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12 April 2017

**Response to consultation on proposals to change electricity transmission charging arrangements for embedded generators**

These comments are from Dŵr Cymru Welsh Water, the statutory water and sewerage undertaker that supplies over three million people in Wales and some adjoining parts of England. We are owned by Glas Cymru, a single purpose, not-for-profit company with no shareholders. We provide essential public services to our customers by supplying their drinking water and then carrying away and dealing with their wastewater. Welsh Water is a significant energy user, consuming around 450GWh/year of electricity and is a growing energy generator approaching 100GWh/year from a variety of renewable energy sources (anaerobic digestion, hydro and solar PV).

We disagree with the proposals as we believe they accentuate rather than alleviating the stress on the transmission system at peak periods and potentially leading to higher not lower prices for consumers and they will further dis-incentivise the development of renewable energy. Embedded benefits also act as an incentive for the implementation of further energy storage which is another potential route to the creation of a smart Grid that would help alleviate stress on the transmission system.

Dwr Cymru Welsh Water has invested heavily in renewable energy and hope to be able to continue with its forward programme. Both past investments and forward plans rely to some degree on income from embedded benefits for assets where generation can be flexed in response to these price signals. Given restrictions on renewable generators receiving ROCs or FiTs entering the capacity mechanism, and the demise of some DSR schemes, the embedded generation benefits are one of the few incentives remaining. This situation contrasts to that of diesel generators which can be set up quickly, cheaply and bid into the capacity market as well as gain embedded benefits. Therefore we strongly advocate separating the treatment of renewable and non-renewable generators should these measures be implemented, preserving benefits to existing renewable generators many of whom will have factored these benefits into their business cases. To implement such a dramatic change without such protection would further undermine the confidence to invest in renewable generation.

We believe that until widespread smart metering and dynamic charging can be introduced, the current charging arrangements have many advantages to drive the right behaviours to reduce system stress at peak periods. We currently aim to maximise generation during periods of high transmission demand so contributing to reliving this system stress. If incentives are removed then so might the additional peak generation which will compound the issue.

Our responses to the specific questions are set out below. We would be happy to respond to any queries Ofgem may have on these comments.

Yours sincerely,

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## Responses to Individual Questions

*Question 1: Do you agree with our problem definition and that the Transmission Network Use of System (TNUoS) Demand Residual (TDR) payments to sub-100MW Embedded Generation ("smaller EG") are distorting dispatch, wholesale price, the capacity market (CM) and that they pose an increased cost to consumers?*

We partially agree. We do agree that some non-renewable smaller EG are causing the above mentioned distortions. They can bid into the capacity mechanism and still claim embedded benefits. However most renewable generators do not have the ability to do so and therefore they don't affect the capacity auction clearing price. Investment in renewable technologies might also be adversely affected by these proposals. We strongly disagree with your assumption that renewable schemes are not imposed a significant revenue impact. Schemes delivered over recent years have had to look beyond the falling levels of FITs/RO support to make them viable. Embedded benefits have played a key part in achieving target rates of return.

Our view is OFGEM should evaluate the smaller EG renewables separately from the rest and assess their added value on offering stress-relief to the transmission system without creating any distortions. Renewables are only assessed briefly in Chapter 5 and no evaluation is undertaken for the possible implications on these generation types, apart from a generic "Impact of potential change" exercise.

*Question 2: Do you agree that rising TDR payments to smaller EG is a problem which needs to be addressed?*

In our view rising TDR payments is not the most significant problem that needs addressing. In the challenge on the transmission system rising TDR charges and payments offer a valid incentive to combat this pressure. The level of charges on consumers is a valid concern but any changes should be applied equally to both charges and embedded payment

We do appreciate OFGEM tries to protect the interest of consumers and identify the most cost effective way forward. We are also mindful of the distortions created by certain types of smaller EG that operate in a purely speculative way. The element that hasn't been evaluated in this consultation is by how much grid demand at peak/TRIAD times will be affected, how this will increase the burden on the National Grid infrastructure and how market will be affected overall. See also answer to question 5 below.

*Question 3: Do you agree with our interpretation of the applicable CUSC objectives?*

N/A

*Question 4: Do you agree with our assessment against the applicable CUSC objectives and statutory duties? Please provide evidence for any differing views.*

In principle we do believe that you have assessed the main point of interest but we don't agree with the assumptions made and the conclusions drawn in a series of cases. Please see answer to Question 5.

