

20th Grid Connection European Stakeholder Committee (GC ESC)

10 December 2020 from 09:00-13:00

GotoWebinar

Draft Minutes

Participants		
Alberto	BRIDI	CEDEC
Alexander	DUSOLT	ENTSO-E
Andreas	LUXA	T&D Europe
Andres	PINTO BELLO	SmartEN
Anneli	TEELAHKT	The European Association for Storage of Energy - EASE
Annette	JANTZEN	EUGINE
Bernhard	Schowe-von der Brelie	EFAC
Elaine	O'Connell	EUROPEAN COMMISSION
Emiliano	DEGASPERI	EASE
Eric	DEKINDEREN	VGB Powertech
Florentien	BENEDICT	CEDEC
Francesco	CELOZZI	ENTSO-E
Gunnar	KAESTLE	COGEN
Ioannis	THEOLOGITIS	ENTSO-E
Jan -Noel	Marquet	EDF
Klaus	OBERHAUSER	VGB Powertech
Knud	JOHANSEN	ENTSO-E
Luca	GUENZI	EUTurbines
Marc	MALBRANCKE	CEDEC
Marco	PASQUADIBISCEGLIE	ARERA
Marcos	BYRNE	PowerNode Ltd
Mario	NDREKO	ENTSO-E

Maxim	BUQUET	EUTurbines
Michael	VAN BOSSUYT	IFIEC
Michael	WILCH	EDSO for Smart grids
Mike	KAY	GEODE
Olivier	ANTOINE	Tractebel
Ralph	Pfeiffer	ENTSO-E
Uros	GABRIJEL	ACER (Chair)
Valerie	REIF	EUI
Vasiliki	KLONARI	WindEurope
Vincenzo	TROVATO	ACER

1. Opening

1.1. Review of Agenda

The Chair welcomes the participants to the 20th GC ESC session.

Luca Guenzi (EUTurbines) asks to include a short update on CENELEC activities (50549-10 publication). The Chair confirms the addition under AOB of a 5 minutes slot for the proposed topic.

The Agenda is approved.

1.2. Approval of the Minutes

No comments raised by the stakeholders on the minutes of the previous meeting. The minutes of the 19th GC ESC meeting are approved.

1.3. Follow-up actions from previous meeting/ new additions to Issue Logger (available [here](#)):

Ioannis Theologitis (ENTSO-E) presents the follow-up actions from the previous meeting.

Luca Guenzi (EUTurbines) updates the participants about the contact between the TC8 and IECRE. During the plenary of TC8 WG10 it was decided that there is no need to start a contact between the TC8 WG 10 and IECRE. The reason is that IECRE is seen as focused on the procedural content, while TC8 WG 10 is more focused on the technical details.

1.4. Meetings calendar for the 2021

The dates for the 2021 meetings are

- 09 March
- 10 June
- 22 September
- 07 December (possibly to be moved together with the SO ESC meeting on 08 December due to public holidays in some member countries)

2. Connection Network Codes Implementation

Ioannis Theologitis (ENTSO-E) presents slides (available [here](#))

2.1. Updates from Implementation of CNCs

Some changes were done in the active library for Denmark, Germany, Italy and Greece. ENTSO-E asks for reporting of possible mistakes.

No further questions or comments.

2.2. Second Edition of the ENTSO-E Monitoring Report

Ioannis Theologitis (ENTSO-E) mentions that the second edition will be available in a couple of weeks (before the end of 2020) and presents the [new space](#) that is dedicated to all ENTSO-E monitoring reports mandated by the network codes. The CNC Implementation Monitoring report will also be available there and on Active Library. The report combines all 3 connection codes.

2.3. Highlights from ACER's Implementation Monitoring Report on RfG

Vincenzo Trovato (ACER) updates the committee on the ACER's Implementation Monitoring Reports concerning the Grid Connection Network Codes. ACER will publish two implementation monitoring reports, one for the NC RfG and the other for the NC DCC and NC HVDC. The reports focus on the status of the implementation of the NCs at national level e.g. monitoring the level of harmonization. For instance, the reports will highlight the presence of values of the approved requirements of general application being stricter or looser than the values indicated in the relevant NCs. ACER will communicate the publication of the reports through dedicated emails to the Stakeholders including the links.

Gunnar Kaestle (COGEN) asks for the confirmation from ACER that the harmonization of implementation is a target of ACER. Vincenzo Trovato (ACER) answers that the analysis of the level of harmonization is a target of all the monitoring exercises, investigating the alignment of the national implementation with the EU Regulations in each member state.

