

**Power NI Energy Limited  
Power Procurement Business (PPB)**

**DS3 System Services  
Auction Design**

**Consultation Paper**

**Response by Power NI Energy (PPB)**

**15 February 2016**

## **Introduction**

Power NI Energy (PPB) welcomes the opportunity to respond to the consultation on the DS3 System Services consultation on the Auction Design.

PPB is the counter-party to Power Purchase Agreements that were established in 1992 as part of the restructuring and privatisation of the electricity supply industry in Northern Ireland. PPB purchases both the capacity of the contracted generating units and any electricity generated by those units on terms specified in the agreements. The generating units are extremely flexible and reliable and therefore with the changes in the generation mix and typology of the system these units will play a significant role in helping the System Operator manage the system. Flexibility is required to securely operate a system, which is being designed to accommodate ambitious renewable targets.

PPB fully supports the DS3 project and appreciates the volume of work that has been invested by RA's, the SEM Committee and the TSO's to develop suitable market arrangements to: enable the connection of renewables to the Electricity Network in Ireland and the changing generation mix on the island; to ensure flexible generation is adequately remunerated under the new I-SEM arrangements; and to comply with the new Network Codes. However this DS3 project has been running for over 4 years and is reaching a critical stage since if DS3 is not delivered in the very near future the 2020 renewable targets will not be met. PPB believe that it is of paramount importance to expedite the procurement of services as a matter of urgency and to achieve this the process must be simplified as much as possible and so procure the DS3 products at the earliest possible date. In Northern Ireland alone there are 1512MW of renewable generation in the pipeline and in order to facilitate these connections the DS3 products must be secured as soon as possible.

We are concerned that the delay in the DS3 process and the recent overlap with a number of complex I-SEM consultations (Market Power, CRM and on going intense Energy Market working groups) has constrained the scope of respondents to commit adequate resources across each of the consultation areas to the level they merit with the consequence that there is a danger that the consultation process is less informed than it would be if the appropriate time and resources were available. This risks undermining the overall veracity of the I-SEM and DS3 design and a more achievable project plan covering both I-SEM and DS3 is required to ensure meaningful engagement can occur.

The consultation paper and the DotEcon report raises many complex issues and Viridian Group procured an expert review of the papers and proposals from NERA Economic Consulting (NERA). We make reference to NERA's memo in this response and attach the NERA memo in support of this response.

## **Key Messages and general comments**

### ***Consistency with previous DS3 and I-SEM decisions***

The DotEcon report indicates that a number of the SEMC's previous decisions are unworkable and hence those decisions must be changed. We concur with DotEcon's conclusions in relation to previous DS3 design decisions but do not agree that the DotEcon proposals are a viable solution to the issues. Now that there is recognition that the previous design decisions were flawed, we believe that they should be revisited and decisions such as in relation to availability based payments should be revised to capability based payments since that will actually provide net payments to providers.

The other issue with the availability based approach is that it will result in an ancillary service constrained schedule. This is envisaged by DotEcon in their report yet the intent of the I-SEM HLD was for the energy markets to be unconstrained. This was confirmed in HLD consultation paper published in February 2014 which stated, "*For the purposes of the revised SEM HLD, co-optimisation of energy and reserves has been ruled out as a possible option...*"<sup>1</sup>

### ***DotEcon's proposed auction design***

The proposed auction design is exceedingly complex for both TSOs and bidders who will be required to operate the enduring solution to best meet the needs of the system and consumers. The NERA memo highlights that the proposed auction process design suffers from two primary problems:

- (i) it fails to ensure that providers have an incentive to deliver necessary system services when required; and
- (ii) as a result, the proposed auction will not award system service contracts efficiently.

NERA highlight the following issues:

- The derived prices may not incentivise delivery of a relevant service where payment is lower than the cost;
- Providers are required to bid a guaranteed price and volume for services whose costs and volumes are intrinsically uncertain and this risk will result in a distortion of the auction;
- DotEcon's contingent-commitment model does not provide any contribution above cost (at best) for generators who are constrained on to provide system services; and

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<sup>1</sup> SEM-14-008, Page 21 footnote 20

- The auction will not be able to satisfy the system's locational need for ancillary services without high levels of locational granularity but that degree of market segregation is likely to mean the auction cannot be competitive.

NERA's memo provides a detailed consideration of these issues. Our assessment is that the combination of these features reduces the likelihood of the auction delivering flexible and dependable services for the TSOs and the risks associated with volume uncertainty and contingent commitment obligations would have an uncertain and inefficient impact on pricing that will be to the detriment of consumers both in terms of pricing and in terms of creating a barrier to new investment.

The proposed auction design also limits winners to a single winning package. This could result in the exclusion of valuable services that are currently provided by flexible CCGTs that can also operate in Open Cycle mode. A package bid would likely cover all the services that could be provided when operating in combined cycle mode but that would then exclude alternative and mutually exclusive services such as fast ramping to provide replacement reserve, low minimum generation and 1 hour ramping product that can be made available in open cycle mode. These are hugely valuable to the system but would be lost because of the auction design.

### ***Discrimination against different categories of provider***

We disagree with the proposition that there should be segregation such that existing and potential new providers participate in separate auctions. This removes competition between new and existing providers and creates multiple prices for the same services. Such an outcome will distort the energy markets when, as would be expected, energy market bids are adjusted to take account of DS3 revenues. Bids would be impacted by different amounts for the same service which could distort the relativity of the merit order resulting in inefficient outcomes.

Similar to our response to the second CRM consultation, we also disagree with the proposals to discriminate against existing providers by only allowing them to secure 1 year contracts while others can access long term contracts. We consider this is discriminatory and also suffers from the problem of creating different prices for the same service.

