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Dear Hannah

#### Project TransmiT: approach to electricity transmission charging work

EDF Energy is one of the UK's largest energy companies. We provide 50% of the UK's low carbon generation. Our interests include nuclear, coal and gas-fired electricity generation, renewables, combined heat and power plants, and energy supply to end users. We have over 5 million electricity and gas customer accounts in the UK, including both residential and business users.

We welcome the opportunity to respond to this consultation. The key points of our response are:

- TransmiT will play a key role in assisting the UK to meet its energy policy ambitions. It is critical that TransmiT is consistent with the decisions the Government makes on Electricity Market Reform (EMR).
- A Significant Code Review (SCR) is an appropriate mechanism to progress with the evaluation and development of Ofgem's options for TransmiT on the basis that this allows Ofgem to deliver to the current timetable. A timely conclusion is crucial for current and future investment decisions.
- The work undertaken to support TransmiT, since the call for evidence in November 2010, should represent the starting point for any SCR. To date, TransmiT has taken time to consider valuable input from the academic teams and others. This should provide the SCR process with the principles and foundations upon which to build an enduring transmission charging regime.
- Some of the academic teams stated a preference for a charging regime based on Locational Marginal Pricing (LMP). However, this would represent a fundamental change to the UK electricity market. Indeed, developing LMP as part of TransmiT would not be consistent with the direction of EMR and might delay the delivery of both projects. We therefore support Ofgem's proposal not to develop LMP as part of TransmiT.
- The current charging model is based on cost-reflective charging principles. Generator tariffs are broadly related to a generator's capacity and distance from where its output is likely to be used. To date, there has been little evidence presented that transmission



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charging is preventing the development of any form of onshore generation in any mainland GB location. There has not been any evidence provided to support any deviation from the cost-reflective concept of the current charging model.

- In our view, the following high level principles of the current charging regime should be retained to ensure that the costs to GB customers are minimised and security of supply is maintained:
  - Generator transmission charges should continue to be capacity based as this reflects the causation for the costs associated with making transmission capacity available.
  - Locational charges remain appropriate to ensure that signals are provided to generators to locate in the most sensible areas, which will minimise the cost to consumers.
  - Generator transmission charges should be technology neutral and reflect the costs of the assets required to support generation capacity.
- The academic reports published to support Project TransmiT have unanimously supported the maintenance of some form of locational charge. There is a clear link between location, capacity and the transmission assets required to support them. If there was a desire to de-link charging from the costs of the assets put in place to accommodate generation capacity, then this would have to be based on a robust and logical rationale.
- The concept of discounted capacity based charges to reflect different plant output has been mooted by some parties as a potential development in the charging regime. This proposal seems to be underpinned by the assumption that generators share capacity. This concept should be thoroughly tested and the implications of such proposals should be investigated by TransmiT to ensure that parties are treated in a fair and nondiscriminatory manner.
- Notwithstanding this, we understand that there are specific charging issues that need to be resolved as part of TransmiT, including the introduction of the HVDC 'bootstraps', the relationship between onshore and offshore charging to ensure that there are no cross subsidies, along with the charging regime for the islands. We support further consideration of these issues.
- Unpredictable and unstable charges can have a major impact on investment decisions. Any charging regime which uses assumptions, forecasts and historical running patterns is likely to be counter-productive to the delivery of stable and predictable charges. TransmiT should consider options which allow generators to understand or fix their charges in the medium to long term.
- The current split of revenues between generation and demand might be reviewed by TransmiT. For example, consideration of alignment with European charging arrangements might indicate that the generator share of revenues could be reduced.



This is of course subject to the delivery of a stable charge to demand users with appropriate transitional arrangements to avoid adverse affects to longer term customer contracts.

# Timely Completion of TransmiT is crucial

Electricity faces a period of significant investment as it plays a key role in decarbonising the GB economy. As identified in DECC's 2050 pathways, the move to a low carbon electricity sector is key to the UK meeting its carbon targets, and there are many different feasible electricity generation scenarios which will facilitate the achievement of GB and European targets. The electricity transmission connection and charging arrangements will play a key role in facilitating the development of new low carbon generation.

