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Dear Frances,

Charging arrangements for embedded generation

Thank you for sharing your initial thinking with us in your open letter on charging arrangements for embedded generation and giving us the opportunity to respond.

In our response, we set out our thinking on the following issues:

- i. The security of supply impact from removing avoided Triad benefit from new build generation;
- ii. The importance of correctly identifying the costs of the transmission system and the importance of allocating the costs to those who incur them;
- iii. The importance of providing a stable charging regime to facilitate investment; and
- iv. The appropriate mix of generation and the closure of transmission connected plant.

Finally, we conclude that your open letter has already given a clear signal to the market, such that no sensible investor would rely on embedded benefits going forward for new generation. This will be reflected in the upcoming capacity market auctions. Going forward the risk of the loss of the avoided triad benefit means that embedded projects with capacity market agreements may not get built without assurances that this income will be protected. In deciding if you want to give these assurances it may be appropriate to balance the cost of emergency replacement of this capacity compared to the cost of providing grandfathered income.

Impact of removing embedded benefit

In the short term we think that the removal of embedded benefit will have a significant impact on how security of supply is delivered, and the costs of delivering it. A significant volume of new build embedded generation was awarded capacity agreements in the 2014 and 2015 capacity market auctions, and this capacity is part of the portfolio that was intended to deliver security of supply in 2018 and later years. The capacity market was an open and transparent process where the most competitive providers entered, in good faith, into capacity agreements. All providers took account of their costs of delivering, maintaining and operating the plant and took account of other income streams that were available. For embedded peaking plant, triad avoidance was a significant income stream.

If the avoided triad income stream is significantly reduced, it is highly likely that plant awarded capacity market agreements that has not yet started construction will not go ahead. Similarly, the nature of some small plant means that it can be sold and used elsewhere in the world if the rewards are better.

The loss of such generation would cause a potential security of supply issue. That said it is not our view that the lights will go out, but that some process to secure emergency capacity will have to be run (similar to the SBR tender run to secure capacity for this winter). If such a process were rerun we assume that the limited number of potential providers would be able to command a very high price (as in the SBR tender), and because new capacity will not be built in the short term, these providers will be able to command this value for a number of years. If the replacement capacity was purchased in the 2017 Capacity Market auction, it is unlikely that the capacity would be available until 2021.

In your open letter you ask for evidence to support grandfathering. We think that the high costs of replacement capacity to replace generation lost due to the changing of embedded benefit should form a significant input to your decision, and we hope that any impact assessment of CMP264/5 and the associated WACMs takes this into account.

Finally, if the risk of the removal of embedded benefits were to drive up the clearing price of the 2016 capacity market auction it may make any new build contracts awarded in this auction more attractive than those awarded in either 2014 or 2015. This will make it harder to finance any new build agreements (embedded or transmission connected) awarded in 2014 or 2015 (as investors see better returns in 2016 agreements) and may place further pressure on the cost of security of supply for these years. This would further jeopardise the delivery of new plant which is needed for security of supply.

Cost reflective charging

Providing the correct cost signals is a vital part of any sensible investment decisions. In particular cost reflective charging signals should reflect the costs of using of the transmission system and not simply be smeared over a captive charging base like a tax.

Under the current charging regime, the locational charge only makes up about 10% of the transmission owners' allowed revenue, with the vast majority of the locational charge been collected from generation rather than demand (in fact, if it wasn't for zonal averaging of charges, the total locational charge for demand would be zero). The demand residual charge simply consists of the transmission owners' allowed revenue, less the fixed amount that can be recovered from generation, divided by the demand on the transmission system. You note that much of the Transmission Owners' costs are sunk, but it has been a long standing principal that the locational charge recovers the *long run marginal cost* of the transmission network, and therefore negative charges reflect the fact that either smaller capacity equipment may be used to replace existing equipment at the end of the life, or that capacity has been freed up that could be used to avoid the need to invest further to connect additional demand.

A charging regime that can only allocate 10% of the total charge to location (and therefore to transporting energy) seems difficult to justify. Whilst the transmission system serves other functions like the pooling of reserve to manage frequency, it lacks credibility that 90% of the cost of the system cannot be allocated.

We note at the CUSC working group different members have shown that for 1 MW of transmission connected generation, 1 MW of embedded generation and 1 MW of demand reduction, all connecting via the same node on the transmission system, the flow on the transmission system is identical. To be cost reflective, all three should face the same charge for flows that they place on the transmission system. Whilst the current arrangements achieve this balance for embedded generation and demand reduction, they clearly do not achieve it for

transmission connected generation. On this basis we believe that a more holistic review of transmission charging is required, rather than the current modification proposals that seem to introduce new market distortions without tackling the fundamental issues and that are likely to bring unintended consequences.

Embedded generation tends to be smaller than transmission connected generation and therefore building the transmission redundancy necessary to manage for the maintenance and unplanned unavailability of small scale generation is less onerous than building sufficient spare transmission capacity to manage for the unavailability of a larger unit.

