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Our Reference NG/LAD

Dear Emmanouela,

Dear Brice,

Ref 86/11: Cap and floor regime for regulation of project NEMO and future subsea interconnectors

National Grid is pleased to have this opportunity to respond to the above consultation which makes important proposals for developing the regulatory framework for electricity interconnectors to GB, facilitating efficient projects and reducing the regulatory barriers to development that currently exist.

National Grid's subsidiary NGET operates the GB high voltage electricity transmission network and owns onshore high voltage network assets in England & Wales. National Grid also has a number of subsidiaries (ring-fenced from NGET) which are involved in interconnectors. These interests include ownership and operation of the GB end of the existing electricity interconnector to France (IFA) and, via a joint venture with Tennet, a partner in the BritNed interconnector. National Grid has been developing proposals for a GB-Belgium interconnector in partnership with Elia, Project NEMO, which is discussed in the consultation document. National Grid is also progressing proposals for new interconnectors to France in partnership with RTE and to Norway in partnership with Statnett.

This consultation is timely because of the need to develop electricity interconnection in order to help meet GB and European energy policy goals. Interconnectors contribute to achieving security of supply by giving access to more diverse energy sources. They create welfare benefits by enabling advantageous trades between consumers and producers. In so doing, they facilitate competition not only in the primary wholesale markets but also in the provision of system balancing and ancillary services. By this means, and by exploiting geographical supply/demand diversity, they are particularly important in integrating more variable renewable generation sources. In a European market context, interconnection provides important capacity to relieve the congestion that can exist between member state transmission networks.

National Grid agrees with the identified regulatory principles in the consultation document and agrees that a regulatory regime should mix exposure to market determined value, safeguards against use of market power and risk sharing with the link's wider beneficiaries. The identified framework options appear to be comprehensive and we set out our preferences together with our reasoning in our answers to the specific consultation questions below.

As interconnectors (especially those involving subsea cables and AC/DC converter stations) require significant investment then it is right to ensure that the framework encourages the best combination of link design, asset delivery and subsequent operation. The proposed framework ensures participation in interconnectors is not restricted to or biased towards incumbent TSOs and it also ensures the significant interactions between design, delivery and operation (for example, that result from choices about technology, location and timing) are effectively managed by a developer who fulfils all the obligations of a TSO as defined in the 3rd package. However, in seeking such an approach where existing national TSOs may not necessarily be partners in such developments, the need to ensure effective coordination of link developments with associated developments to other networks (especially the onshore transmission systems) becomes very important. With the current absence of financial signals to inform the efficient location of link connections within GB, this aspect of coordination in particular needs further development if a risk of inappropriate (network congestion causing) link locations is to be avoided.

Concerning the other identified potential risks to consumers and customers from the approach, we agree that incentives to selectively allocate costs to different categories may undermine the desired behaviours of efficient delivery and keeping availability high. We agree that it may be beneficial to add supplementary availability incentives at times when the incentives from market exposure will not be effective. We also suggest that the risk of inappropriate cost allocation can be reduced by equalising incentive exposures between cost categories including between link ends. Despite the focus on potential selective allocation opportunities for incumbent TSOs in the consultation document, we suggest that equalisation of incentives is easier to achieve for incumbent TSOs than for independent 3rd party developers (especially given the current absence of arrangements to coordinate link location and congestion management actions).

On the topic of equality of treatment, whilst it is not expressly covered in the consultation, we would stress that this principle should also apply to the application of developing EU legislation, notably the EU Network Codes, on existing and new links. An important topic here would be how the principle of 'firmness of capacity' is treated at both ends of a link and indeed across the market region that links operate within.

For other future interconnector developments, the framework will need to recognise the potential that some countries will use different regulatory frameworks. Although the consultation document recognises the potential need to evolve towards converging caps and floors and a regulated return approach due to increasing price convergence between GB and other markets, this may also be required if Ofgem cannot coordinate market exposure incentives with their NRA counterparts. On this basis, we suggest the scope for using this framework in the longer-term will depend on the extent that all NRAs can reach a common view.

Finally, we believe that the framework should take account of the potential for adverse impacts on existing GB interconnectors when determining regulatory parameters for new projects.

Yours sincerely,

Lewis Dale

Question 3.1: Do you agree with principles of the regulated regime we have identified?

