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Dear Martin

Electricity interconnector policy

EDF Energy welcomes this timely consultation on electricity interconnector policy. In our view there should be a fundamental review of the way interconnectors are treated. In summary, our key points are as follows:

- Development of new interconnection is required in order to progress towards aspirations of a single European energy market and to tackle security of supply issues. EDF Energy believes that in the next ten years or so an additional 4 GW of interconnector capacity could be developed between GB and Continental Europe (including Norway) and 2GW with Ireland.

- The market model adopted for future interconnection is important and should be considered in terms of development and ownership, as well as the mechanisms to allocate capacity and determine prices (efficient use), with the same model applying on both sides of the link. These principles will determine both the attractiveness (absolute and comparative) of each product and their acceptability to all the stakeholders, including users, TSOs, private developers, regulators and the European Commission.

- The following attributes should form part of the future interconnection regime, in order of priority:
  - Development and operation by TSOs;
  - Capacity auctions;
  - Access charges through a cost-including-risk pricing approach;
  - Creation of a range of products : short-term to long-term (up to 20 years), with Use-It-Or-Lose-It principle;
  - Secondary trading of capacity rights.

- As an alternative to the development of interconnectors solely by TSOs, EDF Energy believes future interconnection policy should also allow for competitive merchant development of new infrastructure. This is particularly relevant to the UK where interconnectors are HVDC in design and are relatively expensive compared with AC interconnectors. Exemption from regulated Third Party Access (rTPA) should form part of such arrangements in order to protect project returns to cover the required investment.

- EDF Energy supports the concept of market coupling as this has generally proved to be successful.

- Related policy areas such as transmission charging should be reviewed to help facilitate the optimum flow of electricity across interconnectors.

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- Convergence of pricing methods between markets should be targeted to facilitate comparisons.

EDF Energy supports the regulatory drive for the efficient use of interconnectors so that electricity flows in response to market price differentials, whilst operational security is enhanced. EDF Energy agrees that, for such capacity to be used efficiently, capacity products and national electricity market designs must facilitate (and not raise barriers to) economic trade between neighbouring electricity markets.

Member state market design and trading arrangements exist and differ for good reasons. However, it may be these differences between markets that compound regulatory barriers and create additional uncertainties for future interconnector development. Past regulatory requirements have been unduly restrictive, especially with regard to use of revenues, and uncertainty continues concerning future regulatory requirements that could further undermine interconnector investment. Traditionally, interconnectors have been treated as both generation and demand, so are captured by rules that may unintentionally create barriers to trade across interconnectors, e.g. triad charging. To do otherwise could be discriminatory, so we would expect this issue to be thoroughly investigated in any future review of triad charging.

The rationale behind building an interconnector has traditionally been based on the investment case, i.e. weighing up the benefits (capacity value, trading and ancillary services) versus the costs for building and operating the interconnector. If the interconnector has not demonstrated value, then it has not been built. Unlike other parts of the transmission system (driven by security of supply), an interconnector need not be of any particular size. There are few security standards that would dictate such a figure with the exception of a limit on the impact of its unplanned loss or partial loss. The key strategic question now is whether such investment decisions should be in the hands of TOs/TSOs or merchant developers or potentially both. Since 1990, the GB interconnector policy has been the merchant model, because of the inherent technical, physical and commercial risks and because the rental income could not be guaranteed or underwritten by the market participants, including the regulated business of National Grid.

There are a number of implications of adopting the consultation's proposed models three and four (discounting the asymmetrical model two) that would be to the detriment of merchant interconnectors, as these models are aligned with interconnectors built and operated by the TOs or TSOs. Firstly, these models may lead to only short term contracts for energy being established, which in turn implies that the TO/TSOs would have to anticipate the need for new interconnectors. Secondly, rather than taking the full risk of the investment (as National Grid Interconnectors Ltd does at present) the TOs or TSOs are likely to seek regulatory approval in order that their investment costs are included in their transmission asset base.