A further issue is that some of the proposed arrangements appear to place less onerous obligations on providers who do not need to be synchronised to provide their services. There must be a level playing field for all possible providers.

### ***Ancillary service revenues are offset by lower Energy Market revenues***

Many of the DS3 products are dispatch dependent and the availability based payment arrangement will result in an impact on prices in the Energy Markets where bids are adjusted to reflect variable DS3 revenues. Our response to question 4

provides an example but the issue is that such a transfer of revenue out of the energy market into DS3 creates a circular loop with the effect of providing little or no new cash for the units providing these services. This problem is not resolved by changing the value of the product since any change will just be reflected in bids into the energy market with the potential of distorting the wider energy market and market coupling. In addition to these distortions, this arrangement provides nothing bankable to underpin investment in either new capacity or refurbishment of existing units.

### ***The proposals increase risk to providers***

A key concern with the proposals is that they seek to transfer all of the risk to providers who are not in a position to manage the risk. There are many examples including :

- Forecasting and exposure to availability;
- Arbitrary price derivation from an opaque linear programming tool that has never, as far as we are aware, been employed for services such as are required for DS3, that have non-negligible variable costs;
- Prices capped at regulated tariff rates;
- Revenue transfer between DS3 and energy markets with unquantified consequences;
- Scalars;
- TSO volume discretion;
- Bidding rules that could result in a loss or at best cost neutrality when providing valuable services to the TSOs; and
- Assertion that a minimum revenue guarantee is not needed.

In relation to just the first of these, the introduction of availability into the bids submitted by providers is of particular concern. In a hugely constrained market where generators have no sight of volumes of services provided by others, it is impossible to accurately forecast availability, particularly for marginal units. Generators have been modelling the existing market since 2007 and are still having considerable difficulty in forecasting their volumes. Similarly, and as detailed further in response to question 10, the TSOs who have full market visibility often produce wildly varying proposed dispatch schedules for the Ballylumford CCGT units only a matter of hours apart. The uncertainty of I-SEM only brings further risk and the only tool, albeit imperfect, for providers to manage these risks will be through the premiums that they apply in the auction. This will result in an inefficient outcome because of the inappropriate risk allocation and the uncertainties will also provide greater scope for the abuse of market power.

New investors will be unable to finance their developments if they are dependent on an uncertain forecast of availability, and particularly where that spans any significant period (e.g. if they were to be awarded a long term contract).

### ***Volume requirements are fluid***

There is a key missing point in the proposed design of the DS3 market which relates to the volumes of products the TSOs need to procure. Volumes, although they may vary slightly, will be needed continuously and cannot be calculated in advance or assumed from previous years' actuals. The volume of non-synchronous penetration and the interaction with the system is an ever moving target and is the reason why DS3 is required to give the TSOs the tools to cover transmission faults, the sudden rise or fall of wind output, Interconnector flows or other non-synchronous units on a continual basis. The DotEcon paper doesn't appear to recognise these characteristics in an electricity network which drive the TSO requirements to meet the operation of the electricity system in a safe and secure manner and to meet the challenges of a high level of SNSP.

Note also that the availability forecast brings uncertainty to the TSOs who will have no sight of the periods where a unit proposes to make its services available and so will have no idea if they have contracted suitable volumes. The fundamental purpose of DS3 is to provide products to help stabilise the electricity system and allow more renewable generation on to the system and availability for each service in every possible period in the year is important since the TSO needs to be able to call on generators to provide services at very short notice and not be obstructed by availability.

### ***How to proceed?***

We do not believe the proposed approach is viable. As discussed in this response, we have very serious concerns with the proposals, both in their inability to deliver DS3 services and investment in an efficient manner and on the potential distortions they may create in the energy markets.

As noted above, the DotEcon report states that the original DS3 decisions are not implementable and they propose changes to overcome the limitations they identify. We do not believe the DotEcon proposals provide a workable or efficient solution and hence we believe the way forward is to reconsider the DS3 decisions. A key element that is causing many of the problems is "availability" which is not forecastable for most/all providers and causes distortion in the energy markets. We suggest that the best approach that provides a higher level of revenue security and over which providers have control is to revert to capability based payments.

Further, the DotEcon report states on page 19 that a tariff is the way forward if there is no competition. Since it has been determined that there is currently not enough of

any DS3 product to meet the 2020 renewable targets, it seems bizarre that so much energy is being expended in auction design when there is little competition which, as DotEcon states, is best resolved by implementing tariffs. Such tariffs are proposed for the first year in any event. It would seem more appropriate to retain tariffs for at least an extended transitional period that will enable proper consideration of how a competitive process could be developed and also enable participants to gain experience of the operation and pricing in the I-SEM. This approach would also reduce risk in the CRM which would therefore be expected to be more competitive, producing an outcome that better delivers for customers.

## **Responses to specific questions**

### ***High level Auction Design questions***

***Q1: What are your views on the proposals to try to ensure a level of consistency between CRM and DS3 System processes?***

PPB agrees there should be as much commonality and consistency as possible in the CRM and DS3 processes. It is important to minimise participants' costs such that they are not investing time and money in duplicate processes. Examples of areas where there should be consistency are prequalification, bonds and auction platforms.

It is important that the DS3 process is not overcomplicated in comparison to the CRM process. The aggregate DS3 market payments are likely to be significantly lower than payments under the CRM and therefore do not warrant excessive complexity for participants and users or the required service volumes will not be delivered.

We do not agree with discrimination against existing providers through the proposals to restrict them to one year contracts. If longer term contracts are to be offered then they should be available to anyone with the capability of providing them.