National Grid agrees with the principles for the reasons set out below:

1. Developers should be exposed to the market's valuation of interconnector capacity,

This principle means that developers will have incentives to establish and maintain capacity where and when it is particularly valued by the market. This protects consumers by market testing a significant proportion of the proposed investment and by establishing efficient incentives for operation. By providing upside for developers who correctly formulate plans as well as efficiently execute them, it ensures the interactions between design, delivery and operation are addressed and optimised.

2. Consumers should be protected from the cost implications of excessive returns or market power that might accrue to interconnector owners,

Like many aspects of network service provision, there is scope for interconnector owners to achieve high returns, either through market power or through windfall effects, in both the short and longer-term and therefore we agree that it is right to implement safeguards. However, such controls should be implemented in such a way as to encourage the efficiency and innovation benefits that can be facilitated by market exposure and allowing developers to find the best way of satisfying market needs. On this basis, we agree that measures such as "use it or lose it" to address any short-term withholding of capacity and the return cap to protect consumers against the consequences of any systematic under investment in the longer-term should be available to regulators.

3. Developers should be able to earn returns that are commensurate with the levels of risk they are exposed to under the regulatory framework,

While this recognises a general principle (i.e. projects will only be taken forward if developers believe they can earn returns that are commensurate with the levels of risk they face), it is particularly important for interconnector projects because EU regulation requires specific regulatory arrangements by default. Such arrangements seek to ensure that policy objectives and the wider benefits of interconnection (such as enhancement of security of supply, enhancing competition and delivering net welfare benefits) are delivered and the costs and benefits appropriately allocated. Against this background, and if the benefits of a market driven approach are to be realised, then network investors must have confidence that rule changes following their investment would not unduly affect the value of their investment or transfer value to other parties.

4. Regulatory treatment of developers should be coordinated between NRAs at either end of the shared asset

We agree that this is an important objective in order to determine appropriate regulatory parameters for interconnector projects and minimise regulatory risks. Ofgem's willingness to work with other regulators has been instrumental in reducing interconnector development barriers that result from differences between GB and continental regulatory practices. This principle is also consistent with the duties on national regulators set out in the 3rd package (Articles 36 to 38 of Directive 2009/72/EC).

5. (For GB and new interconnector developments) Regulatory treatment should allow third party developers and should be impartial and unbiased between TSOs and non-TSO developers, existing and future developers

We recognise that a number of parties are considering the development of interconnectors to GB who are not affiliated with existing TSOs (either National Grid, TSOs in other countries or other

existing interconnector owners) and so ensuring unbiased arrangements is very important. In particular, for consumers to benefit from the use of market derived returns then unbiased arrangements are needed to ensure the best schemes succeed.

Given the importance of co-ordinating interconnector development and operation with the wider network infrastructure (see answer to question 4.1 below) unbiased arrangements should not be achieved by neglecting necessary interactions with existing network operators.

Whether it is necessary or beneficial for the existing legal prohibition on NGET from the participation in interconnector operation to remain (as required by the Energy Act) is for future consideration, perhaps when experience with the functioning of revised regulatory frameworks can be assessed.

Question 3.2: Are there any other principles that should underpin the new regime?

On the basis that regulators can address the additional issues we identify below in the context of the identified principles, we have no suggestions for additional principles.

Question 4.1: Is the cap and floor model the right approach to meet the principles of the new regulated investment regime for sub-sea interconnection? Are there any alternative approaches that we should be considering?

The cap and floor model meets the identified principles by exposing developers to the market's valuation of the established capacity (principle 1), limiting returns in the event that insufficient capacity is developed (principle 2), sharing risks between developers and charge payers by establishing floor revenues (principle 3) and being in a form which is equally applicable to new entrants as well as existing network operators (principle 5). We welcome Ofgem and CREG's joint work to establish a regime for a GB-Belgium development partnership as an example of principle 4 in action.

As well as protecting consumers from market power and developers from regulatory risks, the cap and floor model establishes consistent incentives on developers to coordinate design, delivery and operational activities including the management of the interactions between these activities. This means that an interconnector developer would be a 'full' TSO (in the manner identified in the 3rd package and as appropriate to interconnectors) and so will be empowered to discharge the coordination duties needed to efficiently provide cross-border capacity for the single market. Regimes that would split the decision to develop interconnector capacity from the party that would deliver assets and/or subsequently operate them are unlikely to fulfil these requirements.