Eric Dekinderen (VGB) reminds that EUTurbines presented some time ago a table showing countries not respecting the frequencies ranges and would like to know if ACER is willing to tackle the issue. Vincenzo Trovato (ACER) answers that the discussion on the contents should follow the publication of the reports. However, in general frequency requirements are considered fundamental and during the next ESC meeting the reports will be available, offering the possibility to discuss. The Chair adds that the report is meant to highlight divergences, but ACER will not enforce compliance or any measures since it is not part of its role. European Commission is mandated to enforce the compliance with the EU Regulations.

The Chair asks ENTSO-E if the new Monitoring platform on ENTSO-E website is meant to be a complete pool for ENTSO-E publications or if it is dedicated just to the monitoring deliverables. Ioannis Theologitis (ENTSO-E) confirms that the platform is dedicated just to the monitoring publications.

The Chair remarks that the reports will be published on ACER's website and a newsletter will be circulated.

2.4. Consultation on Implementation Guidance Documents (IGD)

IGDs are available for public consultation and have been adapted for several domains. ENTSO-E screened all IGDs to see if changes were needed. It is a legal obligation to screen and maintain the IGDs every 2 years.

No questions or comments.

3. IGD on Compliance Verification - testing and application of equipment certificates in the verification process

Knud Johansen (ENTSO-E) presents slides (available [here](#)) on ENTSO-E revision of IGD on Compliance Testing and Monitoring.

Luca Guenzi (EUTurbines) asks if the deadline for delivering the comments to the IGD can be postponed due to the busy Christmas period. He proposed to allow for an extension. Knud Johansen (ENTSO-E) thanks EUTurbines for the feedback and mentions that compromise solutions will be favoured for inclusion in the IGD. Ioannis Theologitis (ENTSO-E) complements on the deadline by saying that the request from EUTurbines is noted down. The original date (15 January) was decided also in compliance with internal ENTSO-E processes. However, ENTSO-E will check internally the possibility of moving the date in order to ensure in total two months of public consultation.

ACTION: ENTSO-E to check the possibility to move the deadline of the public consultation for the revised IGDs to allow for more time for comments.

Gunnar Kaestle (COGEN) asks if the publication of the IGD on compliance will impact the redaction of national testing standards. Knud Johansen (ENTSO-E) clarifies that the IGD is not binding and the RSOs as responsible to detail the testing requirements in the verification procedure. The current IGD aims to guide the TSOs in the process of specifying the applicability of Equipment Certificates in the national compliance processes due to the presence of 22 different standards currently covering the topic of testing. The final target is to ease the integration of the smaller units. Luca Guenzi (EUTurbines) complements that at the beginning of the draft EN50549-10 it is specified that it can be endorsed by third parties.

Eric Dekinderen (VGB) asks if after the deadline of the public consultation (currently 15th of January) there will be another possibility for the stakeholders to comment the documentation. Ioannis Theologitis (ENTSO-E) answers that time is a factor and the development of the final draft should not be prolonged more than the necessary. He invites the Stakeholders to send all relevant comments during the public consultation. Any follow-up actions and need for further exchanges will be defined after the closure of the public consultation.

Bernhard Schowe-von der Brellie (EFAC) replies to Gunnar and Luca that the cross impact of existing testing standards and the CENELEC draft EN50549-10 is confirmed and suggests checking the compliance of the national testing standards with the new CENELEC draft EN50549-10. The topic of the alignment between the national testing standards and the CENELEC standard should be addressed in the incoming IGD. Knud Johansen (ENTSO-E) clarifies that the cooperation on the topic is still ongoing. The original CENELEC EN50549 part 1 and 2 have 389 pending comments which are still being discussed and need to be resolved before a final compliance verification can be performed with reference to part 1 and 2. The compliance verification/test cases specified in part 10 can only be performed when all the comments from part 1 and part 2 are resolved and a new version of part 1 and part 2 is published.

Luca Guenzi (EUTurbines) complements on the topic of draft EN51549-10 that the standard is designed and worded in order to be “adapted” to the national testing standards, meaning that there are no direct, hard and binding references to EN50549-1 and EN50549-2. Of course links to these standards are included; however, it is quite open toward the verification of requirements foreseen at national level (i.e. different values coming from RSOs).

4. Electrical vehicles and grid connection requirements. – Follow up activities to increase the outreach

Vincenzo Trovato (ACER) presents the topic.

ACER has established contacts with Orgalim and Charge-Up Europe. ACER presented the views concerning the topic of electric mobility and the relevance with CNCs, matters that have also been included in the recent EG STORAGE final report. The general intent is to enhance the engagement with the industrial parties involved in the topic.

