement will be based on the ability to deliver the service required for system operation and independent of the technology used. But payments may vary if the value of a service differs if it is provided by alternative technologies due to their technical characteristics; and,
- There will be harmonised policies and rates.
- In the event of conflict between the requirements of the Grid Code, Connection Agreement and AS contracts, the requirements of the Grid Codes and Connection Agreement will take precedence over AS contracted values; and,
- AS characteristics will be agreed for each service provider based on technical capabilities and transmission system needs.

4.1.2. General Guidelines

The TSOs set out a number of general guidelines considered necessary to incentivise improved AS delivery. These include:

- The harmonised AS arrangements should be relatively short term in outlook as looking further ahead is difficult and doing so could result in current needs being inadequately addressed;
- AS providers should be able to reasonably predict their annual income from providing AS and the financial implications of failing to fulfil their contracts;
- The magnitude of each charge should reflect the relative value of the associated service;
- A simple, transparent payment is desirable; and,
- The rates and charges will be set annually by the TSOs and approved by the SEM Committee.

4.1.3. Common Features of Harmonised Ancillary Services

The TSOs established a range of common features they considered appropriate for the harmonised provision of AS. These include:

- An All-Island Statement of Payments and Charges will be produced outlining all rates/charges associated with AS, including generator performance incentive charges. In setting the annual rates the TSOs will assess the capability and eligibility of service providers individually for each AS;
- Annual AS expenditure may vary from the planned TSO allowances;
- A TSO incentive scheme will be developed that may include incentives for AS provision, for example to ensure that AS requirements are determined and procured efficiently in accordance with their allowed revenue in this area;

- AS payment mechanism will be independent from payments made within the SEM;
- AS will be procured using a set of approved rates, and for these rates to be applied in contracts between the TSOs and service providers;
- A harmonised AS contractual framework is envisaged that includes a standard agreement forming the basis of individual contracts between the TSO and each service provider; and,
- Charges for non fulfilment of AS contracts will be based on the payments available for the service and the relative magnitude of the impact of the non delivery. Monies collected as charges will be used to contribute to the funding of the AS expenditure of the following year.

In addition, the RAs also indicated that no significant AS allowance changes, from those currently allowed for, should arise from the implementation of an all-island AS harmonisation arrangements if SEM requirements do not change. However, if SEM requirements change then the AS allowance may change accordingly. The TSOs will annually forecast the AS requirements in their respective jurisdictions and determine allowances for RAs approval based on the applicable RA's approved rates.

4.2. Summary of Respondents' Views

Most respondents welcomed the harmonisation of AS. One suggested it was the next logical step in the development of the All-Island Energy Market. Another was encouraged by the pricing principles of clarity, predictability, transparency and effectiveness. Another suggested that the harmonised AS policy fulfils the regulatory directive that procurement of services be based on the ability to provide the service and be independent of the technology used – although one noted that the diverse nature of plant available would make the task of implementing a single set of rules that treats plant equally difficult. Another noted that the transparency and unbundling of AS has the potential to provide a positive investment environment and also enhance the security and economic operation of the SEM.

However, several respondents suggest that the AS pot should increase, with only one commenting that no increase in the AS allowance was necessary. One suggested that the increase was necessary as the number of products paid from the AS pot is increasing and the number of generators providing them is increasing, thus diluting the value of the services. Two respondents suggested that the AS pot should better reflect the value of the services provided, particularly with increasing volumes of wind generation on the system.

Two respondents also raised concern that it was not clear how the TSOs will determine the volume of each AS required and suggested the RAs and TSOs should publish and consult annually on a clear methodology for determining the level of ancillary services.

Many respondents expressed concern that in general the proposals are heavily weighted towards charges and charges rather than incentives as a way of motivating desirable behaviour in the provision of AS. The respondent also suggested that many of the incentives in the SSS arrangements have been removed, and most of the charges in the SSS arrangements substantially increased. A number of respondents expressed concern that the proposed charges for failure to provide AS were disproportionately high compared to revenues, and could potentially lead to a net loss for the generator and disincentive to offer AS. Another questioned what will happen to revenues received from AS charges. Concern was also expressed over the AS rates outlined in the consultation, suggesting that application of such rates would not sufficiently cover costs.

One respondent suggested that the current proposals introduce substantial income uncertainty in relation to the risks associated with dispatch and constraint decisions made by the TSOs. Such

uncertainty increases the risk of NI PSO volatility and so will have a direct impact on the setting of tariffs by Suppliers in NI.

One respondent supported the focus on AS requirements over next few years rather than longer term. However another disagreed and suggested that focusing on short term needs rather than providing signals for new investment is the wrong approach.

One respondent suggested that, in the interest of meeting the government targets on reducing CO_2 emissions AS contracts should be offered to lower CO_2 emitting generation units first. Another respondent noted that emissions control commitments under IPPC licence conditions should be respected.

4.3. TSOs' views

For the purpose of all-island harmonisation the RAs indicated that the AS allowance will not increase significantly; however if new AS are justifiable then the AS allowance may increase going forward subject to RA approval. The TSOs acknowledge that in the short term as new providers contract for AS then the rates may be diluted and that more competitive procurement of AS will be appropriate in the future.

In terms of allowing AS payments to reflect the value of the service provided, the TSOs point to the SEM Committee's HLD paper that concluded AS payments would not be linked directly to value, but point out that the AS allowance does indirectly reflect value in the relative payments between AS.

The TSO reiterate that the AS allowance, or 'pot', is based on the historical allowance and that the volume required will be discussed at industry workshops that are both frequent and likely to become more frequent.

The TSOs consider that the paper is balanced in terms of payments and charges for AS and that the charges proposed are not excessive. The TSOs consider that AS payments and charges are fundamentally linked through the AS allowance and so if low charges are set then low payment rates will be set. Overall the TSOs' consider that more incentives/payments will exist for AS than charges. Any monies collected by the TSOs as charges will be used to contribute to the funding of the next year's AS expenditure.

The TSOs acknowledge than the indicative rates in the consultation paper are conservative and were used deliberately to focus participants' attention on the design of the AS scheme rather to assess potential revenue from the scheme. The actual rates will be consulted during early Q2 2009.

However the TSOs also recognise that other topics only include charges intended to encourage improved operational performance and compliance. The TSOs' consider that some respondents are not clear on the distinction between AS payments/charges and Generator Performance charges.

On potential NI PSO volatility, the TSOs consider that harmonised arrangement does introduce a small level of additional uncertainty to AS payments. However the magnitude of the AS payments and the uncertainty is relatively insignificant when considering the setting of tariffs.

4.4. RAs' Comments

Overall the RAs consider that the TSOs' proposals are consistent with the AS HLD policy.

The RAs concur that the basis of determining the AS 'pot' is historical, but acknowledge that, as the generation mix changes in the future, then the pot size may also change. It is important however to ensure that the introduction of the harmonised AS arrangements by themselves result in no significant increase in the AS pot. If SEM requirements change then the AS allowance may change accordingly.