*Question 5: In our assessment against the objectives, do you believe there are any relevant assessments we have not taken into account?*

- We do appreciate that you are adopting the view of the National Grid 2013/14 embedded benefits review that "the cost of grid supply point infrastructure investment (GSP investment) is the only evidenced cost that embedded generation can help to avoid", but we do believe that you are using this evaluation out of context within this consultation as the wider implications created and their associated costs have not been quantified and are not taken into account.
- We believe that smaller EG should be categorised as 'Renewables' and 'non-Renewables' and be assessed separately under the grandfathering option. This should be taken into account within your qualitative evaluation of the distortions created between those smaller EG who benefit from grandfathering and those who do not. It should also be noted that an additional benefit of the renewable energy sources is their contribution to the UK's environmental targets, for example Wales is targeting an 80% reduction in

CO<sub>2</sub> emissions by 2050. It will be difficult for industry to contribute to this legislative aspiration if income sources are further restricted.

- We do agree appreciate that there is no legal obligation to continue TDR payments, however changes like this should take into consideration that investment decisions have been taken by taking this element into account and steep changes of policy are sending negative signals to the market and discourage future investments.
- In our view embedded generation at the distribution level reduces the volume of power that has to be transported using the National Grid transmission network, as such, it alleviates the burden of high electricity flows at peak/TRIAD times. As you recognise yourself in 4.75 efficiently sited and dispatched smaller EG may reduce the need for network investment.
- The lower TDR benefit scenario is likely to drive higher CM prices and it is unclear whether this will realise a benefit to the consumer compared to the lower CM prices under status quo. A further evaluation of these alternatives is recommended before any changes are made.
- The assumption that “delays to implementing reductions in the TDR payments to smaller EG may lower the investment outlook for larger generators if they do not consider such delays to be merited” appears to make a link where none exists. There is no clear evidence to support this assertion.
- You are assuming that security of supply will not be significantly affected by the proposed changes, however with the system already operating under tight margins, changes wholesale prices are very sensitive to any change that may affect security of supply. Whatever the benefit for the consumer might be from lower TDR benefits is likely to be offset by spikes in wholesale prices as some smaller EG may choose to leave the market at those times. For example we were very close to two blackouts early this winter due to 1GW unexpected loss from our interconnector with France. This is less than 2% of the total capacity and yet it heavily affected security of supply. Your proposed changes are affecting more than 10% of the total available capacity.
- Whilst it might be the case for non-Renewables smaller EG that grandfathering could have some impact on competition and cost reflectivity, there is no evidence to support this being the case for Renewables smaller EG.
- There is no justification or evidence to support that grandfathering may harm innovation and the impact is not quantified. As you recognise elsewhere innovation should be supported separately from the network charging regime.

*Question 6: Do you agree with our assessment that, in this instance, grandfathering as set out in the WACMs would be unlikely to best facilitate the CUSC objectives when compared to the other options available to us?*

We disagree. We believe that smaller EG should be categorised in Renewables and non-Renewables and be assessed separately under the grandfathering option. Technologies such as hydro and renewable CHP are used to provide stress-relief in the system in times of need without any implications. This should be taken into account within your qualitative evaluation of the distortions created between those smaller EG who benefit from grandfathering and those who do not.

*Question 7: Do you agree with our assessment that the value of the avoided GSP investment cost best facilitates the applicable CUSC objectives?*

We disagree. Embedded generation at the distribution level reduces the volume of power that has to be transported using the National Grid transmission network, as such, it alleviates the burden of high electricity flows at peak/TRIAD times. The removal of support for embedded generators would likely result in increased grid demand at peak and TRIAD times and increase the burden on the National Grid infrastructure or increase the risk of disruption through brown/blackouts, requiring more investment in upgrading the National Grid and therefore increasing charges to consumers – exactly what the consultation is trying to avoid.

*Question 8: Do you agree with our assessment of the impacts on security of supply? Please provide evidence for provided views.*

You are assuming that security of supply will not be significantly affected by the proposed changes, however we are currently operating under tight margins and as we experienced at the beginning of this winter wholesale

prices are very sensitive in any change that affect security of supply. Whatever the benefit for the consumer might be from lower TDR benefits might be offset by spikes in wholesale prices. As you recognise, it is possible that the implementation of options that significantly reduce payments to smaller EG and excluding grandfathering may lead to some operators leaving the market.