Despite the desirable properties of the cap/floor approach, there remain some challenges to achieving the needed coordination in the development of network infrastructure. For example, the absence of financial signals directing the location of interconnector connections within GB could lead to inefficient choices of connection location and subsequent operation which exacerbates rather than alleviates congestion in the GB market price area. Such issues are directly addressed in many member states by obligating the national TSO to manage overall network design and development including interconnectors. In this case, all necessary coordination actions are undertaken by the partners in the interconnection project. However, if the benefits of enabling other parties to participate in interconnector development in GB are to be realised then it is important to ensure that there are effective arrangements for coordinating existing TSO activities with those of separate developers of new interconnectors.

Question 4.2: Do you see benefits in introducing a cap and floor regime with profit sharing arrangements? Do you have views on how a profit sharing approach could work?

A simple cap and floor mechanism has the benefit that if performance is within this range, there is no need for regulatory intervention and decisions concerning the allocation of costs and benefits. A profit sharing factor which permits charge payers to receive a share of link trading benefits as well as the wider interconnection benefits requires regulators to continuously determine the size of revenue flows to or from charge payers. This increases scheme complexity and regulatory risk.

As identified in the consultation document, caps and floors could give rise to incentive discontinuities at the activation of the cap or floor. The concept of profit sharing (between the cap and floor) would mean that the investors and customers would share the costs and revenues throughout the spectrum of returns. As such, it could reduce the impact of discontinuities, but at the expense of additional complexity and more regular regulatory intervention.

A trading benefit profit sharing arrangement means that there is an additional factor determining the extent that developers can expect market derived revenues to be available to fund an interconnector investment. If such a profit sharing is implemented and a link is to remain a viable investment, then the profit shared by transmission charge payers will need to match the proportion of the link investment costs underwritten by those charge payers. (This would be the reason why profit sharing would need to be taken into account when determining cap/floor parameters as identified in paragraph 4.4 of the consultation document). Without such a matching cost sharing, a profit sharing factor would generally reduce developer link returns and hence discourage efficient link investments.

To assess whether there is a suitable sharing of total benefits and costs under a cap/floor approach (with or without a continuous trading profit sharing mechanism) it is helpful to examine the extent that charge-payers would be expected to underwrite link costs. This may be quantified by calculating the present value of revenues that might result from the floor mechanism as a proportion of the expected interconnector costs. This ratio may be compared with the extent that charge payers directly underwrite onshore network investments costs (which currently span between 60% and 75%).

Question 4.3: Do you agree with the potential risks of the new regime identified? Are there any other risks or issues we should be taking into account?

The identified risk that once the cap or floor mechanisms are triggered there may be reduced incentive to achieve desirable performance is the complement to the beneficial incentive properties of market exposure. On this basis, such risks may be reduced by establishing a suitably wide range in which market exposure would be active. However, if more restrictive ranges are needed, then incentives for maintaining good link availability could be maintained by making the provision of floor revenues dependent on satisfactory availability.

Incentives to allocate costs inconsistently between categories would be substantially reduced if parameters are set so there is a consistent exposure of developers to costs and benefits between the interconnector ends and between interconnectors and onshore networks. (The suggested comparison of incentive exposures identified in the previous answer may be relevant to this objective). It is also relevant to note that development partnerships comprising parties who have interests focused on their side of a link will tend to scrutinise and self-police cost allocations by their partners in order to avoid unfavourable cost sharing.

While the consultation document identifies the opportunity for an interconnector operator who also owns onshore transmission to benefit from selectively allocating costs, such behaviour may

also arise more generally. For example, an interconnector developer unaffiliated with the onshore TSO may derive higher returns by connecting or offering capacity in a manner that increases onshore congestion and thereby generates favourable congestion management opportunities to the disadvantage of the onshore TSO and transmission customers.

Incentives to allocate costs inconsistently between time periods can similarly be reduced by ensuring the incentive importance of different time periods are similar. While certain formulations of caps/floors would result in incentive rates that tend to be more consistent over time, the use of 'true-up' mechanisms may give similar properties with different cap/floor formulations if they reconcile cap/floor revenues that may have been triggered on the basis of transient conditions to reflect conditions that result subsequently.