These models are approaching "strategic investment" models rather than the typical investment rationale for transmission build, which is to respond to generation and supply developments. Strategic investment itself may bring benefits but if the capacity and completion date decisions are taken by TSOs, the process by which they decide on these would need to be made clear. Where interconnectors are of relatively short distance and are of an HVAC design (as is the case between many European systems) then the costs are small and their inclusion in the overall transmission asset base is of little significance. However, where such interconnectors are long and of HVDC design (as is the case of interconnection with the UK), the cost is more significant and there

would need to be an acceptance that generators and suppliers (and ultimately consumers) will meet or underwrite the costs. This could in turn be regarded as discriminatory and undermine any merchant investment in interconnectors.

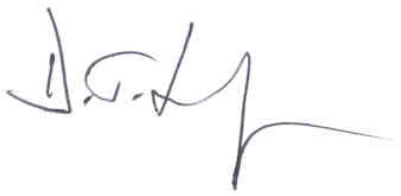
To summarise, we would prefer to see more consideration given to competition in merchant interconnector development and operation, as well as those undertaken by TSOs. Under current GB rules any party can build an interconnector. However, in the rest of Europe this is not the case and so far the TSOs have taken responsibility.

In conclusion, we would recommend an interconnector policy designed in such a way that allows greater flexibility of approach in the UK and across Europe. The rules should perhaps not be too prescriptive, but allow different options to be adopted depending on the circumstances and for those options to be able to coexist. In particular, the primary market regime should facilitate capacity products ranging from long-term (10-20 years) down to short-term (covering annual to intra-day), combined with an active secondary market to reallocate capacity.

We have included some general requirements of an interconnector regime in the first attachment to this letter and have answered the questions raised in the consultation document in the second attachment.

If you have any queries on this response please do not hesitate to contact my colleague Nigel Edwards on 020 3126 2506, or myself.

Yours sincerely



Denis Linford
Corporate Policy and Regulation Director

Attachment 1

Electricity interconnector policy

KEY GENERAL REQUIREMENTS FOR INTERCONNECTOR REFORM

Economic/ Treaty rationale

- Interconnectors allow trading opportunities between Member States. This has the effect of optimising generation at least cost to European markets.
- EU Treaty was set up to encourage trade between Member States by:
  - Removing customs tariffs that prevent trade
  - Identifying and removing "Non Tariff Barriers" to trade
  - Running a single European market using the enforcement of competition law

Commercial Requirements

- Wide variety of capacity products available, ranging from long-term (up to 20 years) contracts down to short-term ones (covering annual to intra-day), combined with an active secondary market to reallocate capacity.
- Gain access to interconnector capacity by using market mechanisms.
  - Capacity auctions
  - Access charges through a cost including risk pricing approach
  - Use-It-Or-Lose-It principle
  - Secondary trading of capacity rights
  - Equitable arrangements for compensation if capacity lost.
- Incentive mechanism to increase security of supply and gain ancillary services for both systems.

Regulatory Requirements

- Need a coherent and consistent interconnector regime to and from and within the UK. This should include connection and transmission charging as important issues.
- Document seems to be driven by European requirements but needs to consider issues such as generation mix and geographical location of GB markets (i.e. as a former electricity island) which will have an influence on design.
- Need to consider competitive dynamic of competition in the market for interconnection.

Specific Requirements

- Over and above the existing IFA and in-construction BritNed interconnectors, EDF Energy believes that 4 GW of additional links with the Continent, including Norway, and 2 GW with Ireland will be developed in the next ten years or so. For its own use, EDF Energy is ready to consider new development between UK and France at least 1,000MW by end of 2016, with capacity contracts of 3 to 15 years.

