ACER
Agency for the Cooperation of Energy Regulators

Ref: GC ESC15-06

26th Grid Connection European Stakeholder Committee (GC ESC)

15 June 2022 from 09:30-13:00

CEER premises (Brussels) & Microsoft Teams

Minutes of the meeting

Participants		
Alcazar	Freddy	EUGINE
Aren	Assiet	EUGINE
Benedict	Florentien	CEDEC
Chambers	Keith	Europgen
Dekinderen	Eric	VGB
Gabrijel	**Uros**	**ACER / Chair of GC ESC**
Gallego	Santiago	EDSO for smart grids
Glapiak	Aleksander	ACER
Gomes	Maria	ACER
Gonzalez	Adrian	ENTSO-E
Govindaswami	Sudharsana	Europgen
Guenzi	Luca	EUTurbine - Solar Turbine
Hearne	Tony	EURELECTRIC
Kaestle	Gunnar	COGEN
Kay	Mike	GEODE
Klonari	Vasiliki	WindEurope
Lewis	Thomas	EASE
Malbrancke	Marc	CEDEC
Martinez Villanueva	Sergio	ENTSO-E
Ndreko	Mario	ENTSO-E
Oberhauser	Klaus	VGB
Osenberg	Jan	Solarpower Europe

Pasquadibisceglie	Marco	Arera
Raju	Srinivasa	EUGINE
Schaupp	Thomas	CENELEC
Schowe-von der Brelie	Bernhard	EFAC / VAZ (FGH)
Soare	Alexandru	ANRE
Subramanian	Hariram	SolarPower Europe/ EG ACPPM Chair
Theologitis	Ioannis	ENTSO-E
Van Bossuyt	Michaël	IFIEC Europe
Vermaat	Peter	EUDSO
Vinas	Thierry	EURELECTRIC

1. Opening

1. Review of Agenda

The Chair welcomes the participants to the 26th GC ESC meeting and reviews the participants list to ensure that only members of the Committee or/and alternates that have informed the Chair are present or connected. He invites the participants to briefly introduce themselves.

The agenda is presented and approved (available here).

The Chair asks for any additional topics to be covered under AOB. Eric Dekinderen (VGBE) raises the point of missing RoCoF meeting. Michael Van Bossuyt (IFIEC Europe) would like to discuss next meetings' organisation.

2. Approval of the minutes

The minutes are approved with no further comments (available here).

3. Follow-up actions from previous meeting/ new additions to Issue Logger (available here):

Adrian Gonzalez (ENTSO-E) presents the follow-up actions and their status from the previous meeting. Luca Guenzi (EUTurbine - Solar Turbine) raises awareness that points from EUTurbines regarding the RoCoF workshop were submitted and stresses the importance of this topic to EUTurbines.

2. ESC Expert Groups

Expert Group: Advanced Capabilities for Grids with High Shares of Power Park Modules (EG ACPPM)

Adrian Gonzalez (ENTSO-E) informs the present members that Hariram Subramanian from SolarPower Europe has been appointed the new Chairman for Expert Group Advanced Capabilities for Grids with High Shares of Power Park Modules (EG ACPPM).

Hariram presents the slides (available here). He concludes his presentation by opening the discussion on questions addressed to ACER, submitted in his presentation.

Uros Gabrijel (ACER) explains why DERs are mentioned in the context of advanced capabilities; because the challenges brought by the distributed generation can be curbed by smarter control and devices at the distribution level. The timing is not ideal, but regulators do not want to miss the opportunity to look into this topic. He points out that it's not too early to mention this, although the report by EG ACPPM will not be finished by September 2022, nevertheless the full-fledged public consultation is the 1st step of the amendment process and relevant amendments will be publicly consulted in early 2023. In turn, ACER can use the EG ACPPM final report to inform its own amendment proposals. Ioannis Theologitis (ENTSO-E) asks what's the use of the report. Uros replies that the purpose is for regulators to propose informed changes to the grid connection codes. i.e., consider specific outcomes of the report, mentioned devices and other information in the relevant policy. Results of EG will be taken into consideration by regulators and ACER for recommendation to the Commission.

