Agency for the Cooperation of Energy Regulators

15 September 2011

Dear Sir or Madam,

ACER: Draft Framework Guidelines on System Operation

EDF Energy is one of the UK's largest energy companies and provides 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 five million electricity and gas customer accounts in the UK, including both residential and business users.

We welcome the opportunity to respond to this consultation. Our answers to your questions are in the enclosed attachment and the key points of our response are as follows:

- We support the harmonisation of system operational parameters within synchronous areas on the basis that this enhances security of supply, is cost effective and ensures efficient flow of energy to customers.
- We note that full harmonisation between different synchronous areas might not be possible due to the HVDC connection between them. System reliability rules can also differ across synchronous areas. For example, the number of circuits per power line is two in Great Britain (GB), but one in much of the continental synchronous area, meaning that the reserve held to meet security assessments will be different.
- However, further improvements in harmonising information flows between synchronous areas would be of assistance, particularly during emergency conditions.
- Finally, we welcome the intention to take market requirements into account, and to ensure that any new requirements are based on a robust cost-benefit.

Should you wish to discuss any of the issues raised in our response or have any queries please contact my colleague Paul Mott on 02031262314, or myself.

Yours sincerely

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Attachment

Framework Guideline System Operation Consultation

EDF Energy response

1. The Initial Impact Assessment (IIA) identifies the following challenges (i) growing amount of distributed generation and variable generation (ii) increasing interdependence of control areas. Are there additional key cross-border challenges that the Framework Guidelines (FGs) and Network Code(s) on System Operation should address?

Along with the above challenges is the likely demand growth due to the electrification of heat and transport. Subsequently, network operators might need to find ways to access demand side response on occasion. It would be useful if the SO-FG could acknowledge this future requirement. Furthermore, the FG and Network Code (NC) should not be so specific as to inhibit the development of new approaches to system operation or the adoption of new market mechanisms or network technologies.

2. The Framework Guidelines identify a number of actions and requirements to be included in the Network Code(s) as a solution to these challenges. Are the actions and requirements identified in the Framework Guidelines appropriate to solve these challenges?

System operation has an important influence on interconnector trade. Reserve, intra-day and balancing mechanisms are closely linked and care must be taken to avoid distortions between them.

3. Are the proposed levels of harmonisation sufficient to these challenges?

Care should be taken not to harmonise aspects which are not suited to harmonisation. The definition in the NCs of minimum security criteria can only be standardised within a synchronous area. The approach taken in GB to the construction of new transmission lines has, due to the greater population density, differed from the continental synchronous area in that GB pylons usually carry two circuits per line. This is why the GB synchronous area's operational security standard, "N-2", dictating system operator reserve-holding practice, differs appropriately from that applied to the continental synchronous area. The GB system operator is also required to secure against a generation loss, or change in instantaneous power balance which is different than the continental and Irish synchronous areas, but for good reasons.

4. Should the Framework Guidelines be more specific with regard to areas that need to be harmonised, both across and within synchronous areas?

Harmonisation or standardisation should primarily be within synchronous areas, and not between them. The current synchronous areas in the EU have very different physical characteristics; a one-size-fits-all approach might not be efficient or cost-effective.

Harmonisation of operating rules and practices should broadly be at synchronous-area level. Harmonisation between synchronous areas should be in terms of overall approaches to system operation. Harmonisation of the definition of reserve and ancillary service products would have some modest benefits between synchronous areas, given the pan-European nature of some market participation.

GB consumers were not affected by the power cuts of 4th November 2006 due to the isolating effect of the HVDC interconnector. It is not correct that flows along HVDC interconnectors cannot be precisely controlled due to the laws of physics, as implied in the draft FG. This is made in support of a contention for harmonisation between synchronous areas. Flows along HVDC interconnectors are very precisely controllable using thyristor control. It is AC flows within synchronous areas which cannot be controlled precisely, only influenced where certain equipment is fitted.

Where a severe power shortage occurs at both ends of a DC interconnector, the relevant emergency assistance agreement between the SOs will typically allow its flow to be set to zero. This is required as requests for emergency assistance from both synchronous areas at the same time "cancel out" in the agreement causing the operation of the DC interconnector to be neutral in effect. Where there is, exceptionally, a severe power shortage at just one end of a DC interconnector, power can be sent under the emergency assistance agreement from the other end, so that the operation of the DC interconnector is beneficial to the synchronous area that is experiencing the power shortage.

Harmonisation is a means to an end, not an end in itself. Standardisation will be possible over a far greater range of areas within a synchronous area, than between synchronous areas.

5. Should the Framework Guidelines require the development of common rules for System Operation between synchronous areas?

As further interconnection is built between synchronous areas, greater coordination will be needed. Commonality of approach between differing HVDC interconnectors will be highly beneficial. In addition, transparency of both general market operation in relation to those interconnectors, and in relation to any SO-SO actions across the interconnectors in terms of what is allowed for, and what actually occurs might also bring benefits.

Excellent inter-SO information exchange between synchronous areas is vitally important, as is the ability for SO-SO assistance across DC interconnectors. This should be achieved in a way which leaves integrated half-hourly flows unaffected, and effective commercial use of the interconnector intact.

6. Considering the current arrangements of the system operation rules and procedures throughout the EU, what would be an appropriate level of detail for the Network Code(s) on System Operation?

Network operation is expected to change over the coming decade due to the amount of new renewable and low-carbon generation, and the rapid changes in demand as heat and

transport are electrified. Active network operation will become more important as will demand-side response. New network technologies and system operation approaches might need to be adopted. It is essential that the NCs are not unduly prescriptive in areas where there is no clear economic or security benefit, allowing instead for flexibility so that many of these issues, where codification is required, may be resolved in evolving national codes.

The NCs should be based on the existing codes applicable to relevant synchronous areas and existing codes could be cited as reference documents in the FGs.

Any proposals to raise existing standards should be subject to full cost-benefit analysis and should take into account the high levels of reliability currently achieved by the EU's transmission networks.

7. What key benefits and types of cost would you expect for compliance with these requirements? Please quantify from your point of view.

Technical harmonisation should not be pursued regardless of cost. The benefits of any standardisation of approach should be greater security of supply and facilitation of more integrated competitive markets.

Costs to consumers of extra reserve-holding would be substantial if operational security requirements were standardised between synchronous areas. Security of supply might also be too low in some synchronous areas and too high in others if a single standard were set.

8. Should the Framework Guidelines be more precise on organisational aspects of operational security, in particular with regard to security assessment?

The approach used for security assessment could be standardised, but its application locally will lead to different outcomes in different synchronous areas.

9. Are the implications for significant grid users clear and relevant?

It would not be appropriate for TSOs or DSOs to establish requirements which are then imposed on grid users such as generators or consumers. This could lead to requirements being imposed in such a way that costs and risks are shifted from the monopoly network business to generators and/or consumers.

10. Are the roles and responsibilities sufficiently addressed?

The agreement of local electricity codes within each synchronous area must fully involve network users.

11. Are the individual provisions under Scope & Objectives, Criteria, Methodology & Tools, Roles & Responsibilities, Information Exchange and

Implementation Issues, associated to the particular topic, adequate? Should there be any additional elements?

The section on Information Exchange assumes that TSOs will centrally despatch generators, as opposed to systems using self-despatch under forward contracts, supported by a balancing mechanism. There is good transparency in the GB market in respect of generation data and there is also participation in a balancing mechanism.

12. Could you foresee any other relevant New Applications which should be mentioned in these Framework Guidelines?

The list excludes developments that may occur in relation to lower voltage networks. Network operation is expected to change over the coming decade due to the amount of new renewable and low-carbon generation and the changes in demand as heat and transport are electrified. Active network operation will become more important. This should be mentioned under Topic 6 (new applications), but it is essential that the resulting NCs are not unduly prescriptive so that innovation is stifled.

13. Any Other Comments

The term "significant Grid user" used within SO-FG is not defined in the appropriate section. Definitions must be consistent across each FG or EU Code, e.g. the term "Grid" tends to mean the high voltage Supergrid, as defined in the GB Grid Code (power lines energised at 275 kV and above). It may be better to use the term "significant network user." However, the latter needs to be clearly defined so that market participants are able to understand to what extent they will be impacted.

We agree that English could be generally adopted as the language to be used in the documentation of training of system operators, and further suggest its use in communications between SOs in countries where multiple languages are used.

EDF Energy
September 2011

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Please state whether you would like ACER to treat your contribution confidentially. If yes, please provide a non-confidential version of your answer.

EDF Energy's response may be published.