We also disagree with the proposal to hold separate short-term and long-term auctions. We comment on the problem with such an approach below in response to question 5 but such an approach is also in conflict with the proposals for the CRM which envisage a single auction for all potential providers for a year that produces a single clearing price. If auction processes are to be employed at any stage then there should be as much alignment as possible.

***Q2: Do you consider that the SEM Committee should consider facilitating a link (where participants require) to only proceed with participation in the DS3 System Services auction subject to a successful outcome in the***

***CRM auction or (vice versa) i.e. create interdependency that as much as possible mitigates the need for auction re-runs.***

PPB agrees that a link is a good option so long as it is not mandatory and is open to all participants. However we do not believe it would be advisable to combine the auctions, for largely the same reasons we do not believe combinatorial are suitable for the procurement of DS3 products.

As noted elsewhere in this response, we believe tariffs should be employed for the remuneration of DS3, at least initially and do not consider DS3 auctions are currently viable. However if/when auctions are held we consider that the DS3 auctions should be held first, closely followed by the CRM auctions, with an option for the winner of DS3 contracts to relinquish the contract(s) should they be unsuccessful in the CRM auction. This approach would enable providers to refine their CRM bidding strategy to reflect the DS3 outcomes. There is a risk that some of the volumes of DS3 products could be relinquished following the CRM auction but that is likely to be of lower risk and cost to consumers. The dropping out of provisionally contracted volumes would create a need to revisit the DS3 procurement process and the DS3 auction clearing process would need to rerun with the criteria of keeping all already contracted products as well as procuring the volume required to replace that which has dropped out. This may result in a slightly higher clearing price but depending on the product may have little impact on consumer costs (e.g. if the payment is reflected in energy market bid prices, such as for inertia or reserve).

***Q3: What are your views on managing the interactions between the CRM and DS3 System Services auctions?***

See answer to Question 2.

PPB believe the best way forward, given the interactions and revenue uncertainties due to I-SEM, is to defer auctions for DS3 products and to continue with tariffs until the CRM auction process and I-SEM changes have bedded in and there is some track record. Pricing will be very difficult with all the new markets and there will be very uncertain forecasting capability given there will be nothing to calibrate models against. As a consequence we consider it would be best to keep the DS3 revenue stream stable during this transition. There are significant doubts over the initial competitiveness of an auction process and there would be significant market power issues that would need to be addressed. Hence a transitional approach that retains tariffs would reduce the burden on market participants already stretched resources and there is already work on-going to develop tariffs.

***Q4: Do you agree with the proposals for separate DS3 System Services long-term and short-term auctions as set out in the DotEcon recommendation?***



We strongly disagree with the DotEcon recommendation that separate auctions are held for new and existing plant. Any such separation opens up a whole new area of debate and scope for dispute in relation to how volumes get allocated between short and long terms auctions if the auctions are separated. This creates a number of problems, the most significant being that it would require each DS3 product volume requirement to be split between the two auctions. This risks excluding the most economic solutions should there be potential providers in either auction who are not awarded a contract but who can provide the service at a cheaper price than providers who are successful in the other auction. It also raises discrimination issues should the mix of products be different. For example if the TSOs decided to only require a few products in the long-term auction, that would appear to mean a potential new entrant who could provide other DS3 products would not be able to secure a contract for those products. Such an approach would likely frustrate new investment.

We consider this would also be susceptible to legal challenge as providers could be uneconomically excluded securing DS3 contracts due to the TSOs auction volume allocation decisions. This would also be a major concern where there is conflict of interest for the TSOs given their ownership of interconnection and where the DS3 services include those that interconnectors are capable of providing.

The second major problem is that separation would result in different prices for the same product in any given year since the clearing prices would inevitably be different which means that the TSOs would be paying different rates for the same service in each settlement period during that year. PPB do not consider this is a viable approach as all providers should be paid the same price otherwise it is discriminatory and will also result in distortions in the wider I-SEM energy and capacity markets.

It is important that no one is discriminated against in the provision of DS3 products. Existing generators who have provided consistent services over a number of years should not be excluded from a contract because a new provider has come along and secured a long term contract unless the new provider is cheaper. It should always be the cheapest option that wins the contract and all providers should compete on a level playing field. To maximise competition all providers would need to be bidding for contracts to be provided in year  $t+4$  since otherwise the new providers would be able to set whatever price they like. To do otherwise leads to a situation where no competition is ever likely and so tariffs are the only solution.

Payment for DS3 products is based on “availability” and hence for many of the products this requires synchronisation and payments that vary based on the level of generator output. This payment structure means there will be considerable interaction with the energy market but in such a manner that there will be little extra money for DS3 providers. For example, if two generators have marginal costs that are only slightly different, say €50/MWh and €51/MWh, and both can provide a DS3

service (e.g. FFSR) that pays the equivalent of €5/MWh, the expectation would be that both generators reflect the DS3 payment in their energy bid such that they bid €45/MWh and €46/MWh into the energy markets since by doing so they would always be scheduled when the aggregate marginal revenues exceed their costs. Given most of the marginal generators in the I-SEM are likely to be CCGTs with broadly similar generation costs, this will mean the revenues from DS3 largely just offset lower energy market revenues and provide no additional revenues.

The reflection of the “availability” based payment structure into the energy market, as anticipated and under a commitment model envisaged by DotEcon, also means that in effect the energy market is being designed to schedule on the basis of a DS3 constrained market (i.e. only ignoring network constraints) which is in contradiction to the I-SEM HLD which indicated that EMs should remain as unconstrained as possible. This problem arises because the proposed DS3 payments are based on real-time availability rather than capability.

***Q5: Do you think the treatment of long-term contracting for System Services should be aligned with the proposed framework in the CRM?***

As already highlighted, we believe it would be discriminatory to restrict existing providers to annual contracts while offering longer term contracts to others.