The path that project TransmiT takes and the conclusions it reaches will have a significant impact on the investment decisions that are being taken now and into the future. These investment decisions will set GB on the path of decarbonising its electricity generation mix and meeting its long term low carbon targets. It is therefore important that the timetable published by Ofgem is maintained and does not slip, to ensure that these investment decisions are taken in a timely manner. In particular, it is imperative that, through Project TransmiT, Ofgem provides a clear set of principles and objectives that will form the foundations of the GB transmission charging arrangements for a significant period of time.

## TransmiT should be consistent with EMR

Three of the academic teams commissioned by Ofgem put forward an LMP mechanism as a potential solution to transmission charging. However, it is interesting to note that the Strathclyde/Birmingham team did not recommend LMP as the final solution, in part because of the practical and operational issues associated with implementing such a level of reform. This team has recognised that the current transmission charging arrangements are already in place and are based on a robust rationale.

It is therefore entirely appropriate that Ofgem has decided not to progress with the LMP solution within Project TransmiT. There is a clear need for TransmiT to be resolved to inform investment decisions. Introducing a fundamental reform, such as LMP, would not be consistent with meeting this timetable, and would threaten both the UK's security of supply and ability to meet its long term carbon commitments. LMP would also appear to be inconsistent with DECC's work on EMR, which is being developed on the basis of the existing trading and access arrangements. As the Cambridge academic team identified, it might be possible to combine LMP and EMR. However, in our view, this introduces a further level of complexity and reform which is likely to delay both projects. This would not appear appropriate given the pressing need for timely investment in the GB electricity market.

## A Significant Code Review seems appropriate

We consider that a Significant Code Review (SCR) is an appropriate mechanism to progress with the evaluation and development of Ofgem's options for TransmiT, on the



basis that this allows Ofgem to deliver to the current timetable. A timely conclusion is crucial for current and future investment decisions.

The implications that TransmiT will have for the future of electricity generation in the UK and the need to ensure that it is concluded in a timely manner support Ofgem's proposal to use the Significant Code Review (SCR) process. The work that Ofgem and the industry have undertaken, since the call for evidence in November 2010, should provide the charging principles and foundation for the SCR process.

Additionally, TransmiT meets the SCR criteria for the following reasons:

- TransmiT is seeking to address the issue of transmission charges. Since the Code Governance Review, the transmission charging methodology has been incorporated into the CUSC and so the conclusions of TransmiT will be given effect wholly through CUSC code changes.
- The conclusions of TransmiT will have an impact on the investment and locational decisions of numerous generation developers. This could have a significant impact on the size and affordability of the transmission network, i.e. the costs faced by electricity customers. Incentives on where generation might choose to locate might also have consequences for security of supply.
- Some responses to the TransmiT call for evidence proposed a review of National Grid's (NG's) Licence Objectives, to ensure that they are consistent with the development of methodology proposals that meet Ofgem's sustainability criteria. This suggests that TransmiT will create code-licence issues, as there will be a need to update NG's Licence.

Ofgem should build upon the experience gained from the current Gas SCR when developing and formulating the process that will be followed for TransmiT. To this end, it would be beneficial for Ofgem to provide clarity and transparency on the process to be followed. This will allow the industry to ensure that sufficient resources are available and to support the timely conclusion of this SCR.

#### Charging should continue to be based on strong foundations

The current charging model is based on cost-reflective charging principles. Generator tariffs are broadly related to a generator's capacity and distance from where its output might be used. To date, there has been little evidence presented that transmission charging is preventing the development of any form of onshore generation in any location on mainland GB. Indeed, evidence presented by National Grid indicates that currently the number of connections that they have received is in line with their "Rapid Growth" scenario. This reflects the fact that current connection agreements exceed those within National Grid's "Gone Green" scenario, which meets the Government's low carbon targets. The current principles therefore represent a strong base upon which to build a charging methodology.