In terms of determining the volume of AS required, the RAs concur with the TSOs' views that the requirement will be informed by discussion at industry workshops and that transparency is an important overall objective of the harmonisation. Forecast AS requirements by the TSOs will form an essential part of the TSOs incentives periodic review by their respective RA.

The RAs do not agree that the system is biased towards charges rather than incentivising the timely provision of AS services. Non-performance with respect to the contractually agreed provision of AS would generally impose a system cost. A key objective of the follow-on consultation on AS rates/charges will be to balance payments and charges to remunerate and incentivise the provision of services. Charges for underperformance should be proportionate to the costs that the underperformance imposes on the TSOs and, consequently, on other users of the transmission system.. The RAs consider that the harmonised arrangements for the provision of AS services will provide sufficient incentives to offer AS.

The RAs do not consider that the main purpose of the AS market is to provide long term investment signals – that is the role of the Capacity Payment Mechanism (CPM).

4.5. SEM Committee Decision

The SEM Committee has decided to approve the general principles and common features for the all-island AS harmonisation arrangements as proposed by the TSOs.

5. Reserve

5.1. Background and definition

In order to manage the transmission systems, the TSOs must be able to contend with unexpected losses of generation capacity or increases in demand. In order to accommodate unexpected increases in demand or shortfalls in generation output a prudent level of operating margin is maintained by the TSOs, where the operating margin is the amount of Reserve available (provided by additional generation or demand reduction measures) above that required to meet the forecast demand.

5.2. Outline of harmonised proposals

Given that the most important components of the Operating Margin are Operating Reserve and Replacement Reserve, the harmonised payment and charging schemes will be built around these two categories. The prudent level of operating margin required for the island is set jointly by the TSOs.

The main design features of the harmonised arrangements for reserve are:

- Five key categories of reserve are identified:
  i. Primary operating reserve;
  ii. Secondary operating reserve;
  iii. Tertiary 1 operating reserve;
  iv. Tertiary 2 operating reserve; and,
  v. Replacement reserve.
- Fixed minimum regulated payment rates for the services are set annually based on the AS allowance and predicted level of contracted provision;
- In order to facilitate predictability of income for service providers, the use of a variable component in the rates, which was allowed in the SEM Committee's HLD paper, will not be applied at this stage;
- Each unit contracts for its capability level and Reserve characteristic curve for each service based on past performance and expected future performance;
- Each unit declares its Reserve availability to the TSO for each trading period to a maximum of its contractual capability in accordance with the relevant Grid Code;
- Charges are applicable where units fail to deliver the declared level of performance. Charges will be dependant on the level of underperformance during low frequency events which will be monitored. Charge per incident will be equivalent to a corresponding 30-day reserve payment;
- Payment is calculated for each category of reserve in each trading period taking into account its average power output, reserve curve characteristics, declared and contracted availability;
- The TSOs may enter contracts with reserve providers to take into account longer term system requirements and facilitate investment in certain types of plant. It is expected however that long term contracts would only occur in rare cases; and,
- Demand side management (DSM) schemes are an important element of Reserve, and while the harmonised design for Reserve has been developed with an awareness of DSM, it has not been explicitly catered for.

5.3. Respondents' Views and Comments

Some respondents welcomed the proposal to fix rates and so improve predictability. However one suggested that it is unreasonable to expect generators to sacrifice their current level of income in favour of a scheme that allows for predictability of income.

One respondent suggested that the payment mechanism does not incentivise provision of reserve and should be reviewed. The respondent suggested that the likely effect of the proposed charges for underperformance is to incentivise generators to be conservative in the values contracted for reserve, potentially leading to a reduction in additional reserve. It also expressed concern that no payments for higher availability than contracted values are available. Another suggested that the proposals do not seem to include any weighting to incentivise maximum provision of AS at times of greatest system risk.

One respondent also expressed concern that double payment may occur vis-à-vis payments made in the energy market and the AS market which may be akin to double payment for the same service. The respondent suggests the RAs consider reducing the reserve payment to plants that receive an unconstrained payment and increase reserve payments to those plants that do not receive a market schedule.

One respondent expressed concern that uncertain provisions are in place to impose reserve causation charges on new generating plant and interconnectors and asks for greater clarity, strongly cautioning that reserve causation charges would make the investment climate much more difficult.

Some respondents welcome the decision to introduce fast response reserves, particularly to help manage increasing volumes of wind generation, but expressed concern that such additional reserve may be met at the expense of existing reserve levels.

One respondent expressed concern that it is not clear how TSOs determine which plant carries reserve and that clear rules are required around dispatch decisions.

One respondent suggested Reserve should be paid based on availability as is the case in Northern Ireland and expressed concern that adopting the harmonised proposal would result in all PPA contracted plant not qualifying for Reserve payments.

5.4. Summary of TSOs' Views and Comments

When comparing the existing arrangements to the proposed harmonised arrangements the TSOs consider that providers in the South will see greater predictability while providers in the North will see lesser predictability. Harmonisation is a balance between the best of both arrangements.

In terms of Reserve payments not incentivising provision, the TSOs consider that for medium term operational planning it is helpful for the TSOs that the AS agreement values best reflect the typical capability of the units. As a result the TSOs have incorporated the contracted values into the payment calculation.

The TSOs do not consider that payment for AS represents double counting to generators in the energy market given that for operating margin, speed of generator response is important and not simply capacity provision. The TSOs also point out that the double counting issue between the energy and AS market has been considered and that co-optimising AS with the SEM is an undertaking considered for the future, after harmonisation is implemented and enough experience about the performance of the arrangements is obtained.

The TSO consultation paper did not elaborate on the reserve causation charge and repeated the SEM Committee's HLD paper. The TSOs indicated that they would welcome further clarification on the issue of the reserve causation charge on new generating plant.

The TSOs conclude that reducing reserve payment to plant in the unconstrained schedule and increasing it to plant that is not scheduled goes against the design of procurement based on the ability to provide the service (independent of market schedule). The TSOs consider that plant scheduled to run do so on merit and should not subsequently be disadvantaged for AS payments.

Regarding clear rules on these dispatch decisions, the TSOs point to the industry workshops that have been held to discuss the issue that are both frequent and are likely to become more frequent.

The existing arrangements in NI for Reserve payments closely reflect the capacity payment. The TSOs point out that the harmonised arrangements move away from this. The TSOs believe that PPA contracted plant will qualify for Reserve payments.

5.5. RAs' Comments

The RAs consider the efficient and transparent procurement of reserve is of particular importance to a market with the characteristics of the SEM. The RAs also acknowledge that the importance of reserve is likely to increase in the future as larger amounts of wind are connected to the system.