Notwithstanding this view, where an auction process is viable, then all providers must compete for delivery of DS3 services in the same auction to get a single clearing price for each service. This provides for appropriate entry/exit signals since if this meant some existing providers lost out because of some step change in technology, then that provides the correct exit signal. Holding separate auctions for years t+1 for existing and t+4 for new means the TSOs are effectively determining entry and exit through their volume allocation.

### ***Volume Consideration questions***

***Q6: What are your views on the proposals to calculate clearing volumes for the auction as set out by DotEcon?***

This is of huge importance in the design of the DS3 market. The volumes will be needed continuously every day, and for many of the services, the volume will be required from a wide number of permutations of possible providers but where the real time selection will be heavily dependent on the circumstances prevailing at the time. Hence there is no single volume X that is needed for each of the services but a requirement that X can be relied upon from those units that are available or synchronised at any point in time and this cannot be calculated in advance or

assumed from previous years actuals. The volume of non-synchronous penetration and the interaction with the system is an ever moving target and is the reason why DS3 is required to give the TSO's the tools to cover transmission faults, the sudden rise or fall of wind or Interconnector output or other non-synchronous units on a continual real time basis.

The DotEcon paper demonstrates little understanding of the TSOs' requirements to meet the safe, secure and reliable operation of the electricity system with high levels of SNSP. As noted, the TSOs will need service provision to enable them to cover all possible circumstances and combinations and permutations. The introduction of availability into the bids will make the securing of the correct volumes for the TSO even more difficult given the provider will for many of the services, not be required to provide the service continuously throughout the year but only on a subset of hours. It will be impossible for the TSO to know what hours these are likely to be and limiting the provision will make the TSOs' job of securely operating the system virtually impossible, which is a contradiction to the primary objective of the DS3 project. For example, the TSOs will require products to be available to prevent system collapse in the event of a sudden loss in wind and having the products available at say 50% in line with some forecast but not available during the right 50% of the year but which is only evident in real time provides inappropriate tools for the TSOs.

It is also indicated that the TSO can be flexible in the volumes procured, this flexibility needs to be limited as the TSO's should not be able to jeopardise system security on a cost basis. We have concerns such flexibility adds further risk to the procurement process and consider there should at least be a minimum volume requirement.

***Q7: Do you agree with the proposals for introducing granularity for the purposes of calculating auction clearing volumes?***

The electricity system does require different levels of each product depending on many different criteria, e.g. a sudden loss in wind, the tripping of a synchronous generator or a fault on the transmission system. The magnitude of this change is the volume required and has the single largest impact in system security; currently loss of the largest infeed is the criteria to be covered but due to the increase in wind this will need to be the main driver in volume selection. The volume is also strongly dependant on the demand and so will change throughout the day and the year. Demand dependant weighting factors could be published to control the volumes required to account for any changes in required volumes.

We do not believe seeking to introduce seasonal products will assist with either the TSOs' operation of the system given there may be little difference in the required volume for many of the services. For most of the products, we also consider it would

do little to incentivise new investment since if there is capital expenditure, it would be more difficult to justify where remuneration is limited to a narrower window.

The DotEcon paper also fails to recognise that the TSOs will have an ongoing locational requirement for many DS3 services. For example, voltage support is a local requirement across Ireland and N. Ireland. We therefore agree that ignoring locational constraints would have undesirable consequences and must be addressed as part of the final DS3 arrangements. We would however have concerns at differential pricing as this could have wider unintended consequences for the energy markets and requires careful consideration.

We also have concerns with applying a technological granularity to the products. It is difficult to see how the volumes could be set objectively and we consider a level playing field to be the best approach rather than partitioning the service provision on any technological basis.

***Q8: What are your views on the proposal to introduce flexibility on the volumes to be procured?***

We would be concerned if flexibility was introduced into the procurement process. It would seem strange that having identified the volume requirement for the TSO to then decide not to procure that volume as it would raise concern over the overall veracity of the volume determination in the first place. We can see there may be a requirement for a small degree of tolerance around the volume as it may be difficult to secure the exact volume from the offered put forward by providers. However, this should require the outcome to be within a narrow tolerance band without TSO discretion.

There should be no scope to increase the volume given this may impact on volume scalars and payments which would undermine the pricing and create risk for providers. This volume specification and procurement process must be totally transparent and must also address Eirgrid's conflict of interest given their ownership of EWIC.

***Bidding Parameters questions***

***Q9: What are your views on the proposals for package based bidding?***

While bundling of products into a package might initially appear to be a practical approach, we don't believe it is viable for DS3 services where the payments structure is variable with no overall payment commitment. This is very different to the telecoms industry where such combinatorial auctions have been employed but where the costs are largely fixed DS3 products are very different and it is likely that

most providers will be capable of providing most of the services. In such circumstances it will be very difficult to get price discovery and it will be difficult to correctly determine individual clearing prices for each of the products to ensure that service providers are incentivised to actually provide the product. For example if the payment determined for a product is lower than a provider's cost such that to provide the product would result in a loss for the provider. NERA's note provides more detailed consideration and assessment on these issues.

Price discovery was a key driver for seeking to adopt auctions over tariffs and this product bundling removes such transparency. The other important driver for an auction was to ensure products for which providers are scarce are rewarded in such a manner that investors or existing generators invest in the areas where the system requires additional products e.g. Inertia has the highest payment to encourage more of it onto the system.

The proposed process is such that only one bid can be accepted from any provider. This will require providers to include all of the products they can provide as one bundle. Where there is a deficit of some services, this is likely to result in most of these bundles being required to meet the necessary volumes even if that results in a surplus for some products. Even if the pricing were somehow determined accurately, this then raises the question of how scalars may apply and what that would do to incentives if it is reduced the payment below cost. This would undermine any investment incentive. A further problem with the single winning package per provider approach is that it will eliminate some of the flexibility that already exists e.g. CCGT units that can operate in both open and combined cycle modes provide different quantities of DS3 products depending in which mode the TSOs decide they require, e.g. a unit which is off load can provide a much higher level of output in 1 hour when dispatched in open cycle mode than a unit dispatched in combined cycle. This is contradictory to the objectives of the DS3 program.

***Q10: Do you consider that a provider will be able to predict its expected availability accurately on an annual basis?***

We consider it will be virtually impossible to accurately predict availability on an annual basis. Even if it were possible to make an accurate forecast of the annual availability, such availability may not align with the actual real time requirement of the TSOs and hence may be of limited value to the TSOs. A further issue is that if long term contracts were to be offered, the bidder would need to assess their availability for the duration of the contract which would be even more impossible and fraught with risk.

This forecasting difficulty can easily be demonstrated from the TSOs' current provision of indicative running to generating units in the SEM which the TSOs update

throughout the day. With all the information (more extensive that would be available to any participant), systems and forecast tools available to the TSOs these indicative running notices often vary wildly even when they are forecast only a few hours apart. This highlights the impossibility of predicting availability to any granularity, and particularly so when it is so dependent on how the TSOs decide to operate the system. Even annual load factors are difficult to predict for the year ahead and can fluctuate wildly, never mind forecasting what they might be in 4-5 years time, which will also be subject to global factors such as commodity prices and well as political and regulatory risk from changes in energy policy (e.g. changes to support schemes for renewables)! Market participants have less information than the TSOs upon which to base their forecasts with ever changing system constraints and no knowledge of the volumes contracted by other providers which makes forecasting even more difficult for providers. This difficulty will be amplified for a new developer who has no experience in the SEM and where there is no track record for the operation of the I-SEM.

***Q11: Do you agree with DotEcon's proposals in relation to quantity units for the services outlined above?***

The quantity units would be best defined by the TSO however we note the quantity unit suggested for ramping products is MW, ramping is normally measured in MW/min and there will not be a single value. The value will be different dependant on the heat state of the unit e.g. the unit will ramp at a different rate across the load range; therefore the starting point must also be specified for consistency and comparison of providers.

***Q12: What are your views on a suggested cap or clawback on expected availability per plant to manage DS3 System Service expenditure?***

As already explained in response to question 10, availability forecasting is very difficult and likely to be highly inaccurate. The actual utilisation of services from any provider may be much higher than they anticipated for many reasons outside of their control, e.g. other provider breakdown, increased exports, etc. but the provider should not be penalised for providing the services the TSOs require which we must assume would be scheduled from that provider because that is the least cost solution for the TSOs. It would be perverse to penalise the provider for delivering the service and indeed, it would create a disincentive to the provider making the service available which would likely result in higher costs for consumers (on the assumption that they would otherwise have been the most economic solution selected by the TSOs).

It is also likely that increased utilisation of a DS3 product such as the reserve products from one provider will be offset by a reduction in utilisation from another

provider. For example, if gas fired generation became cheaper than coal, then the merit order would flip with gas fired plant possibly displacing coal with the result that more inertia is likely to be supplied by the gas units which are being dispatched more often. The coal units may be dispatched down from full load and so provide more reserve.

While the whole reason for this consultation is to discuss remuneration of DS3 products there is a fundamental flaw in the thinking – these products are essential for the safe and secure operation of the electricity system in Ireland and in providing new technologies opportunities to enter the market. If a DS3 product has provided all its availability in the early part of the year due to the nature of the weather or other outages on the system the TSO do not want it to no longer be able to provide its service and if there was no remuneration for provision that would be exactly be what would happen. This would also be in conflict with the Grid Code which would require the unit to provide its technical capability. As a consequence the incentive will either be for the provider to withdraw the service which may create Grid Code difficulties or to factor in the additional cost to the INC and DEC prices to commercially prevent a loss in revenue as the contract to the TSO will no longer be valid since it has reached its offered availability. This risks unintended consequences that could distort the market, increase costs for customers and will not incentivise new development and the provision of the maximum flexibility to the TSOs. The provision of DS3 services must be incentivised and not made difficult, unpredictable, complicated and unattractive if the 2020 renewables target is to be accommodated.

Further, with most products in the DS3 market that rely on being dispatched, there will tend to be an equal and opposite impact on a provider's energy market bids and hence the impact on customers overall costs is much less clear.

### ***Auction Pricing questions***

***Q13: Do you consider the DotEcon Report to have accurately captured the considerations for availability the TSO should use for different DS3 System Service products? If not, please explain your reasons why.***

Our views on availability have already been stated in response to question 10 above. We do not agree that availability should be included in the auction; the unit should be paid regardless of its forecasted availability given the TSOs are benefiting from the provision of the service. The only purpose of providing this availability is to create a cap on the TSOs' payments, which is promoted as providing the benefit of certainty for providers whereas it is in fact the opposite. This is no benefit to the provider who should be paid whenever he is providing a service regardless. A unit may go out unexpectedly and the services of another provider will be called upon but because

their proposed availability is used up it will not gain any additional benefit by helping out the system. This is the totally wrong driver for the provision of DS3 services.

The purpose of DS3 is availability of services to the TSO whenever they require to call upon them not for selected periods each year. This is additional unnecessary complexity that is counter-productive to the DS3 objective and will disincentivise new development.

***Q14: Do you agree with the proposals to ensure lower payments are received by System Service providers who are not successful in the DS3 auctions but who are dispatched by the TSO to provide System services, than those providers who are successful in the Auctions?***

We strongly disagree with the proposal to make lower payments to providers who do not hold a contract. Indeed there are good arguments that they should be paid a higher amount since firstly if they were unsuccessful in the auction they must have had a higher cost and secondly, if they are required by the TSOs there is an argument they should benefit from a scarcity premium since their services may be preventing the system from collapse. Providers may be unsuccessful because they have a unique combination of services which have been expensive to provide but will at some point be called upon unless the TSO contracts volumes considerably in excess of its requirements.

We also have major concerns over how creating different prices for the same services may distort both the TSOs' decision making (for example would they seek to use losers services because they are lower cost?) and also distort the efficient functioning of the energy markets when DS3 prices are netted off EM bids.

The use of ancillary services by the TSOs must be very transparent. The TSOs must be required to report the volume of each product that is required for each half hour and if this has been met from contracted service providers. On an occasion where there is a shortfall due to unusual system conditions or outages and an un-contracted unit is being relied on because it must still provide services in accordance with its Grid Code obligations, it must be remunerated.

For example, if the system requires 100MW of POR for a particular period and there is a shortfall of 20MW, and this shortfall is covered by a unit on the system which does not hold a contract and which is dispatched 20MW below its maximum generation, will this unit automatically get paid for the services it had available at that load level or if not, then how will this unit know that its POR is being relied on in this half hour? A TSO can easily say it wasn't being counted in POR provision after the event and so escape paying for the service? This whole area of transparency and auditability is hugely important and is going to be very difficult to manage with



confidentiality of contracts and the quantity of information required. Again this leads us to believe tariffs are the only way these services can be remunerated fairly.

***Q15: Do you agree with the proposals for determining the winner/price as set out in the DotEcon recommendation?***

We have major reservations with the proposals. The approach may work for auctions in the telecoms sector where the costs are largely fixed and hence there is no reliance on variable utilisation for payment. However, the DS3 products are very different and individual price determination is vital if each individual service is to be delivered.

A key concern is that the algorithm approach is opaque and the determination of prices for each service could result in very perverse outcomes. For example, if all generators bid a bundled product for 14 services the price of each product would be the same. Assuming all providers will submit different combinations of products the calculation of price may not reflect, for example, the value of SIR and so not incentivise the correct products.

An example is set out in Table 1 of Section 3.1.2 of NERA's memo to illustrate that the process could result in unhappy winners for certain products because of the way the algorithm determines prices. NERA highlight that this is a major issue with the proposals creating incentive incompatibility.

Ireland is a very small electricity system with unprecedented levels of intermittent wind generation and we consider it is highly risky to consider adopting a complex auction design that is unproven in the electricity industry generally never mind in a small island system with only DC interconnection. This is particularly a concern in relation to services that depend on so many outside factors including how the TSOs go about their operation of the system. We would expect to see some evidence of how this auction clearing process has been applied and worked in other energy markets to help identify its feasibility or how it would need to be developed to meet the unique requirements in the I-SEM.

We do not agree that the price in an auction cannot exceed the regulated tariffs. This assumes the tariff price is right which is somewhat presumptuous given the difference in rates proposed by the TSOs<sup>2</sup> relative to the levels of payment in Great Britain where there is much more certainty in the energy market and much less wind on the system. The whole purpose of an auction is to have a competitive market based approach but this is totally undermined by interventions such as price caps (tariffs) that are set by the RAs as well as scalars to cap payments. If there is

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<sup>2</sup> [http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjW5-Khr\\_nKAhVJ8RQKHWI-AcQFggjMAA&url=http%3A%2F%2Fwww.allislandproject.org%2FGetAttachment.aspx%3Fid%3D7ffb71d3-4b67-4a8d-9953-1c4761b0b3af&usg=AFQjCNFV8fYsqkQ0IKXPyl4h66v8OLq-gw&bvm=bv.114195076,d.bGs](http://www.google.co.uk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0ahUKEwjW5-Khr_nKAhVJ8RQKHWI-AcQFggjMAA&url=http%3A%2F%2Fwww.allislandproject.org%2FGetAttachment.aspx%3Fid%3D7ffb71d3-4b67-4a8d-9953-1c4761b0b3af&usg=AFQjCNFV8fYsqkQ0IKXPyl4h66v8OLq-gw&bvm=bv.114195076,d.bGs)

insufficient investment on the basis of a tariff, it is difficult to see how an auction process that sets this tariff price as the maximum will incentivise new investment.

It is not clear from this paper how long term bidders will compete with short term bidders. If existing providers can only bid for one year products then new entrants wishing to have long term contracts may have little competition. This seems counter-intuitive to the concept that auctions would be employed when there is competition yet the proposal to split the market may mean the only competition is between existing providers in the short-term auction and potential new providers in the longer-term auction, but with no competition between the short and long term auctions.

This also creates the scope for multiple prices for the same product derived from the clearing prices in the short-term and long-term auctions plus the possibility of different prices again for providers who previously secured long term contracts. Hence, for example by the time of the fifth long term auction, there could be six different prices for each DS3 product. We don't believe this is a sustainable or transparent approach and is likely to have a significant distortionary impact on the wider energy markets, creating inefficiencies.

***Q16: Do you agree with the proposed treatment of interconnectors? Should this apply equally to all interconnectors?***

The DotEcon report indicates that Interconnectors are “*fundamentally different*” and that “*It appears unlikely that an interconnector would easily be able to influence its availability and therefore its availability for system services*”. Further DotEcon state “*If it were infeasible for an interconnector to be subject to the same contractual obligations as other providers then it would not be sensible to allow interconnectors to participate in SS auction as they would be bidding for a contract under different terms to other providers*”. Based on these facts, it is apparent that Interconnectors should not be eligible for any payments as they cannot guarantee any service level and neither can they offer INCs or DECAs to enable the TSOs to avail of services.