Anneli Teelhanck (EASE) remarks that on their side would be interested in a dedicated session, event or some form of platform to exchange opinions on this topic. A working group dedicated to the topic of electrical mobility is active in EASE. Vincenzo replies that ACER sent an answer to EASE on the possibility of discussing the subject of electric mobility in a dedicated event, saying that ACER would like to face the topic in the framework of EGs. The Chair adds that ACER is open to further discussions with any interested parties.

Gunnar Kaestle (COGEN) remarks that in Germany the issue of overload of distribution lines due to electrical mobility (charging the batteries) is currently being discussed. A solution currently under discussion is the use of remote-controlled switches installed in the charging stations, disconnecting the station when an overload is detected. This solution however was not sufficient, since it does not take into account the dynamic behaviour of the distribution system. In addition remote controlled equipment is a costly and complex solution. A possible alternative could be found in self-regulating equipment. Currently a document on self-regulating concepts for dispatchable loads is being developed at IEC level (related documentation has been shared in the framework of the EG Storage). Gunnar asks if the use of self-regulating equipment has been discussed during the meeting ACER had with Charge-Up Europe and Orgalim. Vincenzo replies that during the EG Storage activity this topic was not discussed and similarly in the discussions with Orgalim and Charge-Up Europe which were more of an introduction of the currently established work. However, feedback is expected as a follow-up from the ongoing discussions between ACER and the involved parties.

Gunnar Kaestle (COGEN) asks clarification about the regulatory framework of temperature-controlled devices. Vincenzo Trovato (ACER) clarifies that the current discussion was not focused on the technical details like the use of temperature-controlled devices.

Mike Kay (GEODE) asks if it will be possible to send a communication to the GC ESC on the feedback delivered by Orgalim and Charge-Up Europe, without waiting for the next GC ESC meeting. Vincenzo Trovato (ACER) confirms that in case feedback from Orgalim and Charge-Up Europe is delivered before the next GC ESC, he will inform the members of the GC ESC on the high-level feedback and allocate some time during the March meeting to discuss in detail about the subject of the exchange.

ACTION: Vincenzo Trovato (ACER) to send a written communication about the feedback delivered by Orgalim and Charge-Up Europe in case this is received before the next GC ESC meeting in March.

5. Technical requirements for connection to offshore HVDC

Olivier Antoine (Tractebel) presents the slides (available [here](#))

Gunnar Kaestle (COGEN) remarks that there is already a hybrid solution between Germany and Denmark (*Kriegers Flak - Combined Grid Solution* <https://en.energinet.dk/Infrastructure-Projects/Projektliste/KriegersFlakCGS>), so this kind of installation is not so far in the future. Moreover, Gunnar adds that Project IEC TS 63291-1 ED1 HVDC Grid Systems and connected Converter Stations - Functional Specifications -Part 1: Guidelines (TC 115 / WG 15) is already dealing with the topics presented by Olivier. Olivier Antoine (Tractebel) clarifies that the focus of Tractebel activity is the connection of this systems, while CENELEC focuses more on standardization. Additionally Olivier remarks that the difference between the cases analysed in Tractebel's work and infrastructures like Kriegers Flak, is that in case of hybrid multi-terminal DC connections, it is not clear who will own and operate the DC links connecting different wind farms, however he agrees that these projects (hybrid multi-terminal connections) are not so far in the future

Concerning the hybrid projects in the future, the Chair asks when the underlying regulation would be needed. Olivier Antoine (Tractebel) answers that, concerning the timeline, the first projects for hybrid DC multi-terminal connection to windfarms could be foreseen to be delivered by 2030. For the first project, an increased coordination between stakeholders (including vendors) could be enough, however, to deal with the connection of independent DC systems, dedicated work on requirements could be needed. In general, there are still 5 to 10 years to discuss and fine tune the requirements for this kind of installations, since it should not be rushed and submit something incomplete or wrong.

The Chair remarks that the coordination of TSOs and vendors will be critical to ensure the feasibility of this type of projects.

Elaine O'Connell (European Commission) complements the discussion inviting the Stakeholders to check EC website for the details on the European Commission (EC) RES strategy (published on the 19 November 2020). EC expects a lot of offshore wind installation still coming in the shape of radial connections. However, in the coming future cooperation will be needed between TSOs and member states especially in those areas where the available sea space is limited. In general, the final investment decision should be expected in the next 2 years. For these reasons the work on the requirements for these installations should start soon. Tractebel study is available online on the EC website.

The Chair concludes that an EG covering the topics of the requirements for the offshore hybrid multi-terminal connections could be useful and will be included in the list of the future EGs to be launched (after the conclusion of the work of the current EGs).

6. GC ESC Expert Groups

6.1. EG on Interaction Studies and Simulation Models

Mario Ndreko (ENTSO-E) presents the slides (available [here](#)).