The HLD policy paper allowed the use of fixed and variable rates. The TSOs proposals contemplate introducing only fixed rates in the interest of clarity, predictability of income and simplicity. If in the future further operational flexibility is required the TSOs may make proposals for adding variable rate payments to incentivise availability of certain types of plant at specific times.

The reserve causation charge was introduced in AIP/SEM/53/05. The RAs decided in AIP/SEM/53/05 that whenever a new plant (and potentially an interconnector) applies for connection to the system, a study will be conducted by the TSOs to determine whether the reserve requirement for the system as a whole has increased as a result. If it is shown that the connection of new plant will increase the reserve requirement for the system as a whole, the decision document indicated that new plant may be assessed as having a reserve causation charge upon connection. The AS HLD paper clarified that the TSOs should only have to undertake a system reserve study when a new plant (or interconnector) applies for connection if a credible outage of the new plant would cause a capacity shortfall greater than the largest credible outage of the largest plant already existing in the market. Furthermore a reserve causation charge may only be applied to the new plant if the increased reserve cost, estimated on an annual basis, outweighs the benefits from the probable reduction in marginal prices due to the expected improved efficiency of the new plant and the displacement of less efficient units in the dispatch. The TSOs will have to undertake a market study with and without the new plant to forecast the changes in the market marginal costs. Finally the reserve causation charge, if applicable, should be applied on an annual basis and be commensurate with the system costs of the new plant calculated by the TSOs. The principles for the reserve causation charge were approved in the Harmonised All-Island Ancillary Services Policy Decision Paper (AIP-SEM-08-013). Following separate discussions with the TSOs, the RAs plan to approve, in H1 2009, the calculation guidelines and detailed implementation arrangements for the reserve causation charge that may be applicable for new large plant or interconnections.

It is considered important that transparency in the quantification of requirement and selection of services is also provided to the market. Forecast AS requirements by the TSOs will form an essential part of the periodic review of the TSOs incentives by their respective RA. In addition regular financial

information about AS payments will be provided as part of the regular SEM reporting. Further details will be provided by the TSOs in the forthcoming consultation on payments and charges.

5.6. SEM Committee Decision

The RAs are satisfied that the TSOs' proposals for harmonised reserve in the SEM are consistent with the AS harmonised HLD policy. Accordingly the SEM Committee has decided that they will be adopted.

6. Reactive Power

Reactive Power is the result of the cyclical energy exchange between the electric and magnetic fields of the plant and equipment connected to the network. Reactive Power is essential in controlling voltages across the network and maintaining an adequate voltage profile is required for the stability of the power system. Generators and certain network equipment are the main sources of reactive power. Generally, reactive power must be provided close to the location where it is required. The provision of reactive power is a mandatory service for generators under the Ireland and NI Grid Codes. The SEM provides signals for the provision of active power. However, provision of active power does not directly lead to provision of Reactive Power.

6.1. Proposed Harmonised Design

The principle design features of the harmonised AS requirement for reactive power are:

- A fixed payment rate for the service is set annually based on the AS allowance and predicted level of contracted provision. The payment is intended to incentivise providers to maintain the capability to provide reactive power; it is not intended to refund capital expenditure or provide locational investment signals. The fixed rate payments are designed to improve predictability of income to providers;
- Each service provider contracts with the TSO on the basis of its contractual reactive power capability range that is based on historic and expected performance;
- Each unit contracts for its capability range and where appropriate its Reactive Power characteristic curve and its Automatic Voltage Regulator (AVR) capability. Payment is scaled to incentivise the provider to contract at an achievable level;
- For each trading period, an applicable unit declares its capability range independent of output to the TSO in accordance with the Grid Codes;
- Charges will apply to units who do not deliver to their set capability range which will be monitored. Charge per failure to provide will be equivalent to a corresponding 30-day contractual capability payment; and,
- The TSOs will be allowed to enter into long-term contracts with market participants for Reactive Power in order to take into account longer-term system requirements. Reactive power costs will be borne by the TSO and are intended to act as a network investment signal.

While a variable payment was considered attractive, it was considered that a simpler fixed rate system could provide the income predictability and probably provide the necessary signals to providers whilst maintaining low implementation and administration costs.

The TSOs also sought views on having both AVR status and the status of every power system stabiliser hard wired to the relevant TSO.

6.2. Summary of Respondents' Views

One respondent suggested that a payment for availability as in the current scheme should also be applied to the proposed scheme and expressed concern that a payment based on percentage of time synchronised will unfairly disadvantage plant that has been constrained off and also is unfairly biased towards base load plant.

One respondent called for further clarification on how the status of the AVR is to be determined.

Another pointed to the statement in the paper that reactive power needs to be provided in the location in which it is needed, and questioned why no locational signal for reactive power was included. The respondent suggested that the use of TLAF provides a weak locational signal. The respondent went on to suggest that, in the absence of a locational signal from reactive power, the development of a wind responsive ancillary service payment directly linked to the areas of intense wind development might be explored; this would provide a locational signal. This would work to allow the nodal selection in Ireland's Gate connection process to work more efficiently as the conventional plants used to support wind would have a signal to develop in certain locations.

One respondent suggested that there is a risk that generators will not be incentivised to provide reactive power or AVR services and may opt not to provide such services for fear of charges. A further considered that the proposals do not seem to include any weighting to incentivise maximum provision of AS at times of greatest system risk

6.3. TSOs' comments

The TSOs consider that the design is based on payment made given the ability to provide the service. While a variable component was considered, the TSOs concluded that its application could result in relatively high implementation and administration costs and that the simpler fixed rate scheme would also provide greater income predictability to providers

The AVR status will be declared in EDIL as with other AS parameters. A hard wired solution has been impractical.

A locational payment element has not been included despite Reactive Power being strongly influenced by location as it was considered that it might influence an investment decision incorrectly since the Reactive Power requirements at any location can change. A further weakness surrounding a locational element is complexity. A Reactive power locational signal would also be weak given the magnitude of the AS allowance relative to other payments.

In terms of wind generation – wind generators are obliged to provide reactive power. However the TSOs consider that the suggestion to develop a wind responsive AS payment linked to areas of high wind penetration should be considered in the context of the wider discussion on the integration of renewables.

The TSOs do not consider that charges levied on non performance will act as a disincentive to provide reactive power or AVR services given that generators are required to provide reactive power through Generator Licenses and the Grid Code. The TSOs also consider that weighting would not change the behaviour of providers and would add complexity to the system.

6.4. RAs' Comments

For generators the actual cost of providing reactive power for a committed unit is very small as the excitation system involved is required for the generation of electricity. Additional costs arise from marginal increases in losses in the exciter and stator of the alternator and from small and difficult-to-quantify increases in maintenance and plant life costs.

Similarly to the case of reserve, the HLD policy paper allowed the use of fixed and variable rates. The TSOs proposals contemplate introducing only fixed rates, in the interest of clarity, predictability of generator income and simplicity. The RAs do not object to that given that, if in the future further operational flexibility is required, the TSOs may make proposals for adding variable rate payments to incentivise availability of plant at specific times and or geographical locations.

