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Dear Mark and Raymond,

## **METHODOLOGY OPTIONS TO BE CONSIDERED FOR THE IMPLEMENTATION OF LOCATIONAL SIGNALS ON THE ISLAND OF IRELAND**

Viridian Power & Energy (VP&E) welcomes the review of locational signals on the island of Ireland and appreciates this opportunity to comment. The system operators have carried out some useful research identifying international experience and we appreciated the open unprejudiced debate on these at the workshop held in Dundalk on 16 June 2009.

Throughout the review process VP&E and numerous other market participants have consistently raised serious concerns over the volatile and indeterminate nature of transmission use of system charges and particularly transmission losses<sup>1</sup>. The methodology currently employed is fraught with difficulties and lacks sufficient transparency to enable replication by market participants. As a locational signal the current methodology fails despite and partially because of its complexity and sophistication which only offers uncertainty and raises the cost of capital for all projects regardless of location. It is hence inefficient and inequitable to the detriment of investors and consumers on the island of Ireland. If the current review fails to address these and other fundamental shortcomings it will not have served its purpose. Clear terms of reference along these lines would have been useful at the outset of the current consultation paper as a guiding principle for choosing among alternative options. In our view the methodology used to choose preferred options, by choice and application of objectives to be fulfilled, may not come up with the right solutions. We elaborate further on this later in our response, which will help explain the rationale for our preferred options set out below.

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<sup>1</sup> This sentiment for example comes across strongly in the results of the market participant questionnaire of March 2009.

Our view of the most efficient and fairest process for locational signals is as follows:

## 1. Losses

In our view the inaccuracy of loss forecasting, the large and volatile changes in load flows expected with increasing windfarm penetration, and increasing interconnection with Great Britain, outweigh any arguments about the dispatch efficiency of locational losses based on TSO forecasts. VP&E consider that postalised losses for generators, at least on a jurisdictional basis, will reduce investment risk and the inefficiencies of the current methodology<sup>2</sup>.

## 2. Transmission Use of System (TUoS)

VP&E can see merit in a locational TUoS where generators are given a clear signal to build new generation capacity in an area that minimises the cost of additional deep transmission costs to be recovered from the consumer. VP&E regard this signal as only relevant to new entrant generators who have not yet made locational decisions. VP&E consider that the High Level Design requirement to use locational TUoS as a proxy for deep costs should be adhered to. We suggest annuitising a new entrant generator's deep costs into an annual component of the yearly TUoS (perhaps with some percentage of the deep costs socialised). This would provide a clear upfront signal to locate in areas requiring lower deep costs. If this signal was combined with a fixed TUoS charge for the new entrant, over a period of say ten or fifteen years, then the generator could include this benefit/cost in financing decisions.

The above suggestions align most closely with the uniform loss adjustment option and the postalised TUoS (with incentive discount for favourable locations) option identified in the consultation paper.

It is clear from the results of the questionnaire market participants completed in March 2009 that stability, predictability and transparency are by far the most important objectives for setting transmission charges and loss factors<sup>3</sup>. This is hardly surprising given the highly adverse effect volatile, unpredictable and indeterminate price signals have on financing and the cost of capital in general.

The consultation paper lists seven primary objectives, adding cost reflectivity, efficiency, short term efficient dispatch, and consistency between generation and demand

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<sup>2</sup> Note that jurisdictional postalisation is arguably still consistent with a broad definition of locational loss. We note the definition of "locational" was not given in the high level design.

<sup>3</sup> 85.7% of respondents ranked stability and predictability as very important in setting generator tariffs. Transparency was considered very important by 66.7% of respondents and only 19% of respondents ranked cost reflectivity equally. Survey results for transmission losses were very similar.

methodologies. It is important that these objectives are weighted appropriately and align correctly with the Single Electricity Market (SEM) high level design and trading and settlement code. More specifically:

1. VP&E accept that the objectives identified are not always mutually compatible and therefore tradeoffs may be necessary. It would have been useful in this context if the objectives had been ranked by order of importance. Simply choosing options by the number of primary objectives fulfilled does not seem appropriate unless all objectives are equally important and achievable in practice. It should also be recognised that many objectives are complementary. For example, there is nothing wrong with cost reflectivity providing transparent and predictable mechanisms are used to implement it. Similarly, stable, predictable and transparent price signals facilitate efficient investments.
2. We note the absence of accuracy and verifiability as a criterion for choosing a particular option. This is important in the context of a method that claims to be cost reflective ex ante but may not be ex post, or that claims to promote short term efficient dispatch when it might not in reality. The current methodology used to calculate Transmission Loss Adjustment Factors (TLAF) is a good example. The consultation paper claims that this approach is highly cost reflective and highly consistent with short term efficient dispatch. But this claim relies on the accuracy of the forecast methodology used is not reconciled against outturn actual losses in the system. We note that there are inherent forecast errors in the calculation of TLAFs, which include:
  - Dispatch assumptions which presume commodity prices, generator availability, demand assumptions
  - Large changes in load flows are expected with different wind patterns
  - The advent of increased east-west interconnection will significantly influence the volatility of forecast load flows
  - The resultant TLAFs calculated are not fed back into the dispatch calculation to check their effect on the underlying dispatch assumptions.
3. The consultation paper identifies arrangements that do not comply with the SEM high level design and seems to reject them accordingly. The uniform approach to losses falls into this category. VP&E have a different view on this and do not concur with the decision to exclude this approach. Page 9 of the high level design decision paper states that “transmission system losses in the SEM will have to be accounted for using a consistent methodology” and “locational loss factors [should be applied] to the outputs of each generator”. There is no requirement for the loss factors to be different for each generator and the level of granularity is not defined hence there is nothing to prevent locational signals being used on a jurisdictional basis only.

Taking these points into account, VP&E favour uniform loss adjustment factors that possibly vary by jurisdiction to reflect the different electricity systems in the Republic of Ireland and

Northern Ireland. This would provide stable, transparent, and predictable investment signals and would eliminate the current inefficiency of consumers paying for volatility (through higher cost of capital) which they get no benefit from. In our view the current methodology, applied on either a nodal or zonal basis, does not score highly against any of the stated objectives. Its accuracy cannot be tested, it is questionable whether it substantially improves short term efficient dispatch, and the volatility inherent in this approach dilutes any locational signal value it might have<sup>4</sup>. The cheapest and most effective solution is to adopt uniform loss factors.

Our preferred option for transmission use of system charging is to use a postage stamp approach modified for new entrant generators to offer a cost reflective discount for new connections locating in favourable regions. Such an approach would provide a locational signal that generators could respond to at the time of connection. VP&E consider that the High Level Design requirement to use locational TUoS as a proxy for deep costs should be adhered to. We therefore suggest annuitising a new entrant generator's deep costs into an annual component of the yearly TUoS (perhaps with some percentage of the deep costs socialised). This would provide a clear upfront signal to locate in areas requiring lower deep costs. For this to work, it would be important to specify the transmission use of system charges that would apply to the new connection over a period of say ten to fifteen years. The consultation paper states that the new connection would be offered a nominal or percentage discount but its use of system charges would vary year on year and would be indeterminate<sup>5</sup>. This does not provide a good locational signal because it is not bankable.

### **Other comments**

- The consultation paper states on page 26 that “[d]uring the design phase the project team will examine the possibility of providing indicative TUoS charges and TLAFs for a number of years (which would remain subject to change). This may help bring about the transparency needed by Industry Participants”. This would not improve transparency or predictability because the methodology would appear to be the same and the charges and loss factors would still be subject to change. It is important to understand that even small changes in TLAFs or TUoS charges can have a substantial impact on revenues. For example, a one percent decline in TLAFs in 2008 for a typical 400MW CCGT generator would reduce annual revenues by over €300,000 in terms of capacity payments alone<sup>6</sup>.

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<sup>4</sup> The very act of connecting a new generator changes the TLAF in that location and can mean that investors cannot capitalise on the investment signal to which they have responded. Beyond the decision to commit a generator to a given location, there is nothing the generator can do if the location subsequently develops an adverse yearly set TLAF. This could occur as a result of other generator decisions (new build or closure) or changes in load patterns.

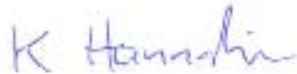
<sup>5</sup> “participant will not know exactly what his charge will be going forward but it will have certainty that its charge will be lower compared to other units who have not chosen a “favourable” location (p. 57)

<sup>6</sup> The revenue loss from energy payments could be even greater but this is more difficult to measure.

- It would also be helpful to understand what mechanisms are in place to incentivise system operators to reduce transmission losses in the current climate of high energy costs, climate change and major plans for network development and reinforcement. It is not clear from the consultation paper why the purchase of losses option does not fit with the design of the SEM or what infrastructure investment would be required to implement it.
- VP&E would consider it worthwhile to carry out further analysis on the merits of TUoS based on energy versus capacity.

Please do not hesitate to contact us for further information or clarity on the points we make.

Yours sincerely

A handwritten signature in blue ink that reads "K Hannafin".

Kevin Hannafin  
Senior Regulation Analyst