The EG requests an extension of its timeline till June 2021 to effectively address all chapters defined in the draft report. The GC ESC unanimously agrees to the extension of the time scope of the EG on Interaction Studies and Simulation Models.

Gunnar Kaestle (COGEN) asks if all interactions analysed in time domain and no stability analysis (e.g. in the domain of non-linear systems) in frequency domain has been considered. Mario Ndreko (ENTSO-E) answers that the report will include some recommendations concerning the frequency domain (i.e. on impedance-based models).

Gunnar Kaestle (COGEN) raises a question on model validation. In particular he asks if validated models of synchronous machines can also serve in the conformity test for Fault Ride Through capabilities. Mario clarifies that for the moment no recommendations in this sense are being considered. However on this topic in the next meeting the national experiences from some member countries will be examined. Gunnar complements that the use of validated models for a synchronous machine to demonstrate conformity with this kind of requirements could reduce the effort of the compliance process. Luca Guenzi (EUTurbines) complements Mario's answers to Gunnar that the EG is discussing the current practice in Germany on the use of validated models in the compliance verification process.

Eric Dekinderen (VGB) asks to send the updated presentation to the members of the GC ESC.

ACTION: ENTSO-E to share the revised presentation on the EG ISSM updates.

6.2. EG on Criteria for Significant Modernization

Michael Wilch (EDSO for Smart Grids) presents the slides (available [here](#))

The EG requests an extension of its timeline till June 2021. The GC ESC unanimously agrees to the extension of the time scope of the EG on Criteria for Significant Modernization.

Michael Van Bossuyt (IFIEC) remarks that the topics concerning demand in general should be discussed in the future, in particular the topic of closed distribution system.

6.3. EG on Baseline for Type A power generating modules

Florentien Benedict (CEDEC) presents the slides (available [here](#))

Gunnar Kaestle (COGEN) agrees that the Type A category is not composed of photovoltaic systems only and remarks that micro-hydro turbines could be included in the list of systems presented. In addition, the general category of inverter-based should be part of the EG work, by making sure that the FRT requirements are inclusive enough to take into consideration all the equipment interfacing with the system in this way. It should be avoided to concentrate the discussion only on photovoltaic systems (even though they represent a large part of the type A PGM installed).

Eric Dekinderen (VGB) agrees with Gunnar Kaestle (COGEN), by saying that for the type A synchronous machines (i.e. gas fuelled microturbines), in case volumes of installation will go up, the topic of FRT requirements for these types of installations should be taken in consideration.

The Chair complements that it should be possible to assume the number of Type A synchronous machines sold (and installed) and assessing if they will become relevant system wide. A similar exercise was done in the past for the emerging technologies.

Gunnar Kaestle (COGEN) reacts to Eric Dekinderen (VGB) by saying that in the German code for low voltage, combined heat and power systems do not have to show FRT capabilities, for the equipment up to 50 kW. In terms of future perspective, the micro CHP systems could be covered largely by fuel cells (which are an inverter-based technology) that can already provide FRT support.

Luca Guenzi (EUTurbines) asks if in the work currently ongoing, distribution of the units is being considered (and the distribution of the FRT capabilities). It should be considered that distributed energy sources are likely not to be all impacted by a disturbance on the system and not all in the same manner – considering type of grid, voltage level of fault, type of fault, distance from fault etc... Florentien Benedict (CEDEC) confirms that this type of analysis is not being performed.

ACTION: Gunnar Kaestle (COGEN) to send proposals for integration to the work of the EG BftA.

Ioannis Theologitis (ENTSO-E) supports the possibility for the members to deliver feedback, however it should be reminded that one of the general targets of the EG is to issue recommendations for the harmonization of the practices, so the general intent should not be hindered by going too much in detail and differential FRT profiles.

Luca Guenzi (EUTurbines) complements his former statement by saying that aggregation of the units could be considered in order to assess the possible FRT response.

7. AOB

Luca Guenzi (EUTurbines) confirms that the standard EN 50549-10 has been distributed to the national committees. The comments will be delivered by the end of the year, and the TC8 will work on the comments from the beginning of 2021. The standard includes a chapter related to simulation models. He invites the members to get in contact with the national committees.

8. Follow-up actions:

1. ENTSO-E to check the possibility to move the deadline of the public consultation for the revised IGDs to allow for more time for comments.
 2. ACER (Vincenzo Trovato) to send a written communication about the feedback delivered by Orgalim and Charge Up Europe in case this is received before the next GC ESC meeting in March.
 3. ENTSO-E to share the revised presentation on the EG ISSM updates.
 4. COGEN (Gunnar Kaestle) to send proposals for integration to the work of the EG BfTA
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