ERGEG Pilot Framework Guidelines on Electricity Grid Connection

EURELECTRIC response to ERGEG public consultation
(Ref: E09-ENM-18-04) and specific questions

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Joint EURELECTRIC paper with the input from WG Thermal, WG Wholesale Markets & Trading and WG Distribution Customers and Operations.

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KEY MESSAGES:

- EURELECTRIC welcomes the Pilot Framework Guidelines on Electricity for Grid Connection (FG) as a contribution towards the single European electricity market strongly supported by EURELECTRIC.

- EURELECTRIC recognises harmonisation of the connection requirements for generators at the EU level, or as an interim step at the ERGEG regional initiatives, as a key factor in this process in order to have a level playing field amongst all generation companies and technologies.

- EURELECTRIC supports the development of standardised minimum requirements for connection for grid users outlined in the draft FG. In our view, FG should indeed stipulate development of uniform criteria, based on technical characteristics of the generators, for technical requirements of the connection, behaviour of the generator when facing disturbances, requirements and incentives concerning ancillary services etc.

- The draft FG deals only with technical requirements for grid users. Harmonisation of cost allocation principles, grid access rules and rules for application for connection will also be needed if an integrated EU market is to be established.

- We believe connection and access are two well differentiated issues that need to be addressed in two different Framework Guidelines in order to identify them correctly and assign the right responsibilities.

    - Connection is the process by which a generation or a consumption facility may be connected to the existing network. Therefore, connection procedures involve the technical conditions/requirements that should be applied for all the lifetime of the connected facility. They are related to the network and security of supply. Even so, efficient cost allocation should be also considered in order to prevent cross subsidies, stranded investment or windfall profits for the incumbents while guaranteeing the quality of the supply for the consumers.

    - Access to the network gives a right to deliver (or take) energy to/from the grid. The grid should be able to absorb/deliver all the energy produced/consumed for a generator/consumer at any time even though the energy acquisition will in practice depend upon the market and network operator constraint management. Access to the network should hence guarantee non-discrimination between the market agents and should not hamper market integration for any new entrant.

- EURELECTRIC strongly favours non-discriminatory rules on grid connection for all generators and types of power plants. Where possible, market approaches should be used for the provision of ancillary services.

- EURELECTRIC appreciates that with setting the framework for specific grid users (Chapter 3) the FG is already preparing for the envisaged change of production structure with stronger roles of intermittent and decentralised production and increased role of DSOs in securing grid stability in cooperation with TSOs.

- The FG and associated Codes should focus primarily on new generating plants. To avoid damaging investor confidence, existing connection arrangements should not be changed unless there is an overriding system need. It is very important that any new or substantially revised standard should demonstrate socio-economic benefits in order to justify compliance costs.

- Considering the implications of the Network Code for European DSOs, EURELECTRIC deems important that the monitoring of network code compliance with respect to the obligations and activities of DSOs should lay with DSO competent supervision agencies, i.e. National Regulatory Agencies, rather than (TSOs).The latter should also be responsible for any envisaged corrective measures in case of discrepancies between the national and European codes.

- EURELECTRIC believes that generators as well as DSOs should be effectively involved in the development of connection rules. This would allow a smoother transition to a new network code.

- Further in the process ENTSO-E should organise a transparent consultation on the grid codes with all the stakeholders. The consultation should be based on a comprehensive impact assessment.

ADDITIONAL COMMENTS:

Adaptation of existing arrangements to the network code

Point 1.6 of the Public Consultation Paper sets forth the obligation to amend all relevant clauses in contracts and/or relevant clauses in general terms and conditions relating to the connection of grid users to the electricity grid, in accordance with the terms of the network code, and establishes that this requirement shall apply regardless of whether the relevant contracts or general terms and conditions provide for such amendment.

EURELECTRIC is extremely concerned by the proposal that existing connection agreements could be retrospectively changed by one party to the agreement, the TSO. This is likely to promote uncertainty and reduce investor confidence, which would be particularly damaging in an industry involving large capital investments for long-lived assets. Any suggestion that potentially costly new requirements could be imposed in the future will make generators more cautious about further investment. In the case of older plant, changes in the connection regime could even prompt generators to close capacity, with damaging impacts on security of supply. In EURELECTRIC's view, additional requirements should not be imposed on existing generators unless there is an overriding system need which is fully justified by the TSO.

Transmission and Distribution relations

The introduction of network codes is likely to lead to new and/or more onerous requirements being placed on DSOs. We hence deem it important that any reasonably incurred additional costs required to comply with new network code(s) are fully funded by the grid tariff.

We would like to draw ERGEG's attention to the fact that the name "grid" is used in the scope of the document for the Transmission grid only and it is also stated that the code *"will be applied by electricity transmission System Operators*" without any reference to DSOs. But in other parts of the document, the term grid is used indistinctly for Transmission Grid and Distribution Grid. For example paragraph 3.3.1. should clarify if "connecting a consumption unit to the grid" means only the Transmission grid or also the Distribution grid. Overall, the document should clarify when the term "grid" is considered as Transmission Network and when it is Distribution Network.

In paragraph 3.2.1. specifies that *"the network code(s) shall set out necessary requirements and procedures to be followed by DSOs when connecting distributed generation to the grid"*, and paragraph 3.2.3. mentions that *"the DSO should be assigned the responsibility for transposing the requirements set by the TSO (or DSO)"* . Lastly paragraph 3.2.4. states that "The network code(s) shall set the requirement for DSOs to execute (…) the instructions given by the TSO." We consider that these paragraphs are underpinned by the conviction that DSOs, who are also networks operators, are mere executors of the decisions and instructions given by a TSO, who in turn do not have any distribution grid to be responsible for, and therefore have no right to have their own Distribution grid code.

EURELECTRIC believes that all provisions concerning DSOs (i.e. connection of distributed generation, flow of information between DSO and others) in the Network Codes to be adopted according to this FG should be jointly elaborated and agreed between TSOs and DSOs. As DSO do not have a formal role in the development process of the Network Codes this step is important to clear possible inconsistencies and contradictions in the Network Code at an early stage and to safeguard the later implementation of the related Network Codes.

This should be taken into consideration in the whole document, clarifying if there is going to be different guidelines for connection and access to transmission and distribution grids. Alternatively, if these guidelines also apply to the distribution grids, the DSO should be recognised as a grid operator, not a "subsidiary" of the TSO in their own grids.

In paragraph 2.4, where it's said that "criteria must be agreed by adjacent TSO and DSOs for defining units as significant" is perhaps too restrictive to implement. It could be modified into "criteria should be developed considering the proposals and needs of adjacent TSO and DSO…"

Furthermore, the grid codes for DSOs and TSOs should be drafted in a consistent manner and allow generators opting for the most appropriate, from an economic and technical point of view, solution to connect their installation (e.g. a new wind energy farm or a cogeneration plant can be in principle connected to the medium voltage or the high voltage grid).

Finally, the code does not mention any requirements related to the grid capacity studies the TSO / DSO has to perform before the acceptance of a new connection.

Likewise, EURELECTRIC considers that the real-time information sharing, special requirements for critical grid situations and other exchange of information needed for the operation of the grids, should be included in this section.

ANSWERS TO SPECIFIC QUESTIONS OF THE CONSULTATION

General issues

1. Are there additional major problem areas or further policy issues that should be addressed within the Grid Connection Framework Guideline?

Although in general EURELECTRIC considers the scope of the draft FG quite comprehensive, there are a number of important omissions:

- Requirements for TSOs and DSOs are not defined. Roles of TSOs and DSOs should be clearly set out and described in a detailed way; it must be clarified

what they have to provide. Therefore, the codes should include obligation for TSOs, too, such as transparency on network status.

- Alongside the technical aspects of grid connection, we believe that the FG should address the topic of grid connection cost allocation. Harmonised rules should be developed to allocate connection costs, network reinforcement costs and constraint management.

- The FG should also require development of cost effective criteria for a safer connection to the network that will address among others the following questions:

    - When is network reinforcement preferred to constraint management?
    - Who will bear the cost?
    - Which are the economic incentives for an efficient solution?

- As this FG is already at an advanced stage of drafting, there may be advantages in dealing with these commercial issues in a future Guideline. If the current text is expanded to include these issues, EURELECTRIC would like to see a revised impact assessment and further consultation on the issues.

- As mentioned earlier, the grid access rules should also be subject for harmonisation and should be tackled in a separate FG. In this context, it is important to require from the TSOs a more detailed and harmonised specification of conditions under which the principles of “priority dispatch” and “guaranteed access” for RES (Directive 2009/28, Article 16) should apply in order to achieve a consistent and non-discriminatory application across all EU TSOs. The same applies to the “appropriate grid and market related operational measures to minimise the curtailment of electricity produced by renewable energy sources”.

- The issue of impact assessments and cost-benefit calculations is only briefly addressed in section 1.1 in connection with minimum requirements for existing installations. It should be stated in the FG that impact assessments and cost benefit calculations are obligatory for any network code, which substantially modifies or changes existing standards. Standards should only be changed or newly introduced if a clear socioeconomic benefit can be demonstrated.

- To ensure a broad discussion on the necessity and benefits of the potential changed standards, both the impact assessment and the cost benefit calculation (including the data) should be transparent and subject to consultation.

2. What timescale is needed to implement the provisions after the network code is adopted? Is 12 months appropriate or should it be shorter or longer?

It should be longer than 12 months, given the timescales for specifying, procuring and building power plants. Therefore, EURELECTRIC believes that a minimum transitory period of 24 months is appropriate since the development of the grid codes will take time and resources. Therefore the timeline should be flexible and adapted to the progress of the code development.

3. Should harmonisation of identified issues be across the EU or, perhaps as an interim, by synchronous area?

EURELECRIC supports harmonisation of the connection requirements for generators optimally at EU level, if not at least at a level of ERGEG regions, or by synchronous area as an interim step.

We believe that there is a need for the definition of categories of requirements with a clear and homogeneous indication of the kind and size of generation plants which have to comply with the Network Code.

It is important that the common European network code fulfils the common minimum standards and elaborate harmonised principles in the areas of cost allocation and congestion management. National derogations should normally be avoided, except in case of strictly technical matters or due to system security reasons.

A top-down process is needed since a bottom-up process would take too long. Different rulings on TSO level would result in discrimination and competitive distortion. However, it has to be acknowledged that the mechanisms of reserve capacity may differ from TSO to TSO and that adaptation would take time.

In addition, as mentioned above, EURELECTRIC believes that harmonisation should also cover cost allocation principles and grid access rules in order to establish a single European electricity market.

Grid users related aspects

4. Should the requirements apply to existing grid users? How should it be decided? To which existing users should the requirements apply? How should timelines for transitional periods be set? Who should bear any costs of compliance?

In general, they should only apply to new power generating facilities and to those which have been significantly modified. As a general rule there should be no requirement for full compliance for existing power plants. However, if the relevant TSO decides that an upgrade becomes necessary contrary to the general exemption rule due to system security, then it is the TSO or the grid owner who should carry the cost for the upgrade.

By the same token, we consider that, to avoid imposing a disproportionate burden to the existing grid users, it should be necessary to set out:

- On the one hand, the obligation to adapt the existing connecting installations only when the installation is going to be substantially modified. Moreover, we think that the transitory system should lay down adequate time limits should be established to guarantee that existing grid users have enough time to adapt their installations.
- On the other hand, exceptions for installations that have a limited residual life time or load factor and are not being to be modified.

The different grid users should be targeted as identified in the consultation document. Compliance costs should be borne by those who ultimately benefit from the standardization of the minimum requirements, from the enhanced exchange of information between parties and from improved coordination. For example, requirements that enable an improved grid operation and more efficient grid investment benefit all network users and should be funded through network tariffs accordingly. Other requirements that reduce the costs of system and ancillary services, for instance, should be funded by those network users who are willing to provide those services for a given price or who would, otherwise, have to pay higher bills for those services or incur in the loss of revenues. Where possible market approaches rather than mandatory standards should be used to tackle connection issues.

With regards to the scope of application of the grid code, we believe that the code for large conventional power plants should be applied as binding only for transmission network. Moreover, as foreseen in the FG, specific rules should apply for large-scale intermittent generation, distributed generation, demand response/ large scale consumption units as they will get an increasing role in the future power production and consequently in grid security. DSOs have to get the powers to enforce additional requirements for these latter installations in order to be able to fulfil their enlarged duties.

Grid codes should contain a minimum size for generation unit where the grid code should be applied as binding. In reality only large generation units may have influence on TSO level. Smaller units that will be connected to distribution grids (which might be referred as distributed generation) have no influence and should be left outside the scope of this grid code. However, it is very important that there is a special grid code describing technical requirements for generation units to be connected to these grids. We consider that in the development of distribution network codes, the DSOs should have a major and key role.

Covering of costs of new requirements should be decided with involvement of the regulators as any remaining costs for TSOs and DSOs have to be recovered through grid fees

5. The framework guideline identifies intermittent generation, distributed generation and responsive demand as requiring specific grid connection guidelines. Is it appropriate to target these different grid users? How should the requirements for intermittent generation, distributed generation and responsive demand differ from the minimum requirements? Is there a need for more detailed definition / differentiation of grid users?

FG appropriately suggests specific grid connection guidelines for large scale intermittent generation, distributed generation, and responsive demand. Intermittent and distributed generation represents a challenge for the grid. Therefore, the standards for intermittent and distributed generation should be close to the minimum requirements.

For smaller generators factory test or type test can be more cost effective than on site commissioning test and therefore it should be considered if it should be allowed. As new generation technologies evolve and play an increasing role on generation, it is important that there is a room for development of the requirements. e.g. in case of distributed generation.

Implementation

6. Is it necessary to be more specific regarding verification, compliance and reinforcement?

No comment.

7. What are the key benefits and types of costs (possibly with quantification from your view) of compliance with these requirements?

The overall benefit is that harmonised requirements will ensure equal terms for producers operating in the same regional (or ultimately EU) market. This will increase system security and will facilitate the integration of intermittent and distributed generation. It will also give easier investment decision concerning new installations, as industry needs to comply with just one standard. If also the cost allocation principles are harmonised, this will ensure level playing field for generators.

8. How should significant generation and consumption units be defined?

All new generation units larger than a certain threshold, e.g. 50 MW_{el} should have to meet the requirements of the grid connection guidelines. Such threshold should be defined in the Network Code.

"Insignificant" demand units are important to the long-term smart grid concept and should be dealt with in a separate network code.

9. For what real-time information is it essential to improve provisioning between grid users and system operators? Do you envisage any problems such greater transparency? What are the costs (or types of costs) and benefits you would see associated with this?

From generators` perspective:

The existing transparency requirements large grid users have to comply with are already describing some real-time information which has to be delivered to the TSO. However, more real time information including explanations on the use of the grid from the TSOs should be made available as the use of the grid affects prices and cross border capacities.

Each additional requirement has to be in line with this ruling. Before requiring additional transparency a cost-benefit analysis has to be made and confidentiality of data has to be ensured.

The cost of increased transparency for the generators much depends on the reporting schemes chosen. These should be ideally automatic, simple and standardized at the EU level (or at regional level as an interim step) double reporting must be avoided.

From DSOs' perspective:

Real-time information exchange should only be required if such information is really necessary to secure system stability. For that reason real-time information exchange could be needed for parameters e.g.:

- active power in feed/withdrawal
- reactive power in feed/withdrawal
- wind speed (for wind generators)
- solar radiation (for photovoltaics)

With increasing feed in from distributed generation connected to the distribution grids, there is also an increasing need for real-time information to the DSO who will then give bundled information to the TSO.

General

The management and handling of such large amounts of information constitutes a real challenge with regard to technology and costs. R&D for appropriate solutions is currently under way as part of Smart Grid development. We are concerned that the requirement specified by the TSOs could be too extensive. Also the interaction with grid users needs to be elaborated. Currently it is not possible to specify costs. In general we talk about costs for information and process technology assets and costs for communication lines.

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