Charges will be applicable on a per failure basis as the application of charges over consecutive trading periods due to a failure is considered would result in a too onerous charge.

The TSOs propose to initially fund the reactive costs from the AS pot. The HLD policy paper indicated that Reactive Power costs would be borne by the TSOs and act as a network investment signal. The TSOs indicate that further consideration is needed to implement this incentive. The RAs consider that this issue could be included in the consultation for the implementation of TSOs incentivisation scheme.

6.5. SEM Committee Decision

The RAs are satisfied that the TSOs' proposals for the implementation of harmonised reactive power arrangements in the SEM are consistent with the AS harmonised HLD policy. Accordingly the SEM Committee has decided that they will be adopted.

7. Black Start

Black start plant can start without an external power supply and be used to energise network elements and provide power to start other plant in the system following a blackout.

7.1. Proposed Harmonised Design

The TSOs' proposed arrangements will apply to all existing Black Start sites in Ireland and all future sites in NI and Ireland. Existing stations in NI will receive testing payments with the payment for Black Start being implicit in their existing connection conditions. The proposed harmonised design for black start includes the following features:

- Black start will be contracted on a site by site basis based on a number of technical requirements;
- In the case of a newly connecting plant, contracts will be established following a tender process. As a secondary step contracts may be awarded via direct negotiations. The awarding of contracts for new plant will be subject to approval by the relevant RA;
- Contract length will be subject to negotiation with the TSO and long term contracts are envisaged, though not necessarily linked to the expected life of the plant. Black Start plant must meet minimum technical criteria;
- A fixed payment rate for the service will be set and adjusted annually based on the cost of providing the service that will be advised by the potential provider. The minimum rate of return may reflect the TSOs' cost of capital, but providers may seek to justify a rate above this;
- In each trading period a unit will declare its Black Start status;
- Payment is calculated for each trading period;
- Each site is required to carry out Black Start tests that will be monitored by the respective TSO; and,
- Charges will apply in case of annual tests failure. Charges will vary depending on the severity and on the type of test failed, being equal to 30 days maximum payment for a partial failure to meet some contractual element, up to 90 days maximum payment in case of outright test failure.

Each TSO will publish information of their respective requirements for Black Start. This will include an indication of favourable locations for new Black Start investment, a minimum set of Black Start criteria for a Black Start service provider, and a list of Black Start service providers and their annual payment rates.

7.2. Summary of Respondents' Views

One respondent commented that the proposals for payments and charges for the provision of Black Start capability are fair and reasonable. Another supports the move to the more transparent process outlined in the paper.

One suggested that prices for Black Start should be based on market rates rather than requesting the generator to justify costs. Another felt that setting the minimum rate of return at 5 per cent is too restrictive and suggested instead that the rate be set at a given per cent above some pre-predefined base. One suggested that a maximum contract length should be established of 5 to 10 years.

Another questioned the impact on other units that might result in performing a Black Start test.

In terms of the procurement process, one respondent sought clarity over funding a system study to determine whether a particular site is suitable for Black Start, suggesting that the generator/developer requesting the study should pay any relevant costs associated with the work.

In terms of charges, one respondent suggested that a 90 day penalty is excessive for an outright failure to Black Start.

One respondent suggested that the proposed principle that no payment is currently made for existing Black Start capability in NI is discriminatory. The respondent also argues that Black Start does not differ from Reserve or Reactive Power that are also embedded within the availability payments of relevant PPAs.

7.3. TSOs' Views

The TSOs suggest that the procurement rules are likely to require the relevant TSO to go out to tender for new Black Start. If these tenders are unsuccessful then direct negotiations will follow.

The purpose of publishing a minimum rate of return would be to generate interest in providing the Black Start service. It would provide a guideline for potential service providers to begin developing their offer.

The TSOs consider that any failure to Black Start for a planned test is a serious failure with significant implications for the system and should therefore carry a proportionate charge.

The TSOs consider it unclear whether there is an existing Black Start payment to generators in NI and that the assertion that Black Start does not differ from Reserve or Reactive Power embedded within the availability payments of PPAs should be investigated.

7.4. RAs' Comments

The RA's consider the proposed arrangements broadly in agreement with the principles of the HLD paper.

Regular testing is particularly important for this service to ensure availability when required. The RAs agree with the principle that an outright failure during testing should carry a more severe penalty. It is considered that a number of generator testing arrangements could be further consolidated as part of a Testing consultation indicated by the TSOs and would therefore instruct the TSOs to consider the merits of consolidating some of the AS testing requirements, payments and charges.

The RAs concur with some of the comments that in the evaluation of the rate of the return required by potential providers the comparison to the TSOs cost of capital may not be appropriate and should not form a benchmarking reference in the evaluation of potential providers.

The RAs also consider important that the proposed arrangements recognise costs in existing/committed black start facilities in Ireland to ensure that existing providers are not disadvantaged by the new arrangements as indicated in the HLD paper and instruct the TSOs to consider this in the follow-on consultation on AS rates and payments.

The RAs consider that the proposed arrangements should apply to all plant in both NI and Ireland.

7.5. SEM Committee Decision

The RAs are satisfied that the TSOs' proposals for harmonised black start in the SEM are consistent with the AS harmonised HLD policy subject to the comments above. Accordingly the SEM Committee has decided that they will be adopted.

8. Potential New Ancillary Services

8.1. Background

In the course of assessing the potential design of a harmonised AS scheme the TSOs have identified a number of potential new AS they consider may be necessary to enhance secure, reliable and economic operation of the transmission system. In particular the TSOs consider that additional reserves over and above those already identified may be required. The rationale for the increased reserve requirement is growing volumes of intermittent wind generation that result in rising variability and thus a greater need for reserve.

8.2. Proposed New Services

8.2.1. Warming Contracts

The TSOs have identified a possible future potential AS service, the requirement for warming contracts. The warmth state of a generating unit relates to the time it requires to resynchronise – following desynchronisation a plant moves from hot to warm to cold. As the plant cools it is slower to react. Plant that can change to - or maintain a - hotter warmth state will reduce quick start plant running periods.

Two products are proposed based on:

- The ability to change to and maintain a hotter warmth state; and,
- The ability to maintain hot warmth state after desynchronisation.

The key design features would include:

- Payment would be a fixed rate per hour to maintain warmth state;
- The service would be tested by the TSO: a test failure would incur a charge;
- Delivery or non-delivery of the service would be assessed by the TSO by reviewing the time to synchronise of the unit. Non delivery would incur a charge; and,
- There would be an interaction between warming contracts and the SEM which would need to be considered in developing the warming contract arrangements.

8.2.2. Combined Cycle Gas Turbines (CCGT) Multimode Operation

CCGTs can operate in either open or closed cycle modes. Open cycle operation with boiler bypassing provides a fast run up ability similar to an OCGT. The SEM does not currently facilitate multimode operation being offered. The minimum stable generation output level and pricing relates to closed cycle operation. To facilitate quick start / open cycle operation an additional Ancillary Services payment could be provided to secure the service and encourage flexible CCGT operation / investment.