Interconnectors should not receive any preferential treatment and if other providers are required to back up an availability commitment under any mechanism then Interconnectors must have the same obligation since otherwise they would be receiving the same payment terms for a less onerous obligation.

At the Industry Forum on 1 February 2016 it was mentioned that there may be additional services outside the DS3 market, the example given was FFR, where a unit may be able to provide a quicker response. Firstly it seems strange to devise a comprehensive range of DS3 products that are to be procured under the DS3 arrangements and to then identify further products that will be procured under some side arrangement. All services that are required should be procured through the same mechanism and nothing should be procured without full market transparency.

This is particularly the case given concerns over the TSOs conflict of interest in relation to EWIC. This also raises wider market power concerns that would need careful consideration.

### ***Auction Commitment Requirements questions***

#### ***Q17: Do you agree with DotEcon's proposed preferred model of Contingent Commitment in DS3 System service Auction procurement?***

We do not agree with DotEcon's proposed contingent commitment model. There is a case for some form of commitment although this also needs to reflect that there are already Grid Code obligations and Generator Performance Incentives. However, any commitment obligation must not be too onerous such that the revenue stream for DS3 will not be attractive enough to warrant provision of the services which will have wider market implications.

In relation to DotEcon's proposals, we don't agree that the incentive should be for providers to position themselves such that they can provide the DS3 services they are capable of. A key element of this is the volumes the TSOs procure of each service and the levels of redundancy the TSOs need to ensure they have access to the services in all circumstances. Hence if, for example, the TSOs secured 600MW of POR across a range of providers, they do not need those 600MW continually and at times they may only require 200MW. If all the providers sought to position themselves to provide the 600MW of POR then the market would be operating very inefficiently and the TSOs would likely have to dispatch a number of the units off because the volume was not required or the minimise curtailment of priority dispatch units. We believe the most efficient outcome will be for the energy markets to seek to solve efficiently in the first instance and then the TSOs can position the most expensive units in the Balancing Market to provide the system services they require to meet the actual system requirements at that time rather than incentivising providers to provide services that are not actually needed. This problem is compounded by the fact payment is based on availability and not capability.

A further major concern is the proposition that holders of DS3 contracts are obligated to participate in the Balancing market on a different basis. The current BM proposals already provide for two different forms of BM bids – 3 part bids and INCs/DECs and the DotEcon proposals imply a different arrangement again. This implies that a participant who has perhaps some DS3 products may have some aspects of their BM bidding governed by the BM rules and some by their DS3 contract. This will impact on pricing in the BM and will make it less transparent and have an unknown impact on the DAM and IDM markets. There must also be an impact on the RO CfDs as a consequence, e.g if the provider has an RO with an obligation to pay out the

difference between perhaps VOLL and the RO strike price, they are unlikely to position themselves to provide DS3 products leaving a massive exposure under their RO. There is a high degree of inter-relationships across the Energy Markets, CRM and DS3 and there must be alignment across the markets to ensure there are no unintended consequences. We consider the contingent commitment proposal has a strong potential to create a high level of disturbance to the wider market arrangements.

***Q18: Do you agree with the position proposed by DotEcon that successful winners in the DS3 Auction should bid in the BM only at DEC prices set to a proxy of the energy price (section 7.2 above)?***

As explained above in answer to question 17 we do not believe providers of AS should be constrained to operate at certain prices and the proposition that the price should reflect the “energy price” (which is undefined – we assume this the DAM price, IDM prices or some weighted blend) rather than its cost means that the provider does not retain any inframarginal rent. The logical extension of this is that the provider would need to incorporate this opportunity cost in their auction bids but that then creates a massive risk for the participant, particularly in relation to availability. For example if they assumed their availability was going to be X% and that they would be able to earn market revenues outside of this but the TSOs actually required the service on a much more frequent basis and dispatched the unit down on the basis of the imposed DEC prices, the provider could be being asked to forego significant profit (or incur significant penalties if there were RO payments required). This is not workable and will result in an inefficient outcome for customers, increases the scope for market power and we believe the risk would destroy any investment incentive.

This concept of imposing a different pricing structure on contracted units adds a further set of bids into the BM, increasing operational complexity. If this is the option selected by the RAs then there must be a facility in the BM for different INC/DEC prices for AS provision that are different to the INCs and DECs used for Energy Balancing. It is essential that these imposed INC/DEC prices for AS purposes are prices that are ignored in the BM (i.e. Tagged and Flagged out) to ensure they don't distort the BM price. This also applies where a unit is re-dispatched because of a transmission constraint or for any other non system service reason.

The DotEcon paper also itself highlights in the first paragraph of page 60 that “*requiring INC bids at the energy price could be a very onerous requirement – even more so if the price of a service such as SIR is substantially lower than the price of reserve services. Therefore, an alternative approach such as the cost reflective requirement seems preferable*”. This implies the proposals require different INC/DEC offers for different system services (as confirmed in the second paragraph on page

52). This would be unmanageable operationally and would create major distortions in the energy markets while also further reducing transparency.

***Q19: Do you agree with the position proposed by DotEcon that successful winners in the DS3 Auction should bid in the BM only at INC prices set to a proxy of the energy price, or on a costs minus System Services income basis (section 7.2 above)?***

We do not agree with the proposal for reasons already set out in our responses to questions 17 and 18.