Although the academic reports differed in the method of delivering transmission charges, they were unanimous in their support for locational based tariffs. It was recognised that locational prices would provide signals to generators to ensure that they connected to the most sensible part of the transmission network. This helps to ensure that generators are exposed to the costs that they impose on the system if they choose to locate in sub-optimal areas. Locational signals also encourage generators to use the existing transmission infrastructure, rather than requiring the extensive development of the transmission system; thereby minimising costs to consumers.

The reports were also clear in their support for maintenance of a capacity based charge. It has been recognised that the costs of delivering the transmission systems are driven by the capacity bookings of generators. This is further supported by the fact that the costs of providing the transmission system are "fixed", as the assets do not vary with the output of stations. It is therefore appropriate to maintain the capacity based approach to transmission charges.

There are specific charging issues that should be resolved as part of TransmiT. In particular the introduction of the HVDC bootstraps needs to be addressed, so that they can be appropriately accommodated within the charging model. We recognise that the current arrangements also create a transfer of revenue from offshore to onshore generators as a result of the current split of revenues between generation and demand. This should be addressed to ensure that there are no cross subsidies between onshore and offshore transmission systems, and generators. The current regime does create issues for generators wishing to connect to the islands. TransmiT should seek to address this issue.

There is also merit in reviewing the current split of transmission charges between generators and demand, which is currently set at a 27/73 split. The transmission charges (TNUoS) paid by generators are ultimately recovered through the wholesale price, which in turn drives consumers' bills. However, there might also be a risk element incorporated into the cost recovered through wholesale prices to cover any TNUoS forecasting errors for generators. It might be more efficient to move to a position where the TNUoS tariff recovered from generators was net zero (i.e. with locational signals maintain by positive and negative charges), with transmission revenues being recovered from demand tariffs. This would align with many European countries; however, this would require the development of a robust transitional regime so that customers and suppliers had sufficient notice to include these changes in their contractual arrangements.

## TransmiT should deliver stable and predictable charges

The introduction of discounted capacity based charges to reflect different plant load factors has been mooted by some parties as a potential solution to the charging regime. This is based on the assumption that generators behind a boundary share capacity and so investment required on the system can be reduced. Clearly, any reduced investment which provides for a safe and secure grid is of benefit to generators and consumers. However, as recently identified by National Grid, the ability to share capacity requires a diversity of generating technologies behind any boundary. In addition, National Grid has



identified that in a constrained zone with only a single generation technology the constraint costs increase as the generating profile is likely to be positively correlated. This suggests that any charging methodology which provides a discount to generators who share capacity will have to take into account the mix of generation within a zone. This also raises the question as to how monies are transferred between generators within a zone who are sharing capacity, and also whether a discounted charge might be accompanied by less firm transmission access rights. The full implications of any such these proposals should be investigated and developed to ensure that parties are treated in a fair and non-discriminatory manner.

Capacity sharing and output forecasting also raise implications for stable and predictable charges. One of the issues identified by the industry in response to TransmiT has been the impact of unpredictable and unstable charges on investment decisions. The development of a charging regime based on assumptions, forecasts and historical running patterns is likely to be counter productive to the delivery of stable and predictable charges. This is particularly the case if assumptions and forecasts change from year to year as markets and generating patterns change. Given the extent of current reform within the electricity market, combined with a changing fuel mix, the ability of any party to forecast plant outputs is questionable. One solution to this might be to allow generators to fix their charges in the medium to short term, which may warrant further investigation and development. This is subject to demand charging remaining predictable, with appropriate transitional arrangements in place to cater for any changes.

We look forward to contributing to the next steps of Project TransmiT and hope that the TransmiT SCR can deliver, to the current timetable, an enduring transmission charging regime. This is crucial to delivering future low carbon and other generation in an affordable and secure manner.

I hope you find these comments useful. If you wish to discuss this response further please contact my colleague Rob Rome on 01452 653170, or myself.

Yours sincerely,

Jar. A

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