The product proposed is based on:

- Open Cycle Gas Turbine operation; and,
- Flexibility to continue to closed cycle operation after dispatched on open cycle.

OCGT operation would be paid on the basis of the difference between SEM income and an agreed income for operating in OCGT mode (determined on a costs plus basis in the procurement process).

8.2.3. Pre-Emptive Response

Generator unit trips have a major impact on power system operation. Generators will be incentivised not to trip by the application of trip charges. The proposed Pre-Emptive Response service goes beyond those incentives to lessen the effect of some trips. The essence of the proposed service is that it is possible in some cases to recognise when a trip is imminent. If the TSO has this information, it may then instruct a fast response unit (or interconnector) to increase output; and so lessen or prevent frequency transients. The proposed mechanism has three components:

- A generator unit that has to trip, winds down rather than tripping instantly (this would be incentivised by the charges described in Section 9.2);
- The generator unit provides a "wind down" signal to the relevant TSO; and,
- The TSO instructs a fast response unit or an interconnector to adjust output.

The main "product" of the Pre-Emptive Response is envisaged to be the response by a fast response unit to a "wind up" signal. A payment would be made for the pre-emptive response. The payment could be based on availability or event-driven.

8.3. Respondents' Views

A number of respondents were positive about the addition of potential new AS. However support varied between the three proposed additions.

Limited support was expressed for warming contracts – two respondents were positive. Others raised a number of concerns. One respondent suggested it would be technically difficult and environmentally questionable for plant to remain in an extended warm state. Another considers that there is no need for warming contracts as existing reserve categories can be used, allowing different technologies to compete. Another suggested that warming contracts may be more expensive than contracting with peaking plant/OCGT. Another proposed further research should be conducted to assess the benefits of warming contracts.

On multi-mode operation there was also limited support – one respondent considers the proposal deeply flawed and another claims it would not offer the service. Two respondents welcomed the proposals, but one suggested the costs implied should be considered. Two expressed the view that bilateral contracts would be the most appropriate way of securing AS contracts for multi-mode operation.

Relatively little comment was received on pre-emptive response. Those who did respond suggested further detail/investigation is required.

8.4. TSOs' Views

The TSOs included the potential new services in the consultation paper to obtain preliminary views from industry. The responses received are useful and will be brought into the wider discussion on the integration of renewables and likely need for more flexibility on the systems.

8.5. RAs Views

The RAs recognise that the TSOs should have the flexibility to avail of services that are not amenable to or do not warrant the development of market solutions but nonetheless have the potential to make a valuable contribution to system operation as indicated in the HLD policy paper.

The RAs conclude that at present there does not seem any strong evidence that the system requires or would benefit for any new ancillary services in addition to those approved in the HLD paper. This view is reinforced by the consultation responses that expressed limited interest in the potential new future ancillary services tentatively suggested by the TSOs mainly for illustrative purposes. However the TSOs should continuously consider the benefits derived from the introduction of new (or modified) services as system requirements change, for example with the increased penetration of variable renewable sources, and approach the RAs for consideration of new services in the SEM.

8.6. SEM Committee Decision

No new AS services will initially form part of the harmonised AS arrangements expected to start in on the 1st October 2009. The TSOs are encouraged to suggest new ancillary services, or modifications to existing ones, for consideration by the industry and for approval by the SEM Committee, when anticipated to be required by the SEM.

9. Alternative Fuel Payments

9.1. Proposed Alternative Fuel Payment

A number of generator units are capable of operating on multiple fuels. In order to test the generators' capability of running on alternative fuels, tests are performed periodically. In Ireland, in accordance with the Commission's decision paper on secondary fuelling (CER/09/001), EirGrid can perform up to two successful tests per year on each generator. Running on an alternative, potentially less economic, fuel may impose costs on the generator not currently remunerated under the SEM mechanisms for which compensation should be received. It is not appropriate for generators to receive payment through the market for running on an alternative fuel for a number of reasons, such as:

- For the testing regime, EirGrid wish to simulate a real emergency event by giving generators a few hours notice to change fuels. Generators therefore would not likely have an opportunity to bid into the market on their secondary fuel as the Gate Closure would have passed; and,

- Should a generator have an opportunity to bid into the market day-ahead on their secondary fuel, they may or may not be in the market schedule. To ensure the generating unit is in the market schedule, the generating unit would have to be given "Generating Unit under Test" status, which is not appropriate for secondary fuelling (please see the Commission's proposed decision on secondary fuelling CER/08/206).

The proposed design for an Alternative Fuel Payment in Ireland includes the following features:

- The TSO requests, schedules and monitors the test;
- No payment is made in the event of a failed test unless justified by the generator;
- The payment covers up to three phases: change to alternative fuel; operation using alternative fuel; change back from the alternative fuel;
- The payment is based on the incremental fuel and running costs incurred by the generator unit in using the alternative fuel; and,
- A payment is made on a monthly basis if alternative fuel operation is instructed.

9.2. Respondents' Views

Of those who responded the main concern expressed was that the proposed eligible costs do not capture all relevant costs that might be incurred by a generator operating on alternative fuel.

One respondent commented that generators are paid as per the provisions of the PPAs that reflect the cost of the fuel burnt. The respondent also noted that, in Northern Ireland, a mechanism already exists for compensating generators for the cost of fuel switching.

9.3. TSOs' Views

In the longer term, EirGrid will develop the compensation payments mechanism for Secondary Fuelling with a view to expanding the arrangements on an all-island basis to account for the work being done by NIAUR with respect to the Fuel Security Code.

9.4. RAs' Views

Arrangements for harmonised secondary fuelling on an all-island basis will not be in place for implementation in October 2009. In Ireland a decision paper by the Commission on the arrangements for Secondary Fuel was published in January 2009 (CER/09/001). A separate consultation process will

be run by EirGrid early in 2009 on the testing procedures and compensation payments for secondary fuelling to apply in Ireland. The testing regime will begin once the testing procedures have been developed by EirGrid which is expected in October 2009. EirGrid will be able to test every generator up to two times per year on their fuel changeover arrangements. The variable costs associated with these tests will be remunerated to generators through the Ancillary Services mechanism. The RAs have been advised by the TSOs that the design of the billing system required for the harmonisation of AS will not depend on the outcome of the Secondary Fuel consultation.

In Northern Ireland separate arrangements for fuel security, including testing, will be published in the coming months. For the avoidance of doubt, these payments relate only to tests instructed by the TSOs and not tests initiated by the generators themselves.

10. SND, Trip and Generator Testing Charges

Short Notice Declarations (SND) and Trip charges are made for the variation in availability of committed plant or unscheduled outage of dispatched plant. The charges are intended to incentivise behaviour that enhances system security and reduces operating costs. In addition to SND and Trip charges the TSOs included a proposed Generator Testing Charge that would apply when a generator undertakes testing for various reasons.

