

11th Grid Connection European Stakeholder Committee (GC ESC) & Joint SO-GC ESC session

Friday, 14 September 2018 from 09:00-16:00
 ENTSO-E, Avenue de Cortenbergh 100, Brussels 1000

Draft Minutes

Participants			
Uros	GABRIJEL	ACER	Chair
Jakub	FIJALKOWSKI	ACER/E-Control	
Marco Savino	PASQUADIBISCEGLIE	ARERA	
Elaine	O'CONNELL	European Commission	
Maria-Eugenia	LEOZ-MARTIN-CASALLO	European Commission	
Colin	KUEHNHANSS	European Commission	
Blanca	ANDRES-ORDAX	European Commission	
Juan	Marco	EDSO for Smart Grids	
Manuel	JAKEL	EDSO for Smart Grids	
Ralph	PFEIFFER	ENTSO-E	
Knud	JOHANSEN	ENTSO-E	
Ioannis	THEOLOGITIS	ENTSO-E	
Sonya	TWOHIG	ENTSO-E	
Stela	NENOVA	ENTSO-E	
Emilie	MILIN	ENTSO-E	
Robert	WILSON	ENTSO-E	
Kristel	ROMEO	ENTSO-E	
Marc	MALBRANCKE	CEDEC	
Florentien	BENEDICT	CEDEC	
Luca	GUENZI	EUTurbines	
Klaus	OBERHAUSER	VGB Powertech	
Eric	DEKINDEREN	VGB Powertech	
Sebastien	GRENARD	EURELECTRIC	
Pierre	CASTAGNE	EURELECTRIC	
Garth	GRAHAM	EURELECTRIC	
Pavla	ERHARTOVA	Europex	
Mike	KAY	GEODE	
Mustafizur	RAHMAN	EUGINE	
Michaël	VAN BOSSUYT	IFIEC	
Toma	MIKALAUSKAITE	ORGALIME	Via webstreaming
Brittney	BECKER-ELZAREI	EASE	
Bernhard	SCHOWE-VON DER BRELIE	EFAC	

Joint SO-GC ESC session

Friday, 14 September 2018 from 09:00-10:30

1. Opening

1.1 Welcoming address and Draft Agenda

The GC ESC Chair Uros Gabrijel (ACER) welcomes the participants to the Joint SO-GC ESC session. The agenda is approved with an additional point on exhaustive and non-exhaustive requirements under AOB.

1.2. Review and approval of minutes from previous meeting

The minutes of the SO-GC ESC joint session are approved (available [here](#)).

1.3. Follow-up actions from previous meeting (available [here](#))

1. Action 1: Regarding the question on measurement precision of frequency and the definition of insensitivity in SOGL and NC RfG, Kristel explains that SO GL sets the requirements for FCR providing units and FCR providing groups, this involves both new and existing generation with the aim to provide FCR. Complying with the properties required for FCR in SO GL and with any additional properties or requirements that TSOs have the right specify on synchronous area level and/or on national level, is mandatory for PGMs wishing to provide FCR; this does not mean that the requirements of NC RfG retrospectively apply to existing units as a precondition for grid connection. SOGL gives the right to the TSOs to define additional properties of FCR, provided that the ranges defined in NC RfG are respected. Garth Graham (Eurelectric) would like to see in the Active Library further information regarding the technical requirements for RR and FRR. **ENTSO-E will confirm at the next meeting whether it is possible to provide this information.**

2. ENTSO-E has looked into the request to provide data and trends on inertia and instantaneous non-synchronous generation in the CE area and consolidated figures on low load situations. Historical data is not available in a meaningful manner to allow for comparison as the algorithms used behind were different. ENTSO-E proposes to start tracking as of January 1, 2019 the data and trends on inertia in a consistent way with a view to providing a consistent baseline for comparison and better understanding. The ESC welcomes this proposal. **ENTSO-E will take the suggestion to collect historical data where possible already from 2018 and will report in the December ESC the feasibility.**

3. ENTSO-E is invited to provide a European overview of the countermeasures that TSOs are considering in application of NC RfG requirements (countermeasures for avoiding higher values for RoCoF during high RES production, Recital 25 of the NC RfG). Such countermeasures will be included in the system defence plans. **ENTSO-E will look into gathering the information as the system defence plans are developed.**

4. Stakeholders who expressed interest to test the ENTSO-E NC app have provided their feedback and ENTSO-E is working on improving the app.

5. ENTSO-E will look into providing additional possibilities for stakeholder interaction, especially in the last phase of the TSOs' proposals development. The ESC recommendations will be taken into account for future proposals. ENTSO-E is looking into publishing the stakeholder comments on the ENTSO-E website after the end of consultation for all types of consultations.

2. Notice about the new EGs under the GC ESC

Ioannis Theologitis (ENTSO-E) provides an update on the set up of the 3 Expert Groups (EGs) that are established under the GC ESC umbrella to work on the topics of storage devices, hydro pump-storage modules, and mixed customer sites. Once the common ToR (boilerplate) and the individual content-related annexes are approved by the GC ESC, the EGs will commence to work. ENTSO-E has organized a number of preparatory calls with stakeholders to facilitate the setup of the groups and discussions on the ToRs. The boiler plate and the ToRs will be discussed in the GC ESC with a view to starting the work in October with kick-off meetings and subsequent monthly follow-up meetings.

The Chair clarifies that the reporting will be to the GC ESC; if cross-committee issues arise, they will be brought to the joint committee session.

3. NC High-level Implementation Group (NC IMG)

Sonya Twohig (ENTSO-E) provides an update on the latest High-level IMG meeting which took place on 4 July (agenda and conclusions are available [here](#)). The NC IMG mainly focused on the overall status of all NCs' implementation, the Transparency Platform development and improvements, NEMOs and governance, and on the topic on amendments of NCs regarding what would be an appropriate process to have. ACER would work on developing a proposal on how to develop the guideline for amendments further.

The Chair explains that ACER's view is that as a high-level principle, it would be useful to have a single point of entry regarding the submission of amendment proposals for both NCs and GLs.

Garth Graham (Eurelectric) recommends that in the next review process, it would help to reassure stakeholders if ACER and the EC were involved in deciding which areas should be addressed, or which amendments would be done.

Sonya Twohig (ENTSO-E) explains the ENTSO-E position on the amendments is that ENTSO-E supports a more agile and flexible process. The ESCs should be the appropriate forum to allow for the amendment requests to be discussed. For more technical amendments, ENTSO-E is to have a role to help with technical assistance, upon request of ACER. ENTSO-E would align its role with technical assistance where needed, and would discuss those with ACER. The same process should apply to both NCs and GLs.

Maria-Eugenia Leoz-Martin-Casallo (European Commission) clarifies that the Electricity Regulation does not make a distinction between stakeholders, and anyone can submit proposals for amendments to the NCs. The EC may decide even on its own initiative to propose an amendment. The Regulation is very flexible.

4. Update on ENTSO-E consultation processes and tools

Stela Nenova (ENTSO-E) provides an update on the ENTSO-E NC app under development and the process for the update of the ENTSO-E consultation policy document (slides [here](#)). The NC app is under testing and upon submission and approval by the AppStore, will be officially launched mid-October. The app includes searchable versions of all adopted NCs and GLs, the deliverables for each code, the ESC meeting documents, the ESC Issue Logger and the consultation hub. Stakeholders are invited to test the app and provide their feedback for improvement on a continuous basis.

Garth Graham (Eurelectric) suggests that it would be beneficial if the app also shows the implementation plan per NC as well as the documentation linked to the respective article. It would also be helpful to have the history and development of the codes, as well as the monitoring plan/active library to help stakeholders what their MS and their TSO have produced as well as be able to compare across different MS. It would be also useful to have the Friday roundup also available through the app.

ENTSO-E will be updating the Consultation policy document and is collecting preliminary stakeholder feedback on the initial ideas for improvements to the policy through informal exchanges and interviews with stakeholders by December. A full draft of the updated consultation policy document will then be prepared upon the adoption of the CEP and will be subject to formal stakeholder consultation and adoption for subsequent submission to ACER and the EC for an opinion.

Michaël Van Bossuyt (IFIEC) notes that it would be beneficial for stakeholder engagement of ENTSO-E, if before the drafting and each of the phases of developing a document, ENTSO-E would try to reach out to stakeholders for their views before the formal drafting.

- **All stakeholders who wish to provide preliminary feedback for the update of the Consultation policy document are welcome to contact ENTSO-E to arrange a discussion.**

5. AOB: Stakeholder topics

Regarding the topic on inertia and ENTSO-E's approach, Jakub invites ENTSO-E to consider the experience from Ireland where up to 60% of non-synchronous generation was in the system and the experience could be considered and extrapolated.

Knud Johansen (ENTSO-E) explains that it was discussed with Irish TSO if they could extrapolate to the central EU environment and the TSOs will discuss in a workshop and try to learn regarding similar cases for central European area.

Ralph Pfeiffer (ENTSO-E) highlights that the continental European system is very different from the Irish case, where frequency stability management is based on the loss of the largest generator, while in CE the TSOs need to consider a system split.

Knud Johansen (ENTSO-E) explains that regarding system split, SOGL Article 38 and 39 are only valid for normal and alert operation. It has to be further discussed when a reference scenario should be made and when it should not. SOGL covers only normal and alert state while NC ER covers blackout, and emergency states. The respective scenario as per SOGL should cover the needs for the alert operation.

Eric Dekinderen (VGB) explains that his major concern is that by imposing a RoCoF of 2Hz per second, some technologies are automatically excluded in the future as the number of single-shaft combined cycle units cannot support the 2Hz RoCoF.

6. Follow-up actions:

1. ENTSO-E will confirm at the next meeting whether it is possible to provide information on the technical requirements for RR and FRR through the Active Library.
2. ENTSO-E will take the suggestion to collect historical data where possible already from 2018 and will report in the December ESC the feasibility.
3. ENTSO-E will look into gathering the information regarding countermeasures considered by TSOs in the system defence plans.
4. All stakeholders who wish to provide preliminary feedback for the update of the Consultation policy document are welcome to contact ENTSO-E to arrange a discussion.

11th Grid Connection European Stakeholder Committee (GC ESC)

Friday, 14 September 2018 from 11:00-16:00
ENTSO-E, Avenue de Cortenbergh 100, Brussels 1000

1. Opening

1.1 Welcoming address and Draft Agenda

The GC ESC Chair Uros Gabrijel (ACER) welcomes the participants to the 11th GC ESC meeting. The agenda is approved with an additional point on exhaustive and non-exhaustive requirements under AOB, the state of play of PGMs that fall in between new and existing requirements, and VGB presentation on questions to ENTSO-E.

1.2. Review and approval of minutes from previous meeting

The minutes of the 10th GC ESC meeting are approved (available [here](#)).

1.3. Follow-up actions from previous meeting (available [here](#))

Action 1: Ioannis Theologitis (ENTSO-E presents the action tracker as set up by ENTSO-E to provide for easier follow-up of the GC ESC outstanding/open items over time. The file is available in the ESC platform [here](#) and includes as well as links to relevant documents and will in the future include the joint SO-GC ESC actions as well.

2. Bernhard Schowe-von der Brelie (EFAC) is providing a presentation on the questions raised regarding the processes for equipment certificates and accreditation in agenda item 6.

3. Regarding the application of Article 6.4 of the NC RfG to cogeneration units, the EC has provided their view on the interpretation of the article (available in the Issue Logger). The topic is within the scope of the Mixed Customer Sites Expert Group (EG MCS) and will be further addressed there.

4. The ENTSO-E's monitoring file on the status of implementation has been updated with available information to include relevant additions by different MS, and will be updated on a continuous basis by ENTSO-E to help keep track of potential changes to the national requirements over time.

5. The question related to ENTSO-E's monitoring role regarding the NC RfG has been updated in the Issue Logger with the answer received by the EC.

6. The next steps for the establishment of the EGs, the scope and the ToRs will be discussed in agenda item 3.

7. ENTSO-E has checked the proposals that came from stakeholders for the past survey on the EG topics, and provided responses to the various items. The topic is discussed in further detail under agenda item 4.

8. The ESC should be kept informed of the developments regarding the GB NRA question on the NRA decision procedures if the issue is raised with the NRA. The issue is marked as outstanding in the action tracker.

9. Stakeholders are invited to bring relevant examples on substantial modifications to ACER. The issue is marked as outstanding in the action tracker.

10. The EC has provided an answer to the ENTSO-E question on HVDC studies and data confidentiality raised at the previous GC ESC meeting. The answer is available in the Issue Logger.

2. Connection Network Codes implementation

2.1. Update from the ongoing Expert Groups: High Penetration, Compliance Monitoring

2.2. Forward planning for activities in 2018

Ioannis Theologitis (ENTSO-E) provides an update on the work of the Technical Groups on Compliance (CM) and High Penetration (HP) (previously called Expert Groups) (slides [here](#)). The HP group is working on producing a report by end 2018 on the topic of grid forming capabilities with a view to providing a contribution for setting up requirements in future grid/network codes. A draft report for consultation will be possibly available end of 2018. The ESC will be updated on the progress of the work. The CM group is following up with CENELEC regarding the EN50549-10 report. A presentation on the topic can be done at the next GC ESC by CENELEC. Regarding the monitoring of non-exhaustive requirements, the NC RfG monitoring list is almost fully complete with all the non-exhaustive parameters that are either approved or under approval. As DCC and HVDC deadlines for specifying the non-exhaustive requirements are in September 2018, more complete information will be available in the course of September.

- ENTSO-E will provide further updates regarding the implementation on NC RfG, DCC and HVDC non-exhaustive requirements at the GC ESC in December.

3. Creation of new EGs

3.1. Report on the process of nomination of experts and drafting the ToR and Annexes

3.2. Approval of the EG ToR (Boilerplate)

Ioannis Theologitis (ENTSO-E) explains the process for the setting of the EGs (slides available [here](#)). ENTSO-E took on board the input of stakeholders, worked on the boilerplate ToRs and will plan separate meetings for each EG, as well as proposes to organize in early 2019 a joint meeting with all EGs to share developments that might be relevant.

Eric Dekinderen (VGB) and Garth Graham (Eurelectric) welcome and appreciate the very high quality of work done to organize the EGs, the stakeholder interaction during the process and the organization.

Ioannis Theologitis (ENTSO-E) introduces the structure of the boilerplate ToRs which is aligned with the ESC ToRs and further complementing the specific workstreams (document available [here](#)). The separate annexes include the details for each EG's scope and objectives, work and membership.

The Chair explains the most recent changes introduced for the alignment with the GC ESC ToR. Some elements concerning the obligations of the ESC were removed from the draft EG RfG ToR and will be put in to the GC ESC ToR later this year. The language was also aligned between the EG boiler plate and the ESC ToR, e.g. regarding the word 'decision' which is not in the GC ESC ToR and a reference to "recommendation" is used instead. Regarding the membership of individual expert groups, the proposal is to have similar arrangements as in the ESCs, with the limited number of seats to keep the meetings efficient. For certain EGs, some additional experts will be needed to help informing the deliverables of the EG, so a change is proposed to allow external experts to be invited in the meetings, where needed and upon an invitation by the chair/vice-chair.

The boiler plate is approved by the GC ESC. If issues come up later, they can be resolved through a change of the EG ToRs.

- **The Chair will make proposals to change the GC ESC ToR by the next GC ESC meeting to put more focus on obligation of the stakeholders concerning the provision of meeting materials and to introduce the ESC interactions with the EGs.**

3.3. Approval of the Annex on the Definition of storage devices

Emilie Milin (ENTSO-E) explains the objectives, tasks, and deliverables of the EG on the definition of storage devices (slides available [here](#)) and the next steps for the EG (slides [here](#)). So far, the storage devices are not in the CNCs, and there are lots of questions on how to consider the devices in the future. There are no further comments to the proposal and the title of the EG.

The GC ESC approves the ToRs of the EG on storage.

3.4. Approval of the Annex on the Requirements for hydro pump-storage modules

Ralph Pfeiffer (ENTSO-E) explains the objectives, tasks, and deliverables of the EG on hydro pump-storage modules as per Article 6.2 of the NC RfG (slides available [here](#)) and the next steps for the EG (slides [here](#)). The EG will look into the specific characteristics/constraints for this kind of power generating modules for the various types of operation modes (generation, pumping, synchronous compensation), which may have impact on the connection requirements as defined by the NC RfG with the aim to learn from technical expertise and identify possibly improvements to NC RfG. The clarifications could result in proposals for amendments, and if there is common understanding of these, they can be used later as an agreed proposal by the GC ESC.

Ralph Pfeiffer (ENTSO-E) proposes to allow the possibility of EGs to benefit from the experience of external experts, not members of the EU associations, in case that is deemed beneficial for the work of the group and proposes for the GC ESC to decide if those can join a specific EG on either an ad-hoc basis or temporary basis.

Based on the discussion, the Chair concludes that in such cases, the external expert invitation as described in the EG RfG ToR can be used. The access to the SharePoint environment can also be granted on a temporary basis. The chair and vice-chair are invited to report back to the ESC if the participation has been positive and fruitful.

The GC ESC approves the ToRs of the EG on hydro pump-storage modules.

3.5. Approval of the Annex on the Clarifications about mixed customer sites with generation, demand and storage and definition of system users

Robert Wilson (ENTSO-E) explains the objectives, tasks, and deliverables of the EG on mixed customer sites with generation, demand, and storage, and definition of system users (slides available [here](#)).

The chair explains that the question regarding the treatment of small PGMs on the site of big ones wasn't addressed fully from ENTSO-E's side so it is brought here to be assessed by the EG. He presumes the EG will look into banding and existing national practices and deliver an assessment on how this has been tackled and make recommendations.

Robert Wilson (ENTSO-E) confirms that this is the intention of the work of the group.

Marco Pasquadibisceglie (ARERA) wonders how often there are actually cases where a PGM is connected to a higher than usual voltage level.

Ralph Pfeiffer (ENTSO-E) explains there are some real cases for example in the Alps in some remote locations where there is no MV network and then the PGM is connected to the high voltage level while the generator is of a size that would typically be connected to the MV network. Such cases are more of the exception in very specific circumstances but they have come up in the discussions on whether the generator on site should be assessed based on internal or external network connection so this is one of the questions to look at. Such exceptional cases are not mixed customer sites (so the preference is to keep them out of the EG work); but in the next steps it can turn out that the conclusion of the EG work could apply to these generators. The idea is to still make use of the outcomes of the EG but without widening the scope to cases that are not mixed customer sites. Mike Kay (GEODE) points out that the name of this EG is a misnomer. It was always the intention when the issue was discussed at previous ESCs that these cases would be reviewed as part of this work. It is inappropriate now to exclude them on the basis of the arbitrary name assigned to the EG.

Michaël Van Bossuyt (IFIEC) explains that there can be cases of small PGMs on large consumer sites in addition to cases of such small PGMs on generator sites, so this aspect should be also integrated in the scope of the EG work.

- **The Chair concludes the point regarding treatment of small PGMs on the site of large generator plants or large consumer plants should be added to the ToRs of this EG. In addition, the ESC agrees that the cases of a small PGM which are trapped into contractual arrangements for above 110kV is similar, so this point will be kept in the target of the work as well.**

Robert Wilson (ENTSO-E) explains those aspects will be covered and explains the changes that have been agreed with the EG members in the preliminary call to define the scope of the EG, and explains the next steps in the work of the group (slides [here](#)).

Michaël Van Bossuyt (IFIEC) recommends that it would be useful to discuss some MS solutions that have been established and contact the experts from those MS to share their experiences with the group. The chair of the EG would be the one taking up the initiative to invite such experts where needed.

Ioannis Theologitis (ENTSO-E) recalls that the process of sharing national examples has started in previous meetings of the GC ESC and the intention is to build upon the national examples from the members of the EG and expand those to include additional experts' inputs where needed.

The Chair concludes that the nominations for the EG members will take place according to the approved boilerplate ToRs and welcomes the good work that has started with the EGs.

The GC ESC approves the ToRs of the EG on mixed customer sites.

Garth Graham (Eurelectric) recalls that there is a reference to derogations, as per Article 61.1 of RfG which requires NRAs to submit to the EC their criteria for granting derogations within 9 months after entry into force. The EC may require the NRA to amend the criteria. He would welcome if more visibility on the criteria for derogations could be provided, as well as on any amendments proposed by the EC, and how they have been addressed.

The Chair recalls that ACER is working on launching an IT tool to serve as a record of all decisions on derogations and their revocations as well as criteria for derogations. The software is currently under testing by the NRAs. ACER will take this suggestion to go live with the part on derogation criteria as adopted by every NRA or entities designated by the MS earlier than originally planned in order to support the transparency.

- **Once available, the information on the derogation criteria and decisions on derogations and their revocations will be publicly available via ACER IT tool.**

4. List of additional topics for EGs that have been received during the respective survey

Ralph Pfeiffer (ENTSO-E) presents the list of additional topics and questions as brought up by Eurelectric and VGB and how ENTSO-E intends to treat them (list available [here](#)). The issues which have already been tackled in the GC ESC or earlier ENTSO-E documentation and/or are too narrow in scope to be the subject of additional expert groups should be addressed through the Issue Logger, allowing possibility for everyone to provide their own views on them as well.

Regarding the question on the gap between frequency ranges and time periods of NC RfG and the objective of frequency quality in SOGL (annex III), and the question on ensuring a fair effort sharing for frequency control between countries in operations, ENTSO-E will first coordinate internally with its grid connection and system operation experts to elaborate and assess existing materials on the topics. More information will be shared in the coming meeting (s) as well as possible suggestions on how to proceed with next steps and address those topics.

Regarding the question on mandatory requirements vs market principles, it was argued by stakeholders that if there is a need, the market would provide the needed services. ENTSO-E produced an FAQ on this issue during NC RfG drafting available [here](#). The discussion can be further pursued through the Issue Logger.

On the question of max voltage for 400kV and the inconsistency with IEC standards, ENTSO-E has sent a letter to the IEC explaining the problem and first contacts have been made with the IEC. Questions regarding dielectric problems and switching capabilities might also be covered in future discussions with the IEC on this topic.

The VGB question on deadband and insensitivity has been [answered](#) at the GC ESC in March 2018 and ENTSO-E will revert with the SO perspective.

Regarding the question on FRT capabilities and pre-fault/post-fault conditions, the topic has been elaborated in the FRT requirements in 2013 when ENTSO-E published a document giving implementation guidance and it is available on the ENTSO-E website [here](#). Regarding the value of 150ms or above, FRT is non-exhaustive and parameters need to be fixed at national level.

Regarding automatic reconnection, Eric Dekinderen (VGB) explains that the VGB concern is that the ranges are too small to be used in case of restoration of the grid and that the window range of 200mHz and waiting time as defined make it impossible for PGMs to connect to the grid in case of a restoration process.

Ralph Pfeiffer (ENTSO-E) explains that the frequency is so small as it concerns automatic reconnection without any kind of authorisation. In the case of grid restoration, the frequency deviations are larger but when the system is in such state and with automatic reconnection there is no control of what is happening, so the automatic reconnection is prohibited. There is an ENTSO-E paper on this topic ([here](#)) – the assumption is that automatic reconnection is when the system is in normal operating state. The question can be followed up through the Issue Logger.

Eric Dekinderen (VGB) explains that in case of a blackout, a larger power plant will start with blackstart facility but when there is a need to increase the load, smaller facilities can help but they also will reconnect automatically. If such stringent conditions are imposed for reconnection, it would be impossible to connect automatically so the reenergizing of the system will need to be postponed.

Ralph Pfeiffer (ENTSO-E) notes that a workshop could be organized to look at system defence plans and restoration issues and how it works as well as various approaches. Questions regarding the default settings and criteria set at national level and regarding a waiting time of 60s could also be looked at.

The question regarding the CHP of class D and whether it is excluded from Article 6.2 has been addressed in the GC ESC meeting in June 2018 and the MCS EG will further provide insights to it.

Regarding the question on Article 15.6.c.i: why a Member State has to verify the simulation by an authorised certifier and not the NRA, this is a regulatory item.

Marco Pasquadibisceglie (ARERA) provides additional feedback on the question for the certifier. The powers of the NRAs are different in each MS, so some NRAs have the power to verify the compliance test, and others do not. Each MS is given the possibility to decide on the best solution. MS may decide like in ER NC – when it is clearly specified, then the NRA has the power, when it is not clear, it refers to an appointed entity as it may be different in various MS; when it is not clearly referring to NRA, then it is the MS.

- **Regarding the question on Article 50 and why testing of reactive power of offshore installations according Article 48.6 is not foreseen, and the question regarding Article 62.2.e. and derogations' effects on cross-border trade, ENTSO-E is working on providing answers. The answers will be submitted through the Issue Logger.**

5. HVDC system interaction studies - confidentiality aspects

The EC has submitted a response to the ENTSO-E question on the HVDC system interaction studies, which is available for reference in the Issue Logger. The item is concluded.

6. Processes for equipment certificates and accreditation

Bernhard Schowe-von der Brelie (EFAC) provides an overview on certification provisions and principles within the NC RfG (slides available [here](#)). The NC RfG, Title III and IV introduce equipment certificates (EqC), to be issued by accredited certifiers, according to EC Regulation 765/2008 and the possibility for MS to choose an option for PGMDs to be issued by accredited certifiers. However, a clear picture on the certification scheme is missing regarding scope & restrictions, the definition on evaluation (like testing and model validation), transferability and conformity criteria, and responsibilities. The ENTSO-E IGD *Compliance Testing & Compliance Monitoring* has developed further provisions.

There need to be type testing reports issued by accredited test houses as per ISO/IEC 17065 accreditation standard on conformity assessment on products, services and processes. There can be equipment certificates for units which generate or consume electrical energy independently of other units deployed in a power generating or demand facility (like wind turbines, PV, converters) or for components which can be part of an electrical generating unit / module / facility and that are used for providing controllable regulating active and reactive power (farm controller, protection relay etc.). As per the ISO/IEC 17065 standard, “the overall aim of certifying products, processes and services is to give confidence to all interested parties that a product, process or service fulfills specified requirements.” Another measure for evaluation in addition to the type testing is the equipment’s simulation model, which does not require a testing house, but is conducted according to defined procedures. The third type of evaluation is the manufacturer’s declaration, which provides further functional and design description of the equipment, technical data and/or characteristics, that can or will not be tested nor simulated. There are some certification programs in different countries (Spain, Germany, etc.) but there is no European-wide co-ordinated programme so far. Only the CLC 50549-10 will be addressing type testing which is not sufficient for a product certification scheme while the conformity assessment should include a validated model as well as (non-measured) functional and design characteristics.

There are different program owners existing and EFAC is willing to promote an EU-wide certification scheme elaboration. Any certification program needs to be assessed by the national/European Accreditation (EA) accreditation body but there is a possibility for EA or the European Cooperation for Accreditation to perform such a central assessment of the credibility of certificate programs so this could help accelerate the accreditation on national level of Certification Bodies (CB). Any CB accredited by an European accreditation body should be accepted under the regime of EA (internationally via IAF) and must hold a valid accreditation with respect to the product specification (i.e. grid code), certification programme and evaluation scheme (testing/validation/simulation procedure) under consideration. EqC provide an appropriate measure to ensure grid code compliance. A few MS do have long-term experience with PGU certification.

Certification is always conducted with respect to a defined product specification, e.g. grid code, and certification needs a well-defined and accredited certification programme and underlying evaluation schemes. EFAC is willing to promote all harmonization processes, but needs active input from other MS. Bernhard Schowe-von der Brelie (EFAC) explains that the TSOs can identify in the different countries where and who could develop such certification programs. The process in Spain and Germany started with wind energy associations some years ago as they needed standards for testing and models and simulations, and these associations have lots of stakeholders and can serve as a platform to develop such programs, and can get in touch with EFAC to follow-up on this.

Bernhard Schowe-von der Brelie (EFAC) clarifies that with the issuance of a capacity certificate, a manufacturer provides evidence on the entire capacity of the equipment and if this is conforming with NC RfG, then a certificate dealing with the requirement can be issued, after which further assessment is done at the national level.

Knud Johansen (ENTSO-E) explains that in DK, a lot of effort is put into creating an ICRE certification regime for renewables and DK supports the development of an ICRE standard to facilitate this. However, clear product specifications are still needed in order to have compliance. Nowadays, 22 different standards are used around, and the ICRE regime will be extended beyond wind to also cover PV and small hydro. There will be a first meeting of ENTSO-E with the ICRE regarding the content of equipment certificates and what should be included in the NC RfG regarding the testing.

Mustafizur Rahman (EUGINE) explains that if at the national level one deviates from the European standard then from a manufacturer’s point of view, this requires a lot of additional time to comply with various national standards instead of investing time in developing the products. He welcomes some greater degree of harmonization for this aspect. Luca Guenzi (EUTurbines) and Garth Graham (Eurelectric) also support this as from a generator’s point of view this could save costs.

- **The Chair concludes there is a broad agreement on the need for harmonization and its benefits. Therefore, the GC ESC asks ENTSO-E to inform the TSOs of the invitation by EFAC on the process on harmonization of processes and schemes as explained in the slides, and asks ENTSO-E to disseminate the information (for example with other entities as well such as CENELEC WGs).**

7. AOB:

Questions by VGB:

Eric Dekinderen (VGB) provides some comments to the answers by ENTSO-E to the VGB questions which were raised at the GC ESC meeting on 8 March 2018 (slides available [here](#)), regarding treatment of answers to stakeholder questions,

FRT specifications and values for different types of generators in the CE area; treatment of CHP in Article 18.2.a in the NC RfG; simultaneous voltage and frequency deviation as per Article 16.2.a.ii.; and voltage ranges for offshore PPMs.

The Chair responds that regarding the process of treatment of stakeholder questions, the Issue Logger tool was developed to help bridge the gap between the meetings by allowing stakeholders visibility on the answers ahead of the next meeting, given the responsible party is able to provide the answer to individual questions in due time before next meeting. It is also possible to do this partially and upload ahead of the meeting an answer not fully covering yet all questions asked.

Eric Dekinderen (VGB) explains he has observed there were different values for fault clearance time proposed on FRT specifications in countries like the UK, FR, DE and wonders if this is consistent to the NC RfG as the TSO has the right to choose a value in that range but diverging values between Member States may create a market distortion for manufacturers?

Ralph Pfeiffer (ENTSO-E) explains that there is a provision on this in the EU legislation because the national implementation resulting in national standards shall be submitted for EU notification. This is now happening or will happen upon NRA approval of the values. The purpose of the EU notification is that the EC will look if there is market distortion or not in place. DG COMP checks this and the assumption is that if there is a positive notification, it is assumed that there is no market distortion.

Garth Graham (Eurelectric) recalls that regarding the notification to the EC, Elaine O'Connell (European Commission) had given this information at the previous GC ESC in June 2018 regarding all technical requirements submitted to the EC and MS. There is a period of 3 months to identify the cross-border effect, and the EC or an MS can make an assessment and address any issues if identified. If there is a higher standard, then that might mean a higher cost.

Ralph Pfeiffer (ENTSO-E) explains that regarding the cross-border impact, a granted notification is to be considered as evidence that there is no cross-border impact.

Eric Dekinderen (VGB) explains that for BE and FI the market share is very small and he thinks no manufacturer would develop an engine compliant to their national specifications. The main concern is that there will be problems with cogeneration SPGMs below 5 or 10 MW to be in line with these specifications.

Emilie Milin (ENTSO-E) explains that in FR there are different areas where the TSO requires a fault clearance time of 250ms to be withstood. Depending on the local area needs and characteristics, the time may be shorter or longer depending on the protection schemes.

Luca Guenzi (EUTurbines) explains in FR, there were some discussions in 2008 and 2010, because there is a difference in values for MV and HV, and characteristics of the grid that allow or not a machine to connect to the grid.

Garth Graham (Eurelectric) inquires if the French case is possible without derogation procedures.

- **The Chair concludes that the question regarding the FRT specifications and the impact of different values on the Internal Energy Market should be kept as an open issue, and the discussion on this can be pursued through the Issue Logger.**
- **The Chair concludes that regarding the question on voltage ranges for offshore PPMs, it should be addressed through the Issue Logger for the next GC ESC meeting.**
- **Regarding the question on IEC standards vs NC RfG and the possibility for TSOs to specify shorter periods of time for simultaneous voltage and frequency deviations, the Chair notes this will be kept in the assessment of additional topics for EGs in the future.**

Ioannis Theologitis (ENTSO-E) explains that some of the issues will be tackled through the Issue Logger. Some additional topics and questions will be taken internally to address the aspects that are left out. The issues in the table are assumed as tentatively addressed but if they are considered open at the time the current EGs are dissolved, ENTSO-E will rerun a poll on stakeholders' priorities to identify which issues are still pressing to be dealt with by EGs.

Luca Guenzi (EUTurbines) explains that there are some exhaustive vs. non-exhaustive requirements on frequency and the exhaustive ones have to be considered as final and integrated in the national connection rules. MS cannot add additional frequency ranges that exceed the values as indicated unless they ask for a derogation.

Ralph Pfeiffer (ENTSO-E) clarifies that regarding Article 13.1.a.2, the relevant system operator may agree on wider frequency ranges and these can be extended further through an agreement. Those procedures would apply for the site-specific requirements for a power generating facility owner.

Regarding the interpretation of Article 6.4 of NC RfG and its application to cogeneration units, the EC has provided a clarification through the Issue Logger tool. Luca Guenzi (EUTurbines) explains he still does not find the answer clear as to how the article applies to cogeneration units, and inquires if he can approach the EC for further clarifications.

- **The Chair concludes that the question regarding Article 6.4 and the treatment of cogeneration should be elaborated further by EUTurbines in the Issue Logger and will be brought to the EC for its view.**

Update on PGMs treatment as per the NC RfG

The Chair provides an update on the state of play of PGMs and MS actions for the PGMs that were trapped in the gap as not considered anymore as existing while the non-exhaustive requirements are not yet known. Considering PGMs purchased and connected between May 27, 2018 and 17 April 2019, ACER sent a questionnaire to NRAs and received a handful of answers. All responding NRAs will use NC RfG Article 4.2. last paragraph referring to the possibility for MS to provide that “in specified circumstances the regulatory authority may determine whether the power-generating module is to be considered an existing power-generating module or a new power-generating module.” 1 NRA is considering the issue a class derogation while the rest are considering treating the gap PGMs as existing PGMs.

Next meeting dates

The Chair invites ENTSO-E to prepare proposals for GC ESC meeting dates for 2019, in similar weeks as in 2018, with 2 meetings in Brussels and 2 in Ljubljana, back-to-back with the SO ESC before the next meeting in December, and in close coordination with the MESC & BSG meeting dates.

GC ESC	SO ESC	MESC
13 December, ENTSO-E	14 December, ENTSO-E	5 December, CEER, Brussels

8. Follow-up actions:

1. A presentation on the state of play of EN50549-10 can be done at the next GC ESC by CENELEC.
2. ENTSO-E will provide further updates regarding the implementation on NC RfG, DCC and HVDC non-exhaustive requirements at the GC ESC in December.
3. The Chair will make proposals to change the GC ESC ToR by the next GC ESC meeting to put more focus on obligation of the stakeholders concerning the provision of meeting materials and to introduce the ESC interactions with the EGs.
4. The point regarding treatment of small PGMs on the site of large generator plants or large consumer plants should be added to the ToRs of this EG. The cases of a small PGM which is trapped into contractual arrangements for above 110kV is similar, so this point will be kept in the target of the EG work as well.
5. Once available, the information on the derogation criteria and decisions on derogations and their revocations will be publicly available via ACER IT tool.
6. Regarding the question on Article 50 and why testing of reactive power of offshore installations according Article 48.6 is not foreseen, and the question regarding Article 62.2.e. and derogations' effects on cross-border trade, ENTSO-E is working on providing answers which will be submitted through the Issue Logger.
7. ENTSO-E is to inform the TSOs of the invitation by EFAC on the process on harmonization of processes and schemes as explained in the slides, and to disseminate the information (for example with other entities as well such as CENELEC WGs).
8. The question regarding the FRT specifications and the impact of different values on the Internal Energy Market should be kept as an open issue, and the discussion on this can be pursued through the Issue Logger.
9. The question on voltage ranges for offshore PPMs should be addressed by ENTSO-E through the Issue Logger for the next GC ESC meeting.
10. Regarding the question on IEC standards vs NC RfG and the possibility for TSOs to specify shorter periods of time for simultaneous voltage and frequency deviations will be kept in the assessment of additional topics for EGs in the future.
11. The question regarding Article 6.4 and the treatment of cogeneration should be elaborated further by EUTurbines in the Issue Logger and will be brought to the EC for its view.