In your letter, you suggest that the value of running over a triad is £30,000/MWh (against a residual benefit of £45/kWh). Whilst mathematically correct, we feel it misses the point. Because the triads are not known in advance, it is not possible to target just three half hour periods – if it were you would also expect all demand to shut down for these three half hours, and of course if it behaved in this way then the period would no longer be a triad. In reality, to be reasonably confident of hitting the triad you have to generate or demand manage for significantly more than the 20 periods (10 hours) you suggest. Further, this is a self-adjusting mechanism. If more generation and demand seeks to triad avoid, the more periods that you have to generate / demand manage for, providing a natural limit for the amount of peaking plant on the system.

Stability of Charging regime

When making a decision to invest in new generation, to maintain existing generation or ultimately to close existing generation an investor naturally looks at their expectation of costs and revenues, and an important part of these costs and revenues are transmission charges.

Generation plant has a significant asset life typically a minimum of 25 years with some plant on the GB transmission system over 40 years old, with the majority of the costs of generation plant sunk before it commissions.

When making investment decisions it is necessary to take account of the level of uncertainty of costs and income with higher levels of uncertainty driving up the return an investor would require in a project. The benefits to the customer of reducing risk appears to be recognized in the transmission owners' income stream where a reasonable rate of return is delivered by giving the transmission owners certainty that they can recover the cost of the asset over its lifetime. Whilst supply and generation is clearly a competitive market designed to deliver lower costs to consumers, there is a clear benefit in terms of reduced risk and therefore lower prices if the certainty of the transmission owners' income could be passed on to transmission users in terms of stable charges to access the transmission system, given that it may not be practical to relocate generation plant to reflect changes in the transmission charging regime.

Mix of generation

In your letter you highlight if the market is delivering the right mix of generation on the system and highlight the fact that transmission connected generation is closing.

With regard to your point that transmission connected generation is closing, we would expect this to happen regardless. The closure of transmission connected generation is being driven by the Industrial Emissions Directive (IED) which requires significant upgrades on coal plant to remain operational, otherwise it is on a restricted operating hours regime. Given the statement

made by DECC (now DBEIS) targeting the closure of unabated coal plant by 2025 it becomes difficult to justify significant investment in plant that has to close anyway.

We believe therefore that the key question is if the right mix of plant to replace the closing plant is being delivered? In the short term it is difficult to see that the wrong mix of plant is being delivered. The initial two capacity market auctions have awarded agreements for a major new CCGT station along with embedded peaking generation. Peaking generation is an important part of the plant mix because it is able to deliver energy quickly (it can run for short periods and at short notice without the need to incur costs and unnecessary running of conventional plant either held at part load “just in case” and it can meet short peaks in demand without the longer run ups of conventional plant). Peaking plant tends to have lower capital costs than larger plant, which is a benefit passed to the consumers through lower capacity market clearing prices.

Further, the development of peaking plant is consistent with DECC’s design of the capacity market where the cost of new entry (CONE) was based on an open cycle peaking plant. DECC’s assessment of net CONE reduced the cost of new entry by assuming an income stream from the plant only operating for a few hours per year, but capturing a high price whilst it did operate. Lower new entrant prices than suggested by net CONE appear to have been delivered by developers following the locational pricing signals from transmission charging. Clearly it would be highly sub optimal to build only peaking plant (just as it is sub optimal to build only off shore wind generation) but peaking plant forms a valid part of the capacity mix.

Conclusions

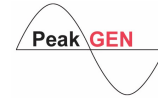
Given the views set out in your open letter, we think that there is a significant risk the some of the embedded plant awarded agreements in the 2014 and 2015 capacity market auctions will not now build their plant unless suitable reassurances are given that they will be held whole to any changes in the transmission charging methodology. The cost of holding these parties whole needs to be balanced against the risk to security of supply if there is a shortage of capacity in later years or the cost of paying to keep other capacity providers operational for a number of years, and the potential cost of doing this at short notice with limited competition, with this cost ultimately borne by the consumer.

We are supportive of cost reflective charging for using the transmission system. Currently embedded generation and demand reduction face the same transmission charges for the same impact on load on the transmission system, and therefore compete on an equal footing. Moving away from this would create a new market distortion. We also highlight that the current locational charging regime only seems able to identify about 10% of the costs of the transmission system; it is unclear what the other 90% of the transmission system is for if it is not to move power between locations.

We highlight the importance of a stable pricing regime for the use of regulated assets like the transmission system, consistent with the stable income transmission assets receive.

We disagree with your comments that embedded generation is causing transmission connected generation to close. We think that these closures are driven by government policy and the costs of complying with the Industrial Emissions Directive. Where new generation is required we see an appropriate mix of peaking and CCGT generation been awarded capacity market agreements.

We accept that there may be issues with charging to use the transmission system although our views differ on the nature of some of the issues. We are broadly supportive of your suggestion



that the rise of the residual charge should be frozen (or simply withholding them from new developments) whilst these potential issues are investigated more fully.

Finally we highlight that the uncertainty created by your open letter may result in some generation awarded capacity market agreements in the 2014 or 2015 auctions may not go ahead, providing these developers with some degree of certainty may be the most cost effective way of delivering security of supply.

Yours sincerely,

Mark Draper,

CEO Peak Gen Power Ltd.