10.1. Proposed Harmonised Design

10.1.1. Short Notice Declarations

For SNDs the charge is intended to incentivise longer notification or redeclarations – the harmonised design features for SND include the following:

- The earlier the notification the smaller the charge;
- The charge will generally be applied to downward declarations within a 12 hour period;
- The charge will only apply to re-declarations over 10MW, although re-declarations below 10 MW more than three times in an hour will incur a charge;
- The charge is set to a single annual value; and,
- The charge will apply to all units dispatched through EDIL, and so will include controllable wind, demand side units and interconnectors.

10.1.2. Trips

The design is intended to minimise the number of trips and, when unavoidable, to incentivise the unit to trip as slowly as possible, with features as follows:

- The charge will apply to demand side units and all generation (including wind, distributed generation and future generation technologies);
- The higher the MW loss, the higher the charge;
- The faster the trip the higher the charge; and,
- Charge rates will be reviewed annually.

Separate charges will be made for SNDs and Trips. A single generation outage may give rise to both SND and trip charges. The TSOs do not propose to fully cover all the costs associated with a trip but to send a strong signal to minimise sudden plant unavailability.

10.1.3. Generator Testing Charges

New generator units undergo extensive commissioning testing. Existing units may also undergo testing on a regular basis, for example after refits, major maintenance etc. Please note that compensation payments (as opposed to charges) for tests on a secondary fuel as discussed in Section 9 are not relevant to this section. Generator testing charges may lead to increased dispatch balancing costs. Two generator test charges are proposed:

- Existing SEM testing charge – no change is proposed from the current system; and
- Commissioning charge – with a charge set annually based on unit size and an assessment of trip risk.

10.2. Summary of Respondents' Views

Several respondents raised concern that that SND and trip charges should not apply to the same event. A number suggested that the model currently used in NI is employed where only the larger of the two charges will be imposed. One noted that the charges for a trip appear to have increased by almost 50% for some plant.

One respondent suggested that the same SND charge should not apply to a unit on load as an off load unit as the cost to the system is not the same. The respondent also suggested that the SND charge needs to take account of the Uninstructed Imbalance (UI) charge that may also be occurred. It was also noted that there appears little incentive to give greater than 12 hours notice.

On the Generator Testing Charge, a number of respondents commented that avenues already exist relating to generator testing, including a methodology for testing generator units in the Trading and Settlements Code and a formal within day testing procedure defined within Grid Code. As a result a new charge is unnecessary.

In general respondents provided a cautious response to the proposed Generator Testing Charge, some requesting further detail.

10.3. TSOs' Views

The TSOs acknowledge that there has been an increase in the trip charge. However the TSOs suggest that, even with the higher cost, the cost of a trip is significantly lower than the cost of carrying reserve to compensate for the possibility of a trip.

The TSOs believe the existing methodology for testing generator units should be reviewed and intend to produce a consultation paper on the SEM testing tariff and will include the commissioning testing charges within this.

10.4. RAs' Views

The RAs are satisfied that the TSOs proposals for implementation of Short Notice declarations and trips charges arrangements in the SEM are consistent with the harmonised AS HLD policy paper.

It is considered however that the numerical values in the calculation of trip charges (TR.6) should be further considered and included in the consultation for establishing the initial values of the harmonised AS rates and charges that will follow this decision paper.

The RAs consider that charges for trips and short notice declarations could apply for the same event as the two charges incentivise different things.

The RAs consider that the scope of the TSOs consultation on SEM testing arrangements should consider consolidating some of the arrangements proposed for AS tests where practically possible and beneficial.

10.5. SEM Committee Decision

The RAs are satisfied that the TSOs' proposals for harmonised short notice declarations and trip charges in the SEM are consistent with the AS harmonised HLD policy. Accordingly the SEM Committee has decided that they will be adopted subject to the comments above.

In addition to the consultation paper on the AS rates/charges, the SEM Committee instructs the TSOs to produce a consultation paper on testing and commissioning charges during early Q2 2009.

11. Generator Performance Incentives

In a relatively small power system, such as the all-island SEM, it is very important for the efficient and economic operation of the system to ensure that the generators maintain the performance required in the Grid Codes. Otherwise the safety, security and efficiency of the system could be compromised and / or costs could be imposed on other (compliant) users of the system, for example through higher constraint costs. While the charging regime is intended to be harmonised across Ireland and Northern Ireland in time, it is proposed in the short term to adopt the following:

- The philosophy of the rebate regime already in place in Northern Ireland for existing plant will continue on an interim basis until legacy contractual issues with existing plant are resolved;
- A charging regime will be implemented in Ireland, based on current Grid Code parameters and standards. EirGrid will propose a process to achieve this; and,
- A fully harmonised charging scheme will be developed and implemented.

11.1. Proposed Harmonised Design

11.1.1. Generator Performance Incentive Principles

The proposed design for a fully harmonised design is intended to incentivise generator units to meet a number of TSO selected Grid Code parameters in each jurisdiction. This will be achieved by applying charges for underperformance. The preliminary parameters could include some of the following from the SONI SSSA arrangements in Northern Ireland: Operating Reserve, Reactive Power, minimum load, fault ride through, minimum up/down times, ramp up/down rates, minimum time to synchronise from warm and hot, times from synchronising to minimum load, times to deload from minimum load, and the maximum number of starts in a 24h period. The incentive principles include:

- All new users of the transmission system should meet the Grid Code requirements;
- All exceptions to Grid Code standards are encapsulated in RA approved derogations;
- An approved derogation relaxes a Grid Code requirement and reduces it to a new standard for the generator to which the derogation applies. Consequently, any charges for underperformance apply to the derogated standards, so long as the derogations are applicable, rather than the base Grid Code values;
- Performance of units will be judged against Grid Code standards (or if applicable, standards approved under a derogation) and will be observed by TSOs. If appropriate, TSOs may require a unit to demonstrate that it can meet a particular requirement; and,
- Charges for Grid Code underperformance are separate from, and in addition to, any charges for non-delivery under an AS contract; and,
- Multiple charges may be applicable for the same incident.

11.1.2. Generator Performance Incentives Design Guidelines

- The TSOs will observe the performance of units, judged against Grid Code standards or if applicable, standards approved under a derogation. The TSOs may require a unit to demonstrate that it can meet a particular standard;
- Charges will be applied to generator units that fail to meet their obligations under the Grid Code;
- The charges are proportionate to the costs that the underperformance imposes on the TSOs and, consequently, on other users of the transmission system. Charges will be banded to reflect the severity of the deviation from the requirement in the Grid Code;

- Monies collected through these charges will be used to reduce the all-island Dispatch Balancing Costs;
- A specific charging methodology will be developed for each of the TSOs' performance parameters that will cover the Grid Code requirements, measurement arrangements and charging principles; and,
- Multiple charges may be applicable for the same incident.