Attachment 2

Electricity interconnector policy

Detailed response to the consultation questions

Question 1.1: (a) Have we accurately captured the benefits of and demand for new interconnection? (b) Are the projects under consideration all viable? (c) Would they be sufficient? (d) Are there other projects being developed?

a) We agree that much of the benefits of the European market are contingent on a robust interconnection regime. EDF Energy does not think that Ofgem has fully captured the value of benefits provided by interconnectors. They can be valued in terms of the benefits of the electricity they transmit, ancillary services offered and the more intangible value of increased diversity of security of supply. Interconnectors provide an alternative to building a power station i.e. an interconnector can be a capacity provider which might have an amenity value. The closest way this benefit can be realised would be if a party was able to have long-term (10-20yrs) contracts for use of the interconnector capacity and certainty that it could use that capacity flexibly. This includes the ability for the owner (providing it was independent) to be able to use and trade across the facility itself, which current rules prevent.

A physical benefit of new interconnection would be improved management of the intermittent operational characteristics of wind and tidal renewable generation plant. Increased interconnection of the GB grid to the much larger European grid will greatly assist optimal operation of, in particular, the high penetration of proposed offshore wind and tidal generation projects. This benefit could be further augmented if interconnectors could be routed via offshore wind developments, to minimise numbers of new connections to the UK grid and rationalise land use in and around its congested substation sites.

b) We assume that all the projects will be assessed for their commercial viability based on the costs of build, costs of investment, trading potential (including ancillary services) and on operational costs (including losses, TNUoS and BSUoS). The parties involved will have to assess the market price differentials over the lifetime of the project and accept the risks arising.

c) There is no predetermined "correct" level of interconnection as this is largely a product of energy policy, market design and the commercial case. As the market approaches the equalisation of prices, then there is unlikely to be sufficient income (derived from the market differentials) to drive further investment and to meet operational costs, especially for the UK. The "Barcelona 2002 10% rule" within Europe is generally felt to be about right but has no scientific validity and has become a target figure; the real test will be the assessment of the commercial viability of each project. Nevertheless, if being developed by TSOs, we would need to understand how and by whom the maximum capacities and commissioning dates will be decided.

d) There could be other projects under investigation, which we assume will remain confidential until any connection agreement had been signed. At any time another independent provider could propose investing in another interconnection to any of the GB's neighbouring countries. This will happen only if the regulatory regime of both systems is sufficiently flexible and there is sufficient commercial incentive.

Question 1.2: Are there other key aspects of the legal or regulatory framework that we should consider, or should some features be given a different emphasis?

i. The duration of capacity contracts; longer durations may allow some of the capacity benefits to be realised.

ii. Allowance of the owner (other than a TO/TSO) to hold capacity contracts and hence the ability to trade.

iii. Freedom of the owner to use the revenues as it sees fit. Owner revenues should not have to be reinvested in further interconnection and certainly should not be used to offset transmission charges, unless the owner is the TO/TSO and the interconnection risks are also being underwritten by the resident generators and suppliers. If the Interconnector Owner is not a TO/TSO and is at risk to an uncertain and fluctuating income over the lifetime of the project, then the regulation (if any) should be minimal.

iv. All interconnectors to GB should be treated in the same way on both sides of the link if possible; IFA, Moyle, BritNed and the East-West interconnectors should have to abide by a common set of principles, unless it can be shown that to change them is unduly detrimental or that there have to be changes to accommodate the rules on the other system. Flexibility of approach amongst the European systems would make this easier.

v. Review of transaction based charges. In our view there may be elements of the GB transmission charging regime (e.g. generation and demand TNUoS) which should perhaps not apply to GB Interconnectors. The interconnector itself is a conduit for trade; it is not a sink or source, albeit that it can portray similar attributes. The removal of such charges would align the interconnection charging regime closer to the 3rd Package and it would immediately increase the potential for more trade. EDF Energy does recognise that the current form of BSUoS and transmission loss charges, albeit barriers to trade as well, may still be required to be applied.

vi. General treatment of interconnectors and how they should be charged. In particular, the present Triad methodology of charging is unduly onerous and has a serious impact on interconnector trading especially over the winter periods, despite the fact that the two systems are capable of such trades without detriment to either. Moreover, when either system does face difficulties then the market prices will reflect that and so naturally inhibit trade. Triad charging may be justified but should be reviewed along with other transaction based charges.

Question 1.3: (a) How can the Regional Initiative best contribute to development or implementation of policy? (b) Do you agree with the priorities and approach outlined?

a) Regional initiatives may well be suited to identifying interconnection issues specific to the regional markets.

b) Priority must be to allow flexibility in the application of EU rules and reconciliation of differences between national interconnection regimes where differences are found.

Question 2.1: (a) Are the target models explained in this chapter appropriate for GB? What are the issues that need to be considered? (b) Are there alternative approaches that would be better? (c) Will the target models effectively accommodate increased intermittency?

a) The models proposed could work but as expressed in the document this is contingent on other factors such as the wholesale market arrangements. The models in the chapter have to consider key variables in interconnection including: generation mix (present and predicted); the number of borders between systems; and technical feasibility of interconnection. The target models of explicit and implicit auctions could equally be applied to existing and future interconnectors; either would provide a means of trading throughout the day ahead and during the day prior to real time.

b) It could be argued that one auction model is no better than the other, as a sufficient number of intra-day auctions coupled with secondary trading facilities would be as efficient as implicit auctions. Both would need a period (say one or two hours before real time) for balancing trades to be organised and finalised by the System Operators (SOs) in order to make fine adjustments or to balance internal constraints.

c) Beyond these models, EDF Energy believes that the market model needs to cover the development / ownership of the infrastructure that provides the capacity and the mechanisms that will both allocate that capacity and determine prices (efficient use). These mechanisms will determine both the attractiveness (absolute and comparative) of each product and, vitally, their acceptability to all the stakeholders, including users, TSOs, regulators and the European Commission.

- In EDF Energy's view, the following key aspects need to be combined within the model:
    - Capacity auctions
    - Access charges through a cost including risk pricing approach
    - Creation of a range of products : short-term to long-term (up to 20 years) with use it or lose it principle
    - Secondary trading of capacity rights
- The long-term products are driven by the relative competitive position of developing generation plant in different markets or locations. Long-term firm capacity rights, should include compensation for unexpected curtailment.
- The short-term products would be driven by trading opportunities between markets and by the need to optimise existing power contracts and generation capacity.
- As an alternative to the development of these additional capacities by TSOs and access to proper portfolio of products, EDF Energy believes that there is a case to be made for competitive development of new infrastructure and exemption from regulated Third Party Access (rTPA) in order to protect project returns to cover the required investment.

Wind generation, which is forecast to grow substantially, gives intermittent availability that is another facet of generation mix at the extreme end of the spectrum. Interconnection has the potential for both spillage and import between member states.

Question 2.2: What should be our approach to firmness of interconnector capacity? Should this vary between new and existing interconnectors, or between regulated and exempt? What are the categories of costs and benefits from changing approach, where should they fall and can they be quantified?

There should not be a policy on firmness. It should be for each Interconnector Owner to offer the products that it feels best able to offer. This aspect does not need to be regulated, as it will be reflected in the offer prices and hence in any returns received. If the Interconnector Owners can offer firm capacity, then they will have a higher income stream but this will be balanced by higher costs or potential costs (depends whether hedged or not). We note that it is the restricting of interconnector capacity with the

possibility of shortage that creates problems for the markets. Competition law can be applied to interconnector operators and therefore there is no need for further regulation on firmness.

Finally, consideration should be given to the impact of changing regimes for existing interconnectors and the competitive advantages or disadvantages that might then be conferred on the existing operators.

Question 2.3: (a) Should we seek regional solutions rather than individual project solutions for access rules, such as through a broader North West European solution for market coupling? (b) What are the priority areas for greater regional co-ordination?

a) A single energy market is probably not possible right now. Therefore, regional initiatives can make a positive contribution and take account of differences within the region. However, for any given market such as GB, all its interconnectors should have rules with a common set of principles. They need not be the same rules; one interconnector could have implicit and another explicit auctions. The important aspect is that there is the ability of participants to trade in all timescales to the point when the SOs need to take over for the final balancing trades. The set of principles can be region or European wide and, ideally, allow the arrangements to be flexible on each interconnection to deliver the common objectives. Similarly, there should be common treatment of transmission charges for interconnectors; each generator in one system is matched by the supplier in another for such trades and it should be for the resident generators and suppliers to meet the costs. This would in part redress the situation whereby the security of supply benefits of interconnection is not rewarded and yet the benefits are realised by all the generators and suppliers in both systems.

b) A priority should be given to understanding the unintended roles of national charging methodologies and balancing rules as barriers to trade.

Question 3.1: (a) Does this chapter capture the key issues in regulation of new electricity interconnectors? (b) Should we assume that all new interconnectors will seek exemptions?

a) EDF Energy believes that the main regulatory issues have been covered. Any of the models described could be operated, although there will need to be UK legislative changes to move away from the Merchant model. Ofgem should consider balancing the need for charges to be placed on interconnector trades with the need for creating incentives to utilise interconnection capacity to their fullest extent.

A difficulty is that the reason for building an interconnector is one of market based incentives. The traditional reason for a regulated transmission business to build assets has been in response to need, sized primarily to meet or maintain security standards, whereas the size of an interconnector between two systems will be a commercial decision. This fundamental difference was one of the reasons that led to the interconnectors being separated from transmission in the GB models and why interconnectors are defined as assets connecting transmission systems. As commercial entities, it is right that that they be subjected to the uncertainties of the market. To have regulated returns would distort incentives to build, which could disincentivise any independent developers and so ultimately lead to only the TOs/TSOs building them. This latter case could lead to inefficient investments to the detriment of the consumer.

b) Exemptions remove some regulatory uncertainty. Interconnectors are inherently risky projects and they should have minimal regulation. All interconnectors to the GB

market will be of an HVDC design and hence they will be very costly and the income (under the Merchant model) will vary according to prevailing market conditions. On the basis that it would be incongruous for such risky business ventures to be underwritten by the general market and hence it would be a Merchant Interconnector that seeks the licence, then it is highly likely that licence exemptions would be applied for. Furthermore, without receipt of the exemptions it would be highly unlikely for the investment to proceed, as per condition (b) set out in Regulation 714/2009 Article 17-1.

Question 3.2: Of the options set out, which are preferable and why? What are the key considerations in taking forward any of the options?

Currently, the most compatible model for the UK market is the Merchant model and indeed many of the economic arguments used to justify the benefits of a single market (e.g. terms of trade) are compatible with this model. A difficulty is how this continues to sit alongside the models in the neighbouring countries and so it may be expedient to adopt Option 3 or 4, albeit in our view this will stifle competition and reinforce the view that only TO/TSOs can build interconnectors. Options 2 is not appropriate, far better that the facilities are either Merchant and not regulated, or TO/TSO built and regulated.

Whilst interconnectors in Europe have usually been built by TSOs whose grids are being linked, this need not be the case. Indeed, EDF Energy would support the development of more UK – Europe interconnection in conjunction with any TSOs with the appropriate skills and resources, irrespective of the landing point in Continental Europe. This freely competitive approach would assist development of interconnection at the speed desired by the market rather than at the speed driven by the appetite of the TSOs.

Question 3.3: Is it feasible to have a mixture of different approaches for different interconnectors – such as some exempt and others regulated? If not, why and how should this be resolved?

EDF Energy can see no reason why the various options cannot exist side by side, although it does believe that the least risk option is Option 4 and as such the incumbent TO/TSO will have an inherent advantage and interest in building them.

EDF Energy
March 2010