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### **Cap and floor regime: Initial Project Assessment of the FAB Link, IFA2, Viking Link and Greenlink interconnectors**

EDF Energy is one of the UK's largest energy companies with activities throughout the energy chain. Our interests include nuclear, coal and gas-fired electricity generation, renewables, and energy supply to end users. We have over five million electricity and gas customer accounts in the UK, including residential and business users.

In summary:

- We support the development of the European internal market via interconnectors where it improves economic efficiency. In our view, incremental increases in interconnection with GB's closest neighbours are likely to be more beneficial to economic efficiency and GB net welfare under a broader range of scenarios than large interconnection projects to distant markets.
- If an investment is to be supported by consumers via the cap and floor regime, the consumer benefit case must be clear. In addition to the factors considered in the consultation, the Cost Benefit Analysis (CBA) should consider the impact new interconnectors are likely to have on broader energy policies including the Capacity Market and the low carbon support payments made by consumers. If interconnectors increase the cost of these broader policy measures, then the consumer benefit case for interconnectors will be overstated.
- The CBA must take into account differences in policies and regulations between interconnecting countries to ensure economic efficiency i.e. the analysis should compare like with like. It is important to note that when costs are allocated in different ways in different markets, price arbitrage can work against economic efficiency.
- If interconnectors can provide new ancillary services needed for future system operability and reduce consumer costs at the same time, then this is to be welcomed. However, the consumer benefits derived from System Operator (SO) impacts in the consultation appear to be overstated. Since there are material caveats and assumptions used, the benefits outlined in NGET's report require further analysis and should be independently verified before Ofgem makes its final decision.
- On balance, we agree with Ofgem's minded to position to grant the cap and floor to FAB Link and IFA2 but do not agree with its position on Viking Link, for the reasons explained in the attachment. We agree with Ofgem's minded to position not to grant the cap and floor to Greenlink.

Our detailed responses are set out in the attachment to this letter. Should you wish to discuss any of the issues raised in our response or have any queries, please contact Mark Cox on 01452 658415, or me.

I confirm that this letter and its attachment may be published on Ofgem's website.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Angela Pearce".

**Angela Pearce**  
**Corporate Policy and Regulation Director**

## Attachment

### Cap and floor regime: Initial Project Assessment of the FAB Link, IFA2, Viking Link and Greenlink interconnectors

#### EDF Energy's response to your questions

#### Chapter Three

#### **Q1. Do you agree with our minded-to positions on the four projects considered in this consultation?**

We agree with Ofgem's minded to positions to grant FAB Link and IFA2 a cap and floor regime in principle subject to no material escalation in costs. We also agree with Ofgem's position not to grant Greenlink a cap and floor regime.

We do not agree with Ofgem's minded to position to grant Viking Link a cap and floor regime for the following reasons:

- There is substantial downside risk because Viking Link is a large capacity, long distance interconnector which translates to high project costs.
- The reliance on long term price differentials between the two markets to recover these costs is high risk.
- We believe the GB wholesale price savings (Base case) of £2,169m NPV is highly optimistic.
- We believe the SO impacts (Base case) of £516m NPV are not sufficiently substantiated.
- Without the CPS, GB total welfare is only £1m and under the low gas price sensitivity, the GB total welfare is -£200m (Pöyry's analysis).
- As described below, once the broader policy impacts are considered, the GB consumer benefits appear overstated.

#### **Q2. Is there any additional information that you think we should take into account when reaching our decision on the IPA of the projects?**

Yes. There are several policy instruments e.g. Contracts for Difference (CfD) and Capacity Market (CM), designed to achieve specific objectives in the energy sector and many, if not all, are funded by consumers. So far, there has been limited analysis conducted by Ofgem and we think it is important that we fully understand the impact more interconnection has on these policies.

The crux of the business case for the new interconnector projects is the wholesale price differentials between GB and the connecting markets. The flow of electricity from the connecting markets will have a dampening effect on wholesale prices in GB. There is an assumption in the analysis that lower wholesale prices will equate to cheaper energy bills for consumers but we do not think that this will necessarily be the case for the reasons we explain below.