Even though the drivers for perverse behaviour may be reduced by choosing suitable formulations and parameters, some regulatory monitoring of costs and revenues will be required. However, the generally simple relationship between asset and capacity availability on HVDC links means that such monitoring should not be unduly onerous.

Question 5.1: Do you agree with the proposed design parameters of the cap and floor mechanism? Are there any other parameters we should be taking into account when designing the cap and floor mechanism?

The design parameters in the consultation document cover relevant options for implementing an interconnector regulatory framework.

The consultation document does not identify the approach that would be taken if NRAs at the link ends decide to apply different regulatory arrangements (perhaps as a result of different national policy objectives or due to the direct involvement of a national TSO). This design parameter may be described as harmonised/distinct link end regimes. While we would generally prefer to see harmonised arrangements at the link ends (because partnerships are more likely to succeed when the partners have aligned interests) we recognise that other issues may take precedence and different arrangements may be acceptable as long as the general application gives a reasonable outcome at both ends and permits the investment to occur to the benefit of consumers at either end.

Question 5.2: Do you have a preference for the options presented under each parameter? Do you have a preferred combination or straw man proposal for a cap and floor design?

Our preferred formulation and choice of parameters would be such that departures from a normal commercial operation based on market derived revenues would generally be on a 'by-exception' basis and undertaken in such a way that the results may be directly reconciled with the original investment case/business plan.

On this basis our preferred parameters are:

a) Regime duration – project commercial lifetime

We suggest the regime should be set initially for the planned commercial lifetime of the project (and any further asset-life would then be addressed by subsequent regulatory regimes when better information is known). This avoids making assumptions about conditions that are too uncertain to incorporate in the business plan (such as prospects for operation in the longer-term). This approach also avoids creating perverse incentives relating to management of asset life because the developer retains options to create further value in subsequent regimes by suitable asset management decisions within the current regime. (For example, it avoids incentives to manage physical asset life so that it is only likely to last the duration of the current regulatory regime).

b) Cap/floor basis – project IRR

While the monitoring of revenues may be administratively less onerous than monitoring profit (i.e. costs and revenues), monitoring only revenues would not cover all the elements that are important to assessing an appropriate sharing of costs and benefits between developers and other beneficiaries.

If parameters are to be set so there is consistent incentives between cost categories, between time periods and between actual conditions and those originally expected then it is desirable to relate parameters to the original basis of the investment decision. The IRR measure enables simple comparison with the original investment decision and automatically deals with timing of monies issues.

c) Frequency of assessment – periodic

Assessments should be carried out on a regular periodic basis.

A one-off assessment at the end of the project may be too late to share risks/costs/benefits (because the operator of the link may have wound up operations if operating below the collar or may have paid excess returns out to investors if above the cap). It would also introduce intergenerational issues in that the timing of sharing any costs / benefits with customers could differ substantially from the time at which those costs / benefits actually occurred.

d) Relationship of assessments – cumulative

To best relate outturn with the original investment case all available information (cumulatively observed) should be used.

Arrangements that 'true-up' revenues resulting from one assessment in the light of information observed in later periods are effectively forms of cumulative assessment.

Regulatory formulations that do not use cumulative assessments and/or true-up mechanisms give rise to a risk that the arrangements themselves rather than the economic fundamentals may become significant in actual investment decisions.

e) Cap/floor determination – one-off

To maximise certainty and confidence in the regulatory process it is desirable to set regulatory parameters at the outset and only reset them by-exception.

f) Number of cap/floor values – single value (ideally)
g) Asset value for return calculations – expected value approach

We suggest that a regime which measures achieved return on a basis directly comparable with the original investment decision (which may be summarised as a range of acceptable project returns for investors and regulators) would aid transparency and minimise risks of diverging behaviours or policy implementation. An expected value approach to determining an IRR achieves this aim.