The Grid Codes may be modified to include references to charges for underperformance. A separate schedule of charges will be produced. The schedule of charges will be periodically reviewed and approved by the RAs. A partial derogation on a Grid Code requirement would be liable for underperformance charges against the adjusted obligation.

11.2. Summary of Respondents' Views

One respondent suggested that, although it is envisaged that the arrangements currently in operation in Northern Ireland will continue, the proposals do not reflect this as many of the incentives in the SSSA arrangements have been removed and most of the charges in the SSSA arrangements increased. The respondent also suggested that Connection Agreements do not facilitate the application of generator performance charges.

Another respondent suggested derogated plant must be considered on an individual basis and suggest that it might be appropriate for such derogations to be grand-fathered into the new arrangements.

11.3. TSOs' Views

The TSOs note that, in terms of calculating the charges, the intention is to base the charges on the existing SONI rebate mechanism where possible. On existing contractual issues, given the existing contractual arrangements in Northern Ireland, there will be considerable legal change required during the implementation phase.

11.4. RAs' Comments

The preliminary parameters proposed in the consultation are based on the existing arrangements in NI which the RAs consider provide a sound practical basis for implementation in the SEM. It will not be possible however to have further industry consultation on the details of the charging methodology for each of the proposed parameters if the harmonised arrangements are to commence by 1st October 2009.

The initial list of proposed parameters includes items such as reserve and reactive power which will be also be subject to separate AS charges on the basis of deviations from agreed performance. It is therefore possible that a generator could receive an AS payment on the basis of fulfilling an agreed AS and also be charged for underperformance against its obligations for the same capability under these generator performance incentive arrangements.

The RAs note however that the naming and definition of some of the proposed parameters are not consistent in both Grid Codes. It may be necessary to ensure consistency in the definition of the parameters to include in the generator performance scheme in both Grid Codes before they are implemented. The requirements for each parameter however may be different for historic and technical reasons.

It is envisaged however that in the future, as system constraints are removed, Grid Code requirements will gradually converge for new plant connected to the system. Furthermore, additional incentive parameters will be added into the future as the TSOs gain experience in operating the systems on an all-island basis.

11.5. SEM Committee Decision

The SEM Committee supports the TSOs' outline proposals on generator performance incentives and considers that they are broadly consistent with the principles stated in the AS HLD policy paper.

The SEM Committee therefore instructs the TSOs to select the incentive parameters from the existing SONI SSSA that are to be included as part of the generator performance scheme for implementation in the SEM and to provide details about the charging arrangements (from existing NI arrangements) including monitoring/measuring. The TSOs are also to review the consistency in the definition of parameters between Grid Codes and, where applicable, to detail a timetable for harmonisation of the definition of parameters.

The SEM Committee instructs the TSOs to include this incentive parameters, which will not be consulted on, in the appendix to the consultation paper (on the initial rates /charges for the harmonised AS arrangements) which will be published in early Q2 2009. The proposed charges associated with these incentive parameters will be consulted on in this consultation paper.

12. TSO Incentivisation

As indicated in the HLD, the SEM Committee consider that a TSO Incentivisation scheme is an important element of the some of the above policies as the TSOs have certain levels of discretion in the determination of AS requirements. It is also considered appropriate that, if the customer receives a benefit through actions of the TSOs, some of the benefits are used to reward the TSOs for their efficiency and performance in order to incentivise this behaviour.

As also indicated in the February HLD, the SEM Committee made a policy decision to include a performance review of each TSO with respect to AS. This will be undertaken by the relevant RA on an annual or multi-annual basis consistent with the regulatory revenue/price control in place for the TSO and any other incentives that may be applicable. The precise scope and arrangements will be covered in a subsequent consultation during H2 2009.

13. Summary of Key SEM Committee Decisions

The SEM Committee finds that the general principles and common features of the harmonised AS implementation arrangements proposed by the TSOs were in agreement with the principles in the HLD. It instructs the TSOs to produce a consultation on proposed AS rates/charges and generator performance incentives under these arrangements in early Q2 2009.

Due to the detailed nature of the implementation arrangements this section only highlights some of the most relevant features approved by the SEM Committee.

13.1. General Principles and Common Features

The TSOs followed in the September consultation the principles in the earlier SEM Committee's HLD paper. Some of the common features proposed by the TSOs and approved by the SEM Committee are summarised below.

An All-Island Statement of Charges and Payments will be produced outlining all rates/charges associated with AS, including generator performance incentive charges. AS payments will be independent from payments made within the SEM. AS will be procured using a set of approved rates, and these rates will be applied in contracts between the TSOs and service providers. A harmonised AS contractual framework is envisaged that includes a standard agreement forming the basis of individual contracts between the TSO and each service provider.

Charges for non fulfilment of AS contracts will be based on the payments available for the service and the relative magnitude of the impact of the non-delivery. Monies collected as charges will be used to reduce the AS expenditure funding requirements from general customers in the following year. For clarity, this funding arrangement will not affect the size of the AS pot annually determined by the TSOs and approved by the RAs.

No significant AS allowance changes, from those currently allowed for, should arise from the implementation of these all-island AS harmonisation arrangements. However, if SEM requirements/arrangements subsequently change, for example with the connection of increased amounts of wind to the system, then the AS allowance may change accordingly.

13.2. Reserve

The main design features of the harmonised arrangements for reserve are:

- Five key categories of reserve are identified;
- Fixed minimum regulated payment rates for the services are set annually based on the AS allowance and the predicted level of contracted provision.. In order to facilitate predictability of income for service providers, the use of a variable component in the rates, which was allowed in the SEM Committee's HLD paper, will not be applied at this stage;
- Each unit contracts for its capability level and Reserve characteristic curve for each service based on past performance and expected future performance;
- Each unit declares its Reserve availability to the TSO for each trading period to a maximum of its contractual capability in accordance with the relevant Grid Code;
- Charges are applicable where units fail to deliver the declared level of performance. Charges will be dependant on the level of underperformance during low frequency events which will be monitored. Charge per incident will be equivalent to a corresponding 30-day reserve payment;

- Payment is calculated for each category of reserve in each trading period taking into account its average power output, reserve curve characteristics, declared and contracted availability; and,
- The TSOs may enter contracts with reserve providers to take into account longer term system requirements and to facilitate investment in certain types of plant. It is expected however that long term contracts would only occur in rare cases.