- Lower wholesale prices also mean that more of the budget for low carbon support payments, the Levy Control Framework (LCF) or any future funding arrangements, would be used up than if prices rose. This is because the support payment is determined by the difference between the CfD strike price and the wholesale price of electricity. If wholesale prices go down, more support payment would be required from consumers.
- The suppression of GB wholesale price as modelled is likely to increase the level of support needed for low carbon generation, e.g. CfDs, to achieve the same level of MW installation. This will mean that to ensure GB meets its 2030 carbon ambitions and targets the costs for GB consumers will rise. Therefore, a large part of the consumer benefit of lower prices is lost in higher low-carbon support payments and the additional tax revenue that must be raised elsewhere in the economy.
- Ofgem states that it assessed the expected impacts of interconnectors on the CM and found that it would displace more expensive GB generation from the CM, potentially reducing CM clearing prices, and reduce GB producer surplus. However, this could lead generators to seek higher CM prices to compensate for reduced energy revenues. Since the cost of the CM is supported by consumers, this means that consumers could end up paying more.
- In this context, it should be noted that the level of the CM is likely to have a strong impact on decisions to build new generating plants or to close existing ones whereas it may have a much lesser impact on decisions to build or retain interconnectors supported by cap and floor arrangements. (Unlike generators, interconnectors are expected to be allowed to participate in the CM even if receiving other support e.g. through a cap and floor scheme.)

## Chapter Four

### Q3. What are your views on the approach Pöyry has taken to modelling the impact of cross-border interconnector flows?

Pöyry's approach to evaluating the possible benefits of a new infrastructure investment is well considered and is broadly aligned with our expectations. In particular, we agree with its inclusion of the sensitivity which removes the carbon price support in GB. This sensitivity is particularly important because it would be wrong if the case for interconnection rested principally on differentials that are a result of Government action to price carbon. What is evident from Pöyry's analysis is that net GB welfare benefit depends significantly on the CPS.

In addition to the CPS, interconnected generation does not pay transmission or balancing charges to access the GB network and indeed in many other Member States generators do not pay local transmission charges either. While it is not straightforward to estimate the cost differential, we estimate GB generators pay several £'s/MWh in transmission charges which is reflected in the GB wholesale price. Interconnected generators do not currently pay these charges. This has not been modelled. As with the CPS, it would impact net GB welfare.

The new interconnectors' business model is primarily based on the arbitrage opportunity created by the significant wholesale price differential between the connecting markets

and GB. For example, it is not clear<sup>1</sup> from the consultation whether Pöyry's analysis has considered the impact of further interconnection to the Danish market. There is a risk that, as Denmark is a relatively small market, the existing price differential between Denmark and GB could be substantially reduced if other interconnectors are constructed to Denmark

**Q4. Do you have any additional evidence in this area that we should take into account?**

No.

**Chapter Five**

**Q5. Do you have any views on the information presented in this chapter?**

The estimated impact of the projects on operation of the GB transmission system is one of the factors Ofgem used to reach its conclusion on GB consumer welfare. Ofgem summarises the benefits (NPV) under Base Case as follows:

- FAB Link £827m
- IFA2 £602m
- Viking Link £516m
- Greenlink -£292m

NGET's report 'SO Submission to Cap and Floor' provides monetised assessment of the range of services which interconnectors can facilitate and the range of potential benefits to the end consumer. However, while the information provided is interesting, it is impossible for a third party to determine whether the analysis is robust and the purported consumer benefits realistic because the 'detailed analysis' are considered 'commercially sensitive' and redacted from the publication.

There are also a number of uncertainties in the assumptions used in the model. For example, it is not clear what assumptions NGET used to determine the market prices of the ancillary services. Increased competition from interconnectors will have an impact on prices tendered by generators and Demand Side Response service providers. In the context of Frequency Response, the report notes that increased competition from interconnectors, generators and other Demand Side Response providers in providing Frequency Response would result in cannibalisation of values to a specific interconnector but this has not been considered in the modelling; further assessment is required.