It is the case, however, that alternative formulations of the cap/floor (for example, those based on simple straight line depreciation assumptions) can result in the same return safeguards in the longer-term for consumers and developers provided that true-up adjustments are made in later periods. Such approaches may have desirable properties in terms of their risk sharing in early years of the project and simpler accounting.

h) Narrow or wide? – As necessary

We recognise that regulators must balance the objectives of:

- Protecting consumers (by market testing of investment decisions and establishing aligned operational incentives)
- Delivering new benefits (net welfare, security of supply, and enhancing market competition/liquidity)
- Helping to deliver national and European energy and environmental policy goals
- Avoiding disproportionate or counterproductive regulatory actions
- Encouraging innovation (for example by trailing different approaches and agents)
- Ensuring adequate coordination between multiple agents

To keep the regime as simple and transparent as possible while minimising scope for perverse actions we note that there is an opportunity for setting parameters such that they are consistent with initial investment decisions and such that developer incentive exposure is maintained across the family of onshore and interconnector assets.

i) Symmetry – yes

Generally symmetrical exposures to upsides and downsides from an agreed starting position means that developers and clients are not biased from completing the original bargain.

j) Profit sharing of market derived revenues – generally avoid

As identified in a previous answer, a sharing of market derived profits is more complex and demanding in terms of regulatory intervention than a by exception cap/floor trigger. However, it offers an alternative and potentially complementary way of sharing link costs and benefits between developers and charge payers. It is likely to result in more continuous risk sharing but more variable revenue flows with charge payers. It might make wider caps/collars acceptable and reduce the scope for perverse behaviour at the transition from market derived to capped/floored revenues. It would be possible to develop a consistent package of incentive measures by considering the combined effect on developer incentive exposure.

k) Other incentives

The benefit of an availability performance exposure when developers are not exposed to market derived revenues by action of the caps or floors has been identified. We agree it would not be in consumer's interests to pay floor revenues if a link is unavailable on a long-term basis.

l) Harmonised regimes at both link ends

We suggest that harmonised caps/floor parameters at the link ends is desirable both to ensure effective working of partnerships and to minimise incentives to selectively allocate costs.

If such harmonisation cannot be achieved, for example due to a fully regulated approach being adopted at one end, then it is likely that the differences between the ends will need to be minimised by adopting narrow caps/floors. (See also answer to Q5.1).

Question 5.3: Do you think additional incentives should be introduced to encourage desirable outcomes under the regime?

Whether incentives are used or simply just obligations, there is a need for interconnector developers to participate in coordination actions which ensure efficient link location and congestion management actions.

Question 6.1: Do you agree with Ofgem's intention to use the cap and floor regime for future sub-sea DC interconnection in GB?

Yes –the package of measures in the regime permits Ofgem to remove existing regulatory barriers to efficient developments, appropriately share costs and benefits between developers and charge payers, encourage needed coordination and minimise scope for unwanted behaviours.

Question 6.2: Are there any key issues we should be taking into account when developing the process for evaluating new projects?

Ensuring that interconnector developers are treated in an unbiased fashion would be strengthened if there is a presumption that developer exposure to market revenues on interconnectors to the same market price area would generally be equal. (This may also help reduce incentives for the inefficient allocation of costs identified in Section 4 of the consultation document).

We would highlight the need for coordination in the location of links and management of congestion (see answer to question 4.1).

The Third Package envisages that interconnectors will be developed by TSOs working together to ensure that the overall solution is the most efficient and economic. Given the current absence of financial signals to inform the efficient location in GB, it will be particularly important for all interconnector developers to work closely with NGET and consider network integration issues such as connection arrangements, congestion and suitable wider reinforcements. Ofgem suggest in paragraph 2.9 that an interconnector owner would need to be certified compliant with Article 9 before the interconnector becomes operational. However given the need for the developer to work with the affected TSOs "as if they were already a TSO" and, for example, to ensure that confidential data is not shared with a generator affiliate, it is for consideration whether a developer should be required to demonstrate compliance with Article 9 prior to the development of a particular project commencing. For example, the developer might be required to obtain a "light" interconnector licence (this could provide the necessary obligations regarding unbundling, cooperation with affected TSOs, data confidentiality and at the same time provide Ofgem with any appropriate enforcement powers over the developer).

Ofgem should consider the potential for adverse impacts on existing GB interconnectors when determining regulatory parameters for new projects.

The desire for developer firmness undertakings on long-term capacity allocations should be consistent with developer exposures to other costs and benefits.