Thomas Schaupp (CENELEC) raises the concern that there are two different topics, notably the distributed generation, and also the loss of inertia of PPMs and its strategy to compensate, which is covered by the ToR of EG ACPPM. He continues that the word 'distributed' was eliminated from the EG's name, since offshore wind parks are centralised. However, he further stresses that reduced inertia and PPM based systems without synchronous generation are not covered in the policy paper, which CENELEC and working group 3 consider as a very important topic and must be included in the next RfG. Uros encourages to submit relevant input in the course of the full-fledged public consultation and replies that ACER is aware of decreasing inertia in the system and increasing risk of system splits. Thomas agrees. Uros says that HVDC NC is out of scope of both the policy paper and the relevant amendment process as decided by the Commission; offshore hub-related amendments are in the scope of an expert group.

Klaus Oberhauser (VGB) asks about which intelligent devices installed under DSO level are covered by the policy paper. Uros replies that all devices which support stabilising the system are covered in order to strike the balance between the system security and costs. Marco Pasquadibisceglie (Arera) refers to Italy where most interfaces between transmission distribution network the protection devices and schemes are completely under review, because they were installed based on flows from transmission to distribution network. He continues that with more distributed energy resources in some areas the direction can change and also flow from distribution to transmission network. This leads him to the conclusion that protection devices must be rethinked so that a potential pollution is being limited, which needs to be done by TSOs and DSOs. Thus, more codes for Type A and Type B units are being implemented to RfG. Also, he states that batteries as other storage devices must be taken into account for distributed networks.

Eric Dekinderen (VGBE) informs that VGBE added ten areas to the policy paper which were not specified. Further he asks why not to include DSOs, Grid Users, consumers and generators to the analysis of the impact on advanced capabilities system needs. Florentien Benedict (CEDEC) argues that in the ToR it's not limited to TSOs, therefore Eric's claim is applicable, which is first endorsed by the EG's Chairman Hariram and also by Uros representing ACER. Thomas Schaupp (CENELEC) refers to the presented Working Group Key Focuses which state to 'different TSO areas' and not the TSOs only.

Tony Hearne (EURELECTRIC) underlines that the main question is of how to operate a power system in its entirety without inertia, only with PPMs. He further informs that in Ireland already 75% of the market is supplied by PPMs and it's planned to reach 95%. He continues that EirGrid knows that it's hard to envisage such a system without some form of physical inertia. He further asks if Eirgrid has been approached to participate EG ACPPM.

Adrian Gonzalez (ENTSO-E) refers to Thomas Schaupp's question informing that within the EG's ToR DSOs and other grid users are not specifically excluded.

Uros Gabrijel (ACER) asks if EirGrid has been actively integrated into the EG's work. Ioannis Theologitis (ENTSO-E) explains that EirGrid is member of the EG and thus can contribute to the review. He also states that there are other members who are experienced in this field, and also external experts from Nationalgrid, who are already facing the mentioned challenges. Some members in the room claim that external contributions are not very useful, whereas Ioannis argues that there is still a value, and that outcomes will be reviewed in detail.

Vasiliki Klonari (WindEurope) informs that she has been a part of the group where two main tasks were identified, i.e., to agree on common terms and definitions to describe capabilities and also to identify system power needs. She claims that there is extremely low active participation by TSOs which she sees as a threat for the results and their applicability in later stages. The outcomes are thus not adequate and should not be taken into account by the European Comission. She advertises to motivate TSOs to actively review and answer questions of EG ACPPM and continues that members currently participating actively should not define standards for system needs. She further raises the point of the final report by EG CROS about HVDC, is also covering the topic of grid forming capabilities, where she sees potentially overlapping points with EG ACPPM work, which need to be identified upfront. Ioannis Theologitis (ENTSO-E) refers to Vasiliki's first issue and states that so far only a few representatives from different TSOs are in the EG, but as soon as subgroups are formed there will contribute actively in the phase of reviewing.

Mario Ndreko (ENTSO-E) refers to previous statements. He stresses the importance of the focus on grid forming capabilities and their protection skims but also to integrate those in the whole chain from Type A to Type D units. He further refers to technology readiness level of power park modules and states there is a tremendous need for capabilities in order to ensure that manufacturers can bring new technologies as soon as possible to the operating market in a cost-effective way.

Florentien Benedict (CEDEC) refers to question on electric vehicles, which Uros replies to that there are covered by storage/battery systems, which should be included as any other system user. He further explains that the use case is yet to be defined, depending on size/class/type for an optimal solution.

Expert Group: Identification of connection issues for offshore systems (EG CROS)

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

Thierry Vinas (EURELECTRIC) asks if observations by EG CROS also take voltage harmonics into account, and if yes if an economic analysis will be performed to solve the problem cost-efficiently given the cost of filters. Mario explains that this aspect is too deep. He further explains that it's a local issue with different approaches, thus no implementation is planned. However, this issue will be discussed in a second phase, still there is no cost-benefit analysis planned with regard to the current ToR.

Luca Guenzi (EUTurbine - Solar Turbine) asks to which kind of technical minimal requirements the DCC is referring to. Mario replies that discussions have started, i.e., if earthing is part, also discussions between HVDC OEMs and wind OEMs. He continues that issues with grounding are present, which could be regulated but NC HVDC will mainly focus on technical capabilities with regard to voltage frequency regulation, reactive power capability, black start capability, however discussions remain open. Luca further claims that grounding can be important in terms protection interfaces in complex systems. Mario agrees but asks if NC HVDC is the designated document to refer to this topic, which he thinks it is not the correct place to reflect such topics. Luca agrees but also states that a reference would be preferable together with Best Practices. Ioannis Theologitis (ENTSO-E) comments that references could be implemented into NC HVDC but not more.

Uros Gabrijel (ACER) asks if there is a foreseen timeline for the deliverables for Phase II under EG CROS. Mario replies that it's planned to submit the document one year after the Kick-Off meeting, which is planned for end of June, Stakeholders are invited to join. It is appreciated and endorsed by the stakeholders that the EG CROS is working very quickly on the requested reports.

Luca Guenzi (EUTurbine - Solar Turbine) raises the point that PPMs will be part of the NC RfG which will be reviewed before NC HVDC Phase II, where he sees a need to observe common amendments. Uros Gabrijel (ACER) agrees and encourages members to do so.

Thierry Vinas (EURELECTRIC) asks whether it is planned to execute a cost-benefit analysis on whether black start capability is more valuable with offshore parks than with pump storage or gas turbines. Mario explains that all options should be elaborated in Phase II. He continues that however, the focus will be on the technical requirements, not on the approach. Ioannis Theologitis (ENTSO-E) stresses that no CBA will be possible within EG CROS due to timing and a lack of expertise. He continues by giving an example from the past for assessing different options by indicating with colours the opinion of stakeholders. Uros mentiones that Black Start Capabilities are already defined in the NC RfG as a non-mandatory requirement, it is therefore on national level to establish a cost benefit analysis, e.g., to seize to opportunities of capabilities of offshore windfarms.

Luca Guenzi (EUTurbine - Solar Turbine) asks what next steps regarding Phase II of EG CROS are. Uros suggests that EG CROS resumes its work on the basis of the Phase I report, and deliver a detailed ToR based on the Phase I report and today's discussions, which should then be approved during next GC ESC meeting. Eric Dekinderen (VGB) stresses that work should resume, whereas Mario replies that there are already tasks defined within the report of Phase I for Phase II, thus those only need to be integrated into the right format. Mario further points out that the work of EG CROS will be continued. Gunnar Kaestle (COGEN) stresses that for this reason two working phases have been established and the group should continue their work. Uros replies that GC ESC works under certain principles such as the ToR and also encourages Mario to advertise open positions at EG CROS in case expertise is needed for Phase II and also ask GC ESC for advice.

Expert Group: Harmonization of Product Family Grouping and Acceptance of Equipment Certificates in European Level (EG HCF)

Freddy Alcazar (EