

12th Grid Connection European Stakeholder Committee (GC ESC) & Joint SO-GC ESC session

Thursday, 13 December 2018 from 09:30-16:00
ENTSO-E, Avenue de Cortenbergh 100, Brussels 1000

Draft Minutes

Participants			
Uros	GABRIJEL	ACER	Chair
Jakub	FIJALKOWSKI	European Commission	Joint GC-SO ESC
Marco Savino	PASQUADIBISCEGLIE	ARERA	
Elaine	O'CONNELL	European Commission	
Maria-Eugenia	LEOZ-MARTIN-CASALLO	European Commission	Joint GC-SO ESC
Ralph	PFEIFFER	ENTSO-E	
Knud	JOHANSEN	ENTSO-E	Joint GC-SO ESC
Ioannis	THEOLOGITIS	ENTSO-E	
Pilar	MUNOZ-ELENA	ENTSO-E	
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Kristel	ROMEO	ENTSO-E	Joint GC-SO ESC
Michael	Wilch	EDSO for Smart Grids	
Marc	MALBRANCKE	CEDEC	
Alberto	BRIDI	CEDEC	
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Luca	GUENZI	EUTurbines	
Klaus	OBERHAUSER	VGB Powertech	
Eric	DEKINDEREN	VGB Powertech	
Srinivasa	RAJU ADDALA	EUGINE	
Adolpho	LOPEZ	EURELECTRIC	
Daniel	FRAILE	WindEurope	
Naomi	CHEVILLARD	SPE	
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Mike	KAY	GEODE	
Wouter	VANCOETSEM	CENELEC	
Michaël	VAN BOSSUYT	IFIEC	
Toma	MIKALAUŠKAITE	ORGALIME	Via webstreaming
Brittney	BECKER-ELZAREI	EASE	
Bernhard	SCHOWE-VON DER BRELIE	EFAC	

GC ESC session

Thursday, 13 December 2018 from 09:30-15:00

1. Opening

1.1. Draft Agenda

The GC ESC Chair Uros Gabrijel (ACER) welcomes the participants to the 12th GC SC session. The agenda is approved with no additional points.

1.2. Review and approval of minutes from previous meeting

The minutes of the 11th GC ESC are approved (available [here](#)).

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

1. Action 1: A presentation on the state of play of EN50549-10 by CENELEC is foreseen under agenda item 2.
2. Action 2: ENTSO-E will provide further updates regarding the implementation on NC RfG, DCC and HVDC non-exhaustive requirements in the monitoring Excel File at the Active Library. The topic is further addressed under agenda item 3.
3. Action 3: The proposals for changes to the GC ESC ToR are available in the list of documents for the ESC and are addressed under agenda item 5.
4. Action 4: The point regarding treatment of small PGMs on the site of large generator plants or large consumer plants has been added to the ToRs of the EG. The cases of a small PGM which is trapped into contractual arrangements for above 110kV is similar, has been kept in the target of the EG work as well. The topic remained in the respective Annex [here](#).
5. Action 5: The information on the derogation criteria and decisions on derogations and their revocations will be publicly available via ACER IT tool, which is expected to be live on 15 January 2019. A notification will be sent to stakeholders once the platform is available externally. The tool will be open for improvements once operational. It is expected to start receiving derogation decisions as of 27 April 2019.
6. Action 6: The questions regarding Article 50 and why testing of reactive power of offshore installations according Article 48.6 is not foreseen, and Article 62.2.e. and derogations' effects on cross-border trade, have been answered by ENTSO-E through the Issue Logger.
7. Action 7: ENTSO-E has informed the TSOs in the internal ENTSO-E's working group on Connection Network Codes (CNCs) and to all Network Code Link Persons i.e. experts on CNC implementation from all TSOs of EFAC's presentation.
8. The question regarding the FRT specifications and the impact of different values on the Internal Energy Market has been answered by ENTSO-E in the Issue Logger.
9. Action 9: The question on voltage ranges for offshore PPMs will be addressed by ENTSO-E through the Issue Logger -ENTSO-E is elaborating a draft reply but further discussions both internal and with stakeholders are needed. The answer will be submitted through the Issue Logger and is kept open till then.
10. Action 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 has been included in the list of additional topics for EGs in the future (list available on the GC ESC platform).
11. Action 11: The question regarding Article 6.4 and the treatment of cogeneration has been elaborated further by EUTurbines and ENTSO-E in the Issue Logger and has been brought to the EC for its view. The topic will be kept open.

2. Presentation about the European CENELEC Standard on compliance and the topic of temporary usage of equipment > 420 kV

Wouter Vancoetsem (CENELEC) provides an update on the ongoing work on the EN50549-1 and -2 standards regarding requirements on generating plants (slides [here](#)). Formal voting has taken place on 7 July 2018, and the documents have been ratified on 8 August. The next step is official publication of both standards, which is expected for 21 December 2018. The documents will be available at the national committees. Some changes in the final documents include a broader scope in relation to NC RfG, additional requirements for distribution networks and for stability of interconnected systems, among others. Regarding tests to demonstrate compliance (EN50549-10), Wouter Vancoetsem (CENELEC) explains that the focus has been first on requirements and type tests demonstrating compliance to requirements for the connection of generating plants in parallel with a LV or a MV distribution network. ENTSO-E experts have also joined the kick-off meetings in spring 2018. The RfG application date of April 27, 2019, was not considered a hard deadline for the -10.

Several guidance decisions have been taken regarding the tests to facilitate the standard implementation: the scope is open above 1MW without power limit. The test environment should be described flexibly enough to allow for efficient assessments for "small" and "large" units. The primary focus is on small issues, while complicated issues should be postponed into a second edition or an informative annex for discussion. The RfG type reference in the -10 is not mentioned, but only reference to -1 and -2. As -1 and -2 are written to cover RfG Type A and B -10 will cover A and B requirements. For units used in type C and D plants, the assessments (regarding -1 and -2 requirements) can be used. The -10 will only cover unit type assessment (terminals of the unit). The gap between the unit and the plant needs to be covered somewhere else. Where there is a product specific standard, covering the needs of a specific -10 clause, -10 will reference to this standard. Based on Annex C of -2 a, table will also be set up to provide an overview of the link between -10 test case and -1/-2 requirements.

CENELEC has launched a new proposal for a document regarding the tests to demonstrate compliance and has started work on the draft enquiry, with a view to finalizing the document by 2020. In the meantime, there is a need for equipment certifications. The -10 standard is set to help avoiding issues with compliance. Wouter Vancoetsem (CENELEC) clarifies that if stakeholders would like to buy those standards, they are available at the national committees.

Ralph Pfeiffer (ENTSO-E) explains that sometimes the requirements can be different for type C or D plants, so it cannot be concluded in general, that the compliance test for A and B can be applied to C and D.

Wouter Vancoetsem (CENELEC) clarifies that the scope of the document includes A and B units, but it does not exclude to use the document as a basis for further adaption to suit C and D types of units. Not all requirements for type A and B can be used for C and D, but the approach as such can be translatable.

Ralph Pfeiffer (ENTSO-E) notes that instead of using the assessment for type A and B separate procedures for type C and D should be used for the tests.

Wouter Vancoetsem (CENELEC) explains the objective is not to apply the requirements from A and B to C and D as the tests are on unit level. If FRT requirements are to be measured; one would test at the terminals of the unit; the focus is on the units. The unit is considered as defined by the manufacturer. If an equipment part is not included, then the test does not include it. However, this would imply additional work to ensure the transfer of the unit to the environment where the unit is implemented.

Wouter Vancoetsem (CENELEC) explains that regarding the question on temporary usage of equipment above 420KV, a letter from ENTSO-E was sent in September to receive further information about the approach and was discussed at the CENELEC TC8X plenary meeting on 21 November (slides [here](#)). In response, the IEC 60038 and IEC 60071-1 are horizontal standards in the IEC, and they have been used for decades as reference by many TCs. CENELEC regrets, that technical issues of this kind had not been solved at earlier stage in the drafting process of the EU Network Codes through deeper cooperation with Standardization Bodies.

In case of concerns about EU legislation, the issue should be considered rather at CENELEC than IEC level and the CLC TC8X can be used as a discussion forum to find solutions. The CENELEC view is that IEC EN 60038 reflects the actual market situation and equipment which is installed in electrical installations; so those should be taken into consideration. The transition from 220V to 230V and from 240V to 250V took 20 years because of equipment connected to that voltage. As next steps, different parties have raised the idea to have this topic on the agenda of the IEC/SMB/Advisory Committee on Transmission and Distribution (ACTAD) at its next meeting in December 2018. The TC8X will wait for a recommendation from ACTAD on this subject, if any, and a coordination meeting with all interested TCs and stakeholders can be expected in 2019.

Ralph Pfeiffer (ENTSO-E) explains that ENTSO-E has asked for a modification to the standards for both dielectric and switching capabilities in order to ensure that all relevant aspects are considered, and that the standard is fit for purpose. The requirements for temporary operation at high voltages is a system need. The expectation is that the standards are fit for purpose to the system needs and not vice-versa. In addition, if there could be a more cost-efficient solution available, then that should be considered as it is not a matter of technical feasibility. If someone says they don't trust the 420kV and purchase the 550 kV solution, that can work but it is not cost efficient. ENTSO-E endorses that a more cost-efficient solution should be found as it is very expensive otherwise, and products fit for purpose should be there.

Wouter Vancoetsem (CENELEC) agrees that standards should fit to system needs, and notes he expects that the standard fulfilled that purpose in the past. It is possible that system needs have evolved and a new situation is in place now, so it should be discussed how to tackle this.

Ralph Pfeiffer (ENTSO-E) explains that now the difference is not that there is a technical change but through the Network Codes it becomes legally binding while previously this hasn't been the case. People get more alerted about it so it becomes an issue in the new context.

Eric Dekinderen (VGB) agrees that this is not a problem in some places but if it changed, it will become an obligation in all countries in Europe. TSOs have the possibility to reduce voltage by changing reactive power as an alternative way.

Ralph Pfeiffer (ENTSO-E) explains that there is no really a controversy observed in the countries. He agrees that if it is temporary operation, measures need to be taken to handle the range. The SOGL says that TSOs shall endeavour to keep voltage in ranges; it can happen that voltage is higher, and if higher, then the effort has to be made to reduce it, but this also takes time so one would need a temporary capability of equipment to operate it. Existing standards are 20-30 years old, and things change over time.

Wouter Vancoetsem (CENELEC) explains that voltages are for reference in terms of permanent operation while the discussion is not about voltage level but about the definition of 'temporary.' The standard doesn't say anything about the duration; it just defines under-voltage limits for LV grids. The discussion is on what to be understood as 'temporary'.

Ralph Pfeiffer (ENTSO-E) reminds the RfG defines timing and duration. A compliance test should suffice. The standard already says that equipment shall be fit for temporary operation at high voltages so there needs to be a corresponding compliance test.

Wouter Vancoetsem (CENELEC) would welcome further cooperation with ENTSO-E on the issues raised.

3. Connection Network Codes implementation: Update from ENTSO-E's Technical Groups; Active Library / Monitoring Excel File Forward planning for activities in 2019

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 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 2019. The ESC will be updated on the progress of the work. The CM group is following up with CENELEC TC8X WG3 regarding the development of the EN50549-10 report, which is a CENELEC product. The ENTSO-E IGD on Compliance Monitoring has been considered as one of the inputs for the development of the -10 report. A meeting will be organized in first half of 2019 including all relevant stakeholders to discuss key aspects of a developed draft. It is expected that the work of the TG CM will conclude with a final workshop in 2019.

Ioannis Theologitis (ENTSO-E) explains the updates on the current status regarding implementation monitoring. The RfG monitoring list is updated with all the non-exhaustive parameters undergoing approvals or already approved. ENTSO-E is further following progress regarding the DCC and HVDC and further efforts for improvement are ongoing. Most of the submitted proposals have been collected and final approval is pending. More details on the proposals of the TSOs are available [here](#).

Stakeholders are invited to contact Ioannis Theologitis (ENTSO-E) in case they want to join specific EGs. ESC members welcome the updates provided to the table (monitoring file) and the effort by ENTSO-E is highly appreciated.

Daniel Fraile (WindEurope) welcomes the work done by ENTSO-E and highlights that it will be very challenging for the industry to comply by May 2019, as it seems everyone will be late. There is a lot of uncertainty on the process and on what goes to the NRA, what comes back etc. as stakeholders in some countries are not aware of the ongoing processes. From the industry's perspective, stakeholders find it challenging to be aware of the processes and if the proposals have been submitted to NRAs, approved etc. so it makes it very difficult to comply by May with all requirements and their validation. In some countries the process of certification is still under discussion; there is an accreditation process that will take some time. For the industry it is difficult to know how to test and validate equipment, as the time left for this process is much less than the original one year that has been initially foreseen. It is also not very clear if the proposals were discussed with stakeholders in the various countries.

Ioannis Theologitis (ENTSO-E) explains that the active library and the monitoring files provide complementary information, and some timelines refer to consultations in the national context. There are however different processes in each country as defined in the national processes. ENTSO-E can help to cross-check the data.

4. National Implementation of RfG - Wind Industry's perspective

Daniel Fraile (WindEurope) explains the findings of WindEurope regarding the process of stakeholder involvement in national implementation across Europe with respect to proposals on implementation, certification and validation processes (slides [here](#)). It appears that stakeholders are involved to various degrees in the processes and the stakeholder engagement in some countries is less than expected from WindEurope's perspective. While some countries have established formal consultation processes and workshops (56%), a number of others follow an informal process (19%) and 25% have not established a process at all yet, and the wind industry is willing to be part of these engagement processes. WindEurope would like to understand better as soon as possible ahead of the May 2019 deadline what the technical requirements are, when they will be published, how they will be certified and validated and whether there will be any general derogations for the industry or how the NRAs expect to deal with the delays.

The chair explains that regarding the question on transparency on implementation, there are rules on TSOs and an obligation towards the stakeholders from a monitoring perspective. ACER will look into this as well. When stakeholders informed the ESC of the gap between the units considered as new and old, ACER informed NRAs of the situation and of the possible mitigation actions. A number of NRAs followed this recommendation to define at national basis but not in all cases the NRAs are responsible for the approval of non-exhaustive requirements as proposed by the TSOs, and sometimes ministries are responsible for that. ACER can inform the NRAs of this issue as well. **The issue can be recorded in the Issue Logger and an answer can be published on this either before the next ESC or as available.**

Naomi Chevillard (SolarPower Europe) explains the solar industry is facing the same issue with regard to the definition of existing units.

Michaël Van Bossuyt (IFIEC) highlights that the same issues are observed for the DCC and less of HVDC.

Daniel Fraile (WindEurope) explains that even if the TSOs know the situation and agree with the industry to take more time to define the requirements, there needs to be legal certainty coming from a body with an authority regarding the application deadlines across the various countries.

Elaine O'Connell (EC) explains that the challenge is that the timing issue was raised at the time the NC was voted, it was discussed at the ECBC and MS felt they could not wait longer for the date of application of the requirements. The best way to address this is through NRAs and national implementation. MSs voted for this fully aware of this timing gap.

Eric Dekinderen (VGB) wonders about what is expected to happen in April 2019 if the non-exhaustive requirements are not published or specified in some MS, and whether the EC expects to do something.

Elaine O'Connell (EC) explains that the EC has the power of infringement, but if MS are moving as fast as they can to implement, that is also good. The EC wants to see full implementation as soon as possible and on time. If it is seen that this is not the case once the deadline has passed, then it has to be seen what the practical reality is in April. In the meantime, it is best to ensure coordination through NRAs.

Daniel Fraile (WindEurope) reminds that the deadlines for NRAs have already passed, and the situation requires actions else there will not be any new installations.

Michaël Van Bossuyt (IFIEC) explains that this problem concerns also industrial installations and building a new one without knowing the non-exhaustive requirements for compliance may require then requests for derogations. It is worse if a new installation is built on existing requirements and then new investments are needed to comply with requirements that didn't exist when the original plant was built. It can be worse even with significant modifications as it is not known what that means and what the implications are regarding existing installations.

The Chair explains with regard to the gap and the possibility for NRAs to define the units, that the same problem exists for DCC but timelines are different. NRAs are aware of that and some have transposed the solution from the RfG to other CNCs.

Bernhard Schowe-von der Brelie (EFAC) explains that it may help both manufactures and developers if some additional transition period may be given by the definition of new and existing equipment. He inquires whether ENTSO-E can add this information in the monitoring file regarding the definition of existing installations and new ones. For DE for example, it is one-year additional time already foreseen.

Ioannis Theologitis (ENTSO-E) explains the intention of ENTSO-E is to add this to the monitoring activities files, as also per ACER's request. The formal deadline for this is June 2019. ENTSO-E can make a short survey now to see what the situation is in each country, but developments are still under discussion in some countries.

The Chair agrees that it would be of benefit to collect this information; some good examples then can be followed by others.

Ralph Pfeiffer (ENTSO-E) explains NRAs can be entitled by the MS to define existing and new installations, so they are best placed to know if something is ongoing. In addition, it would be useful if ACER also conducts a survey with the NRAs.

→ ***The Chair concludes ENTSO-E and ACER will do as a joint task and develop a joint approach on this, and communicate further updates through the active library. As next steps, the Chair will get back to NRAs, discuss this issue and come back with information in the Issue Logger or with further information/feedback on how to move forward.***

5. GC ESC updates: Revised GC ESC Terms of Reference (for approval); Final GC ESC Expert Group Terms of Reference & Annexes; GC ESC Expert Group site

The Chair informs the ESC about the changes to the ToRs, mainly 1) a clarification for stakeholders that they are responsible for submitting their meeting materials on time for the ESCs, i.e. 5 working days in advance of the meetings; 2) a clarification for the interaction with the EGs of the ESC; and 3) a sentence to ensure alignment with the ToRs of the SO ESC (document [here](#)). The ToRs are approved as amended.

Ioannis Theologitis (ENTSO-E) informs the GC ESC that a separate webspace has been created for the EGs' work to enable stakeholders to track progress and be informed of the ongoing work of the EGs (more information [here](#)).

6. Report from the Expert Group 'Requirements for Pump-Storage Hydro modules' (EG PSH)

Ralph Pfeiffer (ENTSO-E) provides an update on the work of the EG on pump-storage hydro modules (EG PSH) which has kicked-off well with a lot of commitment from the members and good collaboration so far (slides [here](#)). The work is focused on reviewing requirements against relevant technologies and to identify some requirements to look at into more detail, mainly distinguishing between synchronous and non-synchronous hydro; types of technologies and different categories for the 3 operating modes. The EG is assessing the requirements and discussing what limitations, concerns exist on these, and has already assessed all frequency related requirements. There are no expectations of major issues in a generating mode. For synchronously operating mode, many requirements don't apply to this; while for pumping, the EG will need to have a closer look at the requirements, and there could be some issues as the active power of such machines can be regulated within a rather narrow range only. As next steps, the group will look into some remaining open questions concerning frequency disconnections etc.

The chair thanks the EG work done and enquires whether an explanation can be added in the table to explain why a capability is not possible for certain operating mode or technology.

Ralph Pfeiffer (ENTSO-E) explains that this will be done in the final document to be developed by the EG with further elaborations on those aspects.

7. Report from the Expert Group 'Identification of storage devices' (EG STORAGE)

Emilie Milin (ENTSO-E) provides an update on the work of the EG on storage (slides [here](#)). The EG had a presentation about the GC state of play and acknowledged the relevance with the tasks of GB Grid Code Electricity Storage Working Group (GC0096). The GB experience can be used a good reference and guidance for the EG STORAGE. A template with RfG requirements has been created to assess better the different storage technologies and will be further updated by the rest of the EG members. The EG discussed about classifying the different storage technologies into Synchronous Electricity Storage modules & non-synchronous Electricity Storage modules. A separate category could be introduced for certain storage technologies e.g. flywheels or superconducting storage. Additional requirements coming from DCC or/and HVDC or storage specific requirements (e.g. switching) will be considered. The EG will also analyse existing IEC and CENELEC standards. The work of the EG is linked to the EG MCS which allows mixed cases of storage such as generation and storage to be treated within that EG too. Storage can be a supplementary component, in addition to being a standalone device, and operation of the storage device can be linked to the operation of the generation unit/demand unit. The two cases would be included in the work of the EG, which will look at both examples and analysis of the consequences regarding the technical requirements.

The ESC welcomes the work of the EG.

8. Report from the Expert Group 'Mixed Customer Sites with generation, demand and storage and definition of system users' (EG MCS)

Robert Wilson (ENTSO-E) explains the progress of the EG MCS work and the main issues in the scope of the EG work (slides [here](#)). The EG MCS has considered specifically more closely the geographical issue, where a lower voltage connection is not possible or economic (ex. some remote locations) and discussed a number of options for solutions, for which it seeks the ESC guidance before the EG progresses further on this issue. It is considered that generally RfG requirements will still apply to the connection point with a number of options possible. The EG is looking at a number of technical considerations like FRT and reactive range and seeking advice on the various options, including either the usage of the interface point for all requirements, the use of interface point for type selection only, change the default criteria to 220kV, or remove type D voltage criteria completely.

Michaël Van Bossuyt (IFIEC) explains that changing the default criteria to 220kV will not be a solution for BE as there are several cases where they have solar PVs and windmills, that are not type D, and similar cases are expected to be seen in Belgium soon. It should not say TSO or DSO, but RSO (relevant System operation) as physically it is the same site but one owner. A CDSO has a different treatment so should take this into account in the first 2 solutions. It should be the same site otherwise there will be different treatment because of legal issues.

The chair reminds that it had been agreed to add something to the minutes regarding the task, but the task was referred to differently in slide 2. It has to be agreed in the ESC if this formulation reflects correctly the task.

Ioannis Theologitis (ENTSO-E) reminds that everyone agreed that it was in the scope already as part of the task; so EG wanted to make it more explicit.

The chair concludes that there are no objections to accept the wording as suggested.

Michael Wilch (EDSO for Smart Grids) reminds this discussion had found an acceptable solution during RfG consultations back in time and there is no use to reopen it.

Michaël Van Bossuyt (IFIEC) reminds that for a CDSO or an industrial site, if one is connected to above levels, this creates discrimination, and a solution needs to be found for that. He reminds that it is the voltage level within the CDS that is applicable, and it is an issue for all industrial sites connected above 110kV which are not CDS. All generation there becomes automatically type D.

The chair notes that the EG can continue working on the listed cases under the assumption that this is approved but not formally until the next ESC meeting.

The chair notes that regarding the interface point investigations, the EG should further analyse the possibility of significant amendments to be included in this potential solution: e.g. investigate potential investor's gaming, i.e. enlargement of initial plant with additional units, aiming at reducing the obligation to those units with a final objective to install much larger capacity at a decreased classification. Regarding the table on slide 7, additional scenario should be analysed where units up to a certain size would directly be excluded in the type D classification considering– e.g. type A size units, and potentially type B. When considering type B, the potential significant amendments to such PGMs have to be considered.

Eric Dekinderen (VGB) notes he can accept the proposal to erase voltage criteria for type A and B, but it won't work for type C and there is a problem for industrial sites with CHP which can't support FRT requirements.

The chair notes this issue should be analysed. A possible solution may involve or not an amendment of the RfG.

Michael Wilch (EDSO for Smart Grids) notes that EDSO and Eurelectric concluded they do not like the idea of introducing an interface point as this would bring a lot of legal uncertainty. IFIEC would support other solutions unless this is the only one possible.

Ioannis Theologitis (ENTSO-E) notes that this point has been shared and will be also discussed at next EG meeting.

Ralph Pfeiffer (ENTSO-E) notes that suggestions for possible solutions are welcome. The DE solution can be one possibility and should be added to the list of options of possible solutions. The objective is to propose solutions to then change the framework in the future.

The chair reminds that the purpose is to analyse the pros and cons of all solutions.

Michael Wilch (EDSO for Smart Grids) explains that the main idea is that DCC is for pure load facilities and RfG is for pure generation. There are many in between and the question is what applies to those – one idea is to consider the proportion of load or generation and based on that RfG is to be applied or not to the facility.

Eric Dekinderen (VGB) inquires whether there is a difference between public and private networks, if it is no, then it should be simpler.

Ralph Pfeiffer (ENTSO-E) notes that from a system engineering perspective, there is no difference.

Michaël Van Bossuyt (IFIEC) explains that from a legal perspective there is huge difference. It is not an issue if it is a private or public network; but the problem arises regarding whether it is a consumption site and a generator facility.

The chair explains the EG storage should also look at hybrid installations.

Eric Dekinderen (VGB) notes that the possible impact of storage should be considered in the EG MCS.

Ioannis Theologitis (ENTSO-E) notes this will be taken for the next webinar of the EG.

9. Report from WG009 within IEC-RE on an international certification program

Bernhard Schowe-von der Brelie (EFAC) provides an update on the topic of certification schemes from the previous ESC meeting (slides [here](#)). There needs to be an internationally accepted certification scheme that defines modules and specifications of equipment certificates in the context of the RfG and its implementation. An initiative has been started by ENTSO-E two weeks after the last meeting (WG 09 IECRE). The IECRE WG 09 aims to reach out to system operators in the member countries through the member bodies to participate in the WG009 and establishing Liaisons between IECRE and relevant external organisations, to provide guidance for acceptance criteria for RE-Certification Bodies and RE-Testing Laboratories within IECRE for grid code compliance certification, to prepare new Operation Directions for harmonized certification, testing and simulation model validation in the field of grid code compliance, to establish references to IEC standards and committees related to grid code compliance, and to propose a mechanism on how to integrate biofuel driven combustion engine generating sets, combined heat and power (CHP) generation, storage systems and other renewable

energies. Other issues to be addressed include schemes and how to integrate non-renewables into the schemes, integration of the new scheme into the overall IECRE regime, and establishing liaisons to user groups / non-members, especially system operators. The next steps include starting work in January 2019, inviting stakeholders to contribute to the WG and establishing a liaison between ENTSO-E, EFAC and IECRE. All information on the WG progress can be found on the EFAC website.

The chair thanks for this update.

Luca Guenzi (EUTurbines) wonders how to get involved and how it would work once the process is extended to non-renewable technology.

Bernhard Schowe-von der Brellie (EFAC) explains that at the kick-off meeting, 95% of the organizations sitting at the table were European ones. The obligation is to comply with the IEC-RE. Then it could be extended even more but it has to be discussed by the board. The final approval is expected at the beginning of January and this will be brought on the table next time in February.

Wouter Vancoetsem (CENELEC) notes the link between the testing and compliance hasn't been made yet. Bernhard Schowe-von der Brellie (EFAC) is working on the topic in CENELEC based on a clear European framework which is not applicable to other parts of the world.

Bernhard Schowe-von der Brellie (EFAC) notes that regarding the TG CM, the CENELEC group will not address certification and this work will go on for 2 years. It might be a good idea not to kill the EG now but to have some more discussion on how certification can be proposed on RfG level in the near future and to have this platform in 2019. There are many open questions on how to do compliance checking on plant level for example.

Ioannis Theologitis (ENTSO-E) explains the TG CM has no own working plan, but if some points are not covered yet, additional topics are welcome on the table and the TG can be reengaged to work on those.

10. VGB presentation – topics: FRT specifications 0.15 sec versus 0.25 sec; voltages ranges for offshore PPMs

Eric Dekinderen (VGB) explains that a number of questions as raised by VGB have been answered in the meantime by ENTSO-E: there are two questions that remain still open from his perspective: one regarding the big difference in FRT time throughout Europe, and regarding offshore wind PPMs.

Regarding the FRT requirements, there is a large majority of countries respecting the value of 0.15 sec and a few are at or above 200 ms. The question is if this is a violation of the European principle of movement of goods.

→ ***The chair concludes that the question will be recorded in the Issue Logger and the EC will provide an answer through the Issue Logger.***

The second question of VGB concerns the development by TenneT TSO of an offshore wind farm to connect at 66kV, and this has to be coherent with RfG requirements for AC connected installations. It is imposed that the max voltage is 1.15 time the rated voltage, and this is violating the IEC table of standardised voltages. The RfG does not foresee minimum voltages for offshore connections; for onshore the code doesn't impose anything for installations below 110kV, but that's not the case for offshore installations. The proposal is to introduce min voltage for offshore installations. A possible solution could be to modify the RfG by adding a few letters, and then a number of derogations would not be needed anymore. The Chair concludes that can be submitted as a possible solution to the problem.

→ ***The issue should be recorded in the Issue Logger and it will be the responsibility for all relevant stakeholders to have a look at it and provide their views. The answers can be discussed at the next ESC.***

Ralph Pfeiffer (ENTSO-E) explains that ENTSO-E will respond through the Issue Logger. Informally, for FRT ENTSO-E does not see any market violation as this is a non-exhaustive requirement as others and it is either a general issue or no issue. On voltage ranges on offshore PPMs, ENTSO-E has reviewed its earlier response to the question and will reconsider it. It can be recognized that the lack of a lower limit is a shortcoming of. In NC HVDC the lower limit is defined.

→ ***ENTSO-E will update the answer in the Issue logger.***

11. Follow-up actions:

1. ENTSO-E would appreciate to receive data from various countries from stakeholders for the purpose of cross-checking these with its own sources and updating further the active library and the monitoring files, as the case may be.

2. Transparency on NC implementation: ACER will inform the NRAs of the query on how to deal with the possible delays, given also the lack of information in some countries, regarding the state of play of requirements' approval, publication and processes for certification and validation, and whether some general derogations can be applicable to the industry. The issue will be recorded in the Issue Logger and an answer can be published on this either before the next ESC or as available.

3. ENTSO-E and ACER will as a joint task develop a joint approach to provide further information regarding the definition of existing installations and new ones and will communicate the updates through the Active Library. ACER will discuss this issue with NRAs and provide further information on how to move forward, through the Issue Logger.
4. EG PSH: the EG is invited to further elaborated in its final deliverables on an explanation in the table on the reasons found in cases where it is deemed that a capability of certain mode of technology is not possible.
5. EG MCS: regarding the interface point investigations, the EG should further analyse the possibility of significant amendments to be included in the potential solution explored; all possible solutions have to be added to the scope, and assessed accordingly with pros/cons. The impact of storage and hybrid installations should be assessed from the EG MCS perspective as well, in addition to the EG storage work, including further analysis regarding the solutions on the interface.
6. Regarding the differences across FRT requirements between countries, the question of whether this is a violation of the European principle of movement of goods should be recorded in the Issue Logger and the EC will be invited to provide an answer through the Issue Logger.
7. The question on voltage ranges for offshore PPMs and the possibility to find a solution through modifying the RfG to avoid the need for derogations, will be recorded in the Issue Logger. All relevant stakeholders are invited to have a look at it and provide their views. ENTSO-E will update the answer in the Issue logger. The answers can be discussed at the next ESC.

Joint SO-GC ESC session

Thursday, 13 December 2018 from 15:00-16:00
ENTSO-E, Avenue de Cortenbergh 100, Brussels 1000

1. Opening

1.1 Welcoming address and Draft Agenda

The agenda of the Joint SO-GC ESC is approved, with an item under AOB by CEDEC.

1.2. Review and approval of minutes from previous meeting

The minutes of the previous Joint SO-GC ESC meeting are approved (available [here](#)).

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

- 1. Action 1: Regarding the question on whether it is possible to provide information on the technical requirements for RR and FRR through the Active Library, ENTSO-E will collect links to LFC block operational agreements and will make the links available on ENTSO-E website.*
- 2. Action 2: ENTSO-E will take the suggestion to collect historical data of inertia where possible already from 2018 and will report in the December ESC the feasibility. The analysis is ongoing.*
- 3. Action 3: ENTSO-E will look into gathering the information regarding countermeasures considered by TSOs in the system defence plans. System defence plans however cannot be made publicly available due to security reasons.*
- 4. Action 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. ENTSO-E has interviewed a number of stakeholders in the course of the past few months. More inputs are welcome throughout December and early 2019.*

2. 2. Brief update on the three Expert Groups under the GC ESC: EG PSH, EG STORAGE, EG MCS

Ioannis Theologitis (ENTSO-E) provides an update on the ongoing work of the EGs established in the fall on the topics of storage, pumped-storage hydro and mixed customer sites. The 3 EGs kicked off in October and the work is on track. The progress will be reported at the next ESCs. Information on the work of the EGs is also available on the ENTSO-E website.

3. NC High-Level Implementation Group - preparation for next meeting in January 2019

Pilar Munoz-Elena (ENTSO-E) provides an update on the topics for the expected next meeting of the NC IMG, possibly in early 2019. Topics for the agenda will include regional tasks' implementation, the Transparency Platform and ENTSO-E's vision, NC amendments, among others. ENTSO-E provided comments to ACER's guidance document on NC amendments, and expects to contribute to the EC consultation on the NC priority list in early 2019.

4. Update on ENTSO-E consultation processes and E-codes app feedback usage

Stela Nenova (ENTSO-E) provides an update on the process for the update of the ENTSO-E consultation policy document (slides [here](#)). ENTSO-E has interviewed a number of stakeholders who contributed with their proposals and ideas for improvements to the consultation processes. A full draft of the updated consultation policy document will be prepared upon the adoption of the CEP in 2019 and will be subject to a formal stakeholder consultation and adoption for subsequent submission to ACER and the EC for an opinion. ENTSO-E will run its annual stakeholder survey in January 2019 and all stakeholders who wish to provide preliminary feedback for the update of the Consultation policy document are welcome to fill-in the survey or to send their suggestions directly to ENTSO-E.

Pilar Munoz-Elena (ENTSO-E) provides an update on the ENTSO-E NC app and use and functionalities (slides [here](#)). Florentien Benedict (CEDEC) inquires whether the different languages/translations of the NCs can be added to the NC app.

ESC members suggest that it could be beneficial to include in the NC app a glossary of the terms and definitions of the NCs and Regulation 714/2009, and to have those as a starting point or redirect to the place where the definition is.

ENTSO-E will look into the possibility to link the different languages of the NCs/GLs in the app as well into further possibilities for enhancing the functionalities of the app to reflect the proposals received where feasible.

5. AOB & meeting dates in 2019

Florentien Benedict (CEDEC) suggests that for the sake of efficient use of time, the topics for the joint SO-GC ESC should be expanded to make best use of time or that the need for the joint session is reconsidered to serve the needs on an ad-hoc basis.

The chair notes that the joint session was foreseen to provide updates on common items with a view to avoid repeating the topics and content in two meetings and is normally planned on a request/substance basis to include issues that impact both ESCs; if there are not enough common issues, it can be skipped as well.

Eric Dekinderen (VGB) suggests that one beneficial topic for the joint session could be to have an overview and discussion on the system defense plan and system restoration plans.

The chair concludes that if ENTSO-E plans to propose an update on the defense and restoration plans for the March ESC, that can be a joint topic for discussion.

The chair thanks to all stakeholder working on both ESC and ENTSO-E for the support and deliverables and for what they have provided in 2018 including the EGs, the NC app, the Issue Logger, the implementation monitoring plan, etc.

Meeting dates in 2019

The dates for 2019 are approved as suggested.

GC ESC	SO ESC	MESC	BSG
21 March, Brussels	20 March, Brussels*		
5 June, ACER	4 June, ACER		
12 September, ACER	11 September, ACER		
12 December, Brussels	13 December, Brussels		

6. Follow-up actions:

1. All stakeholders who wish to provide preliminary feedback for the update of the Consultation policy document are invited to submit suggestions through the ENTSO-E annual stakeholder survey in January 2019, or to send directly their proposals to ENTSO-E.

2. ENTSO-E will look into the possibility to link the different languages of the NCs/GLs in the app as well into further possibilities for enhancing the functionalities of the app to reflect the proposals received where feasible.

3. The topic of the update on the defense and restoration plans by ENTSO-E will be considered for the joint SO-GC ESC session in March. March ESC, that can be a joint topic for discussion.