The analysis has been based on the 'Gone Green' scenarios described in Future Energy Scenarios (FES) for a single year (i.e. 2020), with little consideration, on potential generation developments in associated markets connected to the 'remote' end of the Interconnector. Sensitivity analysis for other FES scenarios for future years should be

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<sup>1</sup> Annex C of Pöyry's report describes how interconnection capacity to GB has been modelled but there is no indication of changes to interconnection capacity in connecting markets.

conducted to provide a more robust analysis. We also note that the EU network codes which will govern the exact detail of how these arrangements will work are still draft documents and open to change. Given these rules are likely to impact the costs to parties of providing services there is uncertainty as to what assumptions have been made in NGET's report.

If interconnectors could provide new ancillary services needed for future system operability and reduce consumer costs at the same time, this is to be welcomed. However, in our view, these benefits appear overstated and should be independently verified before Ofgem makes its final decision.

#### **Q6. Are there any additional factors that you think we should have considered?**

The modelling utilises existing National Grid modelling tools. An independent assessment of the suitability of these tools to model the cost benefit of interconnector services would be useful.

Although we appreciate that there is still a lot of uncertainty regarding the changes which may be imposed by the European Network Codes, we found it surprising that the report does not account for any changes on the impact on interconnector flows at all. It would be useful if a high level analysis is included in the assessment.

The benefits discussed in the chapter are dependent on the European electricity market environment as well as the physical characteristics of the system to which the interconnector is connected. For example, the provision of Frequency Response at one end may have an impact on the other system and as such may limit the capability and benefit associated with the interconnector. The modelling has been undertaken largely in isolation from the European end. We note that the report acknowledges that further work with the neighbouring TSOs / networks would be required to ensure that they can support the provisions of services. It is not clear that any adjustments have been made in Ofgem's assessment of the interconnectors to take account of these uncertainties.

### **Chapter Six**

#### **Q7. Have we appropriately assessed the hard-to-monetise impacts of the interconnectors?**

No. Under **Optionality**, it is recognised that interconnection has a dampening effect on wholesale prices, therefore reduces price signals for investment in generation and demand side response. However, Ofgem simply makes the assumption that the Capacity Market (CM) should ensure capacity on the system without fully assessing what this might mean in terms of final costs to consumers. If consumers have to pay more towards the CM, then the consumer benefit case of new interconnectors may be overstated in the assessment.

Under **Security of supply**, the document states that interconnection has a positive impact on security of supply through system meshing and increased supply sources. This statement would be true if the interconnector could deliver during periods of system

stress. However, the assessment does not examine the likelihood of a coincident stress event in the neighbouring market or the reliability of the direction of flow caused by market imperfections - in particular in the cross border intra-day or balancing markets.

Cross border balancing arrangements are indeed in place with France and Ireland (FUI region) over existing interconnectors. While we agree that these arrangements increase the security of supply impact of FAB Link, IFA2 and Greenlink, we believe it would be much more difficult to extend the arrangement to Viking Link which is in a different Region Electricity Market.

The document states that high levels of imports from France and Denmark would have a positive effect on the **UK's legally binding energy targets**. A meshed system with a multitude of new interconnectors being built means that in practice, it is very difficult to assess electricity flows in Europe and their carbon impacts.

**Q8. Are there any additional impacts of the interconnectors that we should consider qualitatively?**

A further impact of increased interconnection is on the LCF or such future arrangements as Government considers appropriate. Given the market differentials, more interconnection will reduce wholesale prices in the GB market. With Government meeting their targets for renewable generation and low carbon plant through CfD FITs which agree a strike price with payments linked to the GB wholesale market price, the effect of more interconnection on the LCF should be considered. There is a risk that the consumer benefit that is achieved through price differentials is then lost partly due to higher difference payments under the CfDs. With increasing volumes under the CfDs into the 2020s this will materially impact the GB consumer benefit case.

**Chapter Seven**

**Q9. Do you have any views on the information presented in this chapter?**

No.

**Chapter Eight**

**Q10. Do you have any comments on our assessment of the project plans?**

No. Since we do not have access to the project plans, we do not have any comments to make.

**EDF Energy**  
**May 2015**