*Question 9: Please provide evidence to show if there are other cost savings which small EG drive in comparison to larger (over 100MW) EG on the distribution system.*

Until widespread adoption of real time charging based on smart metering, the existing TNUoS methodology provides a substantial incentive mechanism for large businesses to reduce demand. Similarly TDR payments incentivise generation embedded within the local Distribution Network. This is where smaller scale local generation, particularly embedded behind the settlement meter, can offset this demand from the National Grid and reduce the required capacity for the UK National Grid. This saves significant investment in the transmission system itself. Typically, generation embedded at 11 kV distribution network or on sites with their own 11 kV ring main is restricted to ~5MWe capacity, therefore, capacity well below 100 MWe can be installed much more effectively for the UK as a whole and as such, should not be penalised by a reduction in the current TNUoS benefits realised by generating behind the settlement meter.

*Question 10: Is there other evidence that payment above avoided GSP/generation residual would better facilitate the applicable objectives?*

We strongly believe that a grandfathering option should be adopted for the Renewables smaller EG at status quo levels to reflect the benefit to the system. TNUoS charging method is designed to, and we believe is successful in, alleviating the burden of high electricity flows at peak/TRIAD times. A change in the benefits as proposed would provide insufficient incentive to choose to increase production at these times. This sort of incentive clearly justifies businesses adjusting how they operate their portfolio of assets and benefitting the UK electricity network as a whole, which also manages costs to the end Customer.

*Question 11: Do you believe you have a legitimate expectation or contractual right for the continuation of TDR payments? If so, please provide evidence.*

Our view is that there is no legal obligation to continue TDR payments, however changes like this should take into consideration that investment decision have been made by taking this element into account and steep changes of policy are sending negative signals to the market and discourage future investments.

*Question 12: Do you agree with our assessment of the distributional issues?*

We disagree. There appears to be minimum evaluation of the benefit of renewable CHP and hydro. For example we use our fleet of renewable CHP engines to generate at peak/TRIAD periods so helping increase energy security and mitigating costs. The large number of brown-outs being seen across the Welsh Valleys and other parts of the UK (DCWW is affected by several hundred brown-outs every year) can be partially mitigated by having distribution network scale embedded generation which can help manage voltage locally.

*Question 13: Are there any sectors that we may have overlooked?*

Hydro sector has been overlooked within this consultation as there is no reference within this consultation and no evaluation of the impact of the proposed changes. Hydro generation offers opportunities to flex generation (within limits of abstraction licences) and so can help alleviate, rather than contribute to, peak demands on the transmission network. The existing TNUoS embedded benefits offers a clear incentive to generate at these times but if removed then generation will not be increased at peak periods and the potential transmission problem increased. Once again we urge either exclusion of small-scale (<5MW) renewables or grandfathering of benefits at current levels.

*Question 14: Do you agree with our modelling approach?*

In general we do agree with the modelling approach, however as discussed above we would expect more parameters to be quantified and be taken into account. We note that you are modelling using low estimates on costs, which is not justified by the current environment which is full of uncertainty (e.g. Brexit). You are also making repeatedly the assumption that investment will be there for future projects, however energy companies and end users may be reluctant to invest in a market which is not as attractive as it used to be and where the rules are changing at short notice.

*Question 15: Do you think that our background assumptions and using FES data is an appropriate approximation for status quo?*

N/A

*Question 16: Where WACMs are not modelled directly, do you think our assessment is appropriate (see appendix 8 for detail)?*

N/A

*Question 17: Of the options available to us, do you agree that WACM4 best facilitates the applicable CUSC objectives?*

We disagree. We strongly believe that if any change is made then a grandfathering option should be adopted for the Renewables smaller EG at status quo levels to reflect the benefit to the system. TNUoS charging method is designed to alleviate the burden of high electricity flows at peak/TRIAD times and the embedded renewable generators are already assisting with reducing peak/TRIAD strains on the National Grid infrastructure, while providing additional benefits as discussed above.

*Question 18: Do you believe that an implementation date of April 2018 best facilitates the applicable CUSC objectives?*

As an industry whose prices are regulated on a 5 year cycle (the current one 2015-2020) then we would ask for more time to assess and implement the impact on prices to customers and an implementation date of April 2020.