The best position for a provider under the proposals is that they cover their costs as described in Box 3 of the DotEcon paper while under the alternative of bidding in at Energy prices would result in a loss for the provider. This is an unmanageable risk for providers and their primary risk mitigation option would be to add a significant premium to their bid. However even that is impossible to forecast as the potential loss is dependent on so many factors e.g. how often it occurs, what the energy prices are relative to costs, etc. This will, at best, result in an inefficient outcome for customers and will likely be a barrier to investment.

The provision of DS3 services, as already mentioned, is vital to the stability of the electricity system with the increased levels on non-synchronous penetration; these services must be rewarded if there is to be any new investment. This is the general problem with the whole DS3 approach which treats the costs as variable and hence the money is primarily a transfer of value between the Energy Market and the DS3 market with little or no actual additional contribution to fixed costs. This is a fundamental flaw with the availability based payments approach.

***Q20: Do you support the application of an alternative contingent commitment model that avoids direct commercial interaction and obligation within the Balancing Market (section 7.3 above)?***

PPB agrees that any approach that requires DS3 providers to position themselves to provide services regardless of whether they are needed is inefficient and that the participation of contracted DS3 providers in the balancing market should not be distorted by the imposition of different bidding rules to what is generally required. However we do not agree that availability is an appropriate element of any contractual obligation.

As we have already emphasised in our response to question 10, it will be impossible for potential conventional providers to forecast the availability of their wide range of services. For conventional generators, this will depend on their market scheduling and dispatch which will vary for numerous reasons, many of which change at short notice, e.g. wind generation or interconnector flows. In a hugely constrained market

where generators have no sight of volumes of services provided by others, it is impossible to accurately forecast availability, particularly for marginal units. Generators have been modelling the existing market since 2007 and are still having considerable difficulty in forecasting their volumes. The Ballylumford CCGTs are marginal units and as we have already identified, the TSOs' indicative running forecasts can fluctuate wildly over the course of just a few hours and they have the advantage of full market visibility and more sophisticated forecasting tools. Hence availability will be impossible for providers to forecast years ahead and even more difficult should long term contracts be awarded. The uncertainty of I-SEM brings further risk and so the inflation of bid prices will be certain as the only tool available to manage the risks.

New generators will be unable to finance their developments if they are linked to an uncertain forecast of availability. The availability forecast also brings uncertainty to the TSO who will have no sight of the periods where a unit proposes to make its services available and so will have no idea if they have contracted suitable volumes. The fundamental purpose of DS3 is to provide products to help stabilise the electricity system and allow more renewable generation on to the system and therefore availability of each service in every possible period in the year is important; the TSO needs to be able to call on generators to provide services at very short notice and not be obstructed by availability restrictions.

This is an issue under the alternative contingent model since if a provider has already delivered its "contracted availability" before the end of a review period may not be incentivised to provide any more in that period. Alternatively if a provider is short on its "contracted availability" as it approaches the end of the review period, the proposals would incentivise the provider to force itself into the market to capture the "availability" regardless of whether the TSO actually required it or what distortions it makes to the wider efficient operation of the energy markets. We do not believe this to be an efficient or sustainable approach.

This option is also open to market power exploitation due to the fact that providers will be incentivised to be in the schedule to cover their availability obligation even though their market position would normally indicate they should be off.

The clawback concept might be applicable if payments were for capability and it transpired that when you were called on you couldn't deliver. In the proposed regime, you don't get any money unless you deliver and hence if you fail to deliver, there are no payments and hence there is nothing to clawback. This would be the case for most conventional providers although the verification of "availability" for newer technologies that do not require to be in the schedule to provide a service may need some thought as to how to confirm the "availability" since it would only be confirmed if called upon, and again there may be a need for strict periodic testing

requirements and/or clawback if they do fail to perform when called upon. This would also need to be considered in parallel with GPs if they are to remain under DS3.

***Q21: Do you agree with the proposed treatment of plant that does not require it to be in the schedule or on for provision of System Services?***

It is not clear how other technologies will be treated in Alternative Contingent Commitment Model however we reiterate that all providers must be treated equally. There should be no less onerous obligations on technologies that do not require to be in the schedule to provide services and as noted in response to question 20, a transparent and auditable approach will need to be identified to enable confirmation of the “availability” of such services.

***Q22: Do you believe that either the Full Commitment model or the No Commitment model offers a better option for DS3 System Service providers? Please explain your reasons for your view.***

PPB do not agree that full commitment can deliver the required services as it would be inefficient and cause problems for wind curtailment as successful providers would be obliged to deliver their services even when not needed. This is particularly a problem when the volume must exceed the maximum individual requirement to allow for outages, constraints, etc. For example if the maximum infeed was 500MW and at a 75% POR requirement, that means a max POR of 375MW but to cover different dispatch scenarios, 1000MW of POR is secured in an auction. A full commitment would mean all the units must position themselves to provide all the 1000MW even though it is not needed. This will have every unit on the island on at part load which will result in huge wind curtailment or require the TSOs’ to constrain units off again.

The no commitment model better reflects the reality. The TSOs can’t define exactly where and when they need services and hence as the TSOs can’t commit and need flexibility.

The concern expressed by DotEcon with the no commitment model (and no benefit of winning) is a consequence of the design flaw where payments are availability based. Capability based payments with penalties for non-delivery would ensure no market interference/distortion with incentives to deliver whenever the TSO require services, giving them full access to services with the maximum flexibility. The concern for providers is then whether an auction results in depressed prices that will not provide any incentive for new entry although any such lower revenue expectations would be expected to be reflected in “missing money” in the CRM arrangements. As noted by DotEcon, tariffs work well with a no commitment model and we consider capability based payments based on tariffs would be the best solution, certainly in the transition until there is an understanding of the new I-SEM market dynamics and that investment required to support renewables is deliverable.