13.3. Reactive Power

The main design features for reactive power are:

- A fixed payment rate for the service is set annually based on the AS allowance and predicted level of contracted provision. The payment is intended to incentivise providers to maintain the capability to provide reactive power; it is not intended to refund capital expenditure or provide locational investment signals. In order to facilitate predictability of income for service providers, the use of a variable component in the rates, which was allowed in the SEM Committee's HLD paper, will not be applied at this stage;
- Each service provider contracts with the TSO on the basis of its contractual reactive power capability range that is based on historic and expected performance;
- Each unit contracts for its capability range and where appropriate its Reactive Power characteristic curve and its Automatic Voltage Regulator (AVR) capability. Payment is scaled to incentivise the provider to contract at an achievable level;
- For each trading period, an applicable unit declares its capability range independent of output to the TSO in accordance with the Grid Codes;
- Charges will apply to units who do not deliver to their set capability range. The charge per failure to provide will be equivalent to a corresponding 30-day contractual capability payment; and,
- The TSOs will be allowed to enter into long-term contracts with market participants for Reactive Power in order to take into account longer-term system requirements.

13.4. Black Start

The main design features of the harmonised black start arrangements are:

- Black start will be contracted on a site by site basis based on a number of technical requirements;
- In the case of a newly connecting plant, contracts will be established following a tender process. As a secondary step contracts may be awarded via direct negotiations. The awarding of contracts for new plant will be subject to approval by the relevant RA;
- Contract length will be subject to negotiation with the TSO, and long term contracts are envisaged, though not necessarily linked to the expected life of the plant. Black Start plant must meet minimum technical criteria;
- A fixed payment rate for the service will be set and adjusted annually based on the cost of providing the service as advised by the potential provider. The minimum rate of return may reflect the TSOs' cost of capital, but providers may seek to justify a rate above this;
- In each trading period a unit will declare its Black Start status;
- Payment is calculated for each trading period;
- Each site is required to carry out Black Start tests that will be monitored by the respective TSO; and,

- Charges will apply in case of annual tests failure. Charges will vary depending on the severity and the type of test failed, being equal to 30 days maximum payment for a partial failure to meet some contractual element, up to 90 days maximum payment in case of outright failure.

13.5. Potential New Ancillary Services

Taking on board comments received to the September paper, the SEM Committee concludes that at present there does not seem to be any strong evidence that the system requires or would benefit from any new ancillary services in addition to those already approved in the HLD. Therefore no new AS services will initially form part of the harmonised AS arrangements expected to start in Q4 2009. The TSOs are encouraged to suggest new ancillary services, or modifications to existing ones for consideration by the industry and for approval by the RAs, when anticipated to be required by the SEM.

13.6. Short Notice Declaration Charges and Trip charges

The main approved features of the short notice declaration charges for generators are

- The earlier the notification the smaller the charge;
- The charge will be applied to downward declarations within a 12 hour period;
- The charge will only apply to re-declarations over 10 MW, although re-declarations below 10 MW more than three times in an hour will incur a charge;
- The SND charge is set to a single annual value; and,
- The charge will apply to all units dispatched through EDIL, and so include controllable wind, demand side units and interconnectors.

The main approved features of trip charges are

- They will apply to demand side units and all generation (including wind, distributed generation and future generation technologies);
- The higher the MW loss, the higher the charge;
- The faster the trip the higher the charge; and,
- Charge rates will be reviewed annually.

It is considered however that the numerical values in the calculation of the trip charges (TR.6) should be further considered and included in the consultation for establishing the initial values of the harmonised AS rates/charges that will follow this decision paper.

13.7. Generator Testing Charges

The SEM Committee instructs the TSOs to produce a consultation paper on testing and commissioning charges by early Q2 2009 that would review the existing SEM testing charging methodology and the extension of testing charges for commissioning of new units. Consideration will also be given to other testing requirements in AS and generator performance.

13.8. Generator Performance Incentives

The main features of the approved arrangements to incentivise generator compliance with relevant Grid Code parameters are:

- All new users of the transmission system should meet the Grid Code requirements;
- All exceptions to Grid Code standards are encapsulated in RA approved derogations;

- An approved derogation relaxes a Grid Code requirement and reduces it to a new standard. Consequently, any charges for underperformance apply to the derogated standards, so long as the derogations are applicable, rather than the base Grid Code values;
- Performance of units will be judged against Grid Code standards (or if applicable, standards approved under a derogation) and will be observed by TSOs. If appropriate, TSOs may require a unit to demonstrate that it can meet a particular requirement;
- Charges for Grid Code underperformance are separate from, and in addition to, any charges for non-delivery under an AS contract; and,
- Multiple charges may be applicable for the same incident.

The preliminary incentives proposed in the September consultation are based on some of the existing SONI SSSA arrangements in Northern Ireland, which the RAs consider provide a sound practical basis for implementation on 1st October 2009. These preliminary parameters could therefore include some of the following: Operating Reserve, Reactive Power, minimum load, fault ride through, minimum up/down times, ramp up/down rates, minimum time to synchronise from warm and hot, times from synchronising to minimum load, times to deload from minimum load, and the maximum number of starts in a 24h period.

The initial proposed charges associated with the parameters selected will be included in the consultation on AS rates/charges earmarked for early Q2 of 2009.

The RAs note that the naming and definition of some of the proposed parameters are not consistent in both Irish and Northern Irish Grid Codes. It may be necessary to ensure consistency in the definition of the parameters to include in the generator performance scheme in both Grid Codes before the harmonised AS arrangements are implemented. The requirements for each parameter however may be different between units for historic and technical reasons.

It is envisaged that in the future, as system constraints are reduced, Grid Code requirements will gradually converge for new plant connected to the system. Furthermore, additional incentive parameters will be added into the future as the TSOs gain experience in operating the system on an all-island basis.

13.9. TSO Incentivisation

As also indicated in the February HLD, the SEM Committee made a policy decision to include a performance review of each TSO with respect to AS. This will be undertaken by the relevant RA on an annual or multi-annual basis consistent with the regulatory revenue/price control in place for the TSO and any other incentives that may be applicable.

14. Next steps

Following this decision on the detailed principles for AS under the SEM, the following table indicates the timeline for the development of the detailed arrangements, rates and charges, and implementation. This programme is preliminary and may be later modified depending on the outcome of the assessment by the TSOs to be carried out during Q2 2009. The programme involves the publication by the TSOs of a consultation paper on AS in early Q2 2009. This will include proposed initial AS payments/charges, generator performance incentives and other items referred to in this paper. An RA decision paper is then expected in early Q3 2009 followed by implementation of the all-island arrangements on 1st October 2009.

Timeline	Activity / Milestone
Early Q2 2009	TSOs consult on initial AS payments/charges, generator performance incentive charges and other outstanding arrangements
Q2 2009	TSOs host workshops and otherwise consult with industry on consultation proposals
Early Q2 2009	TSOs to produce consultation paper on testing and commissioning charges
H1 2009	SEM Committee to approve the TSOs calculation and detailed implementation methodologies for reserve causation charge
End Q2 2009	TSOs commence testing of detailed harmonised AS arrangements systems.
Early Q3 2009	SEM Committee decides on initial harmonised AS payments/charges and other related arrangements.
1st Oct 2009	Go-live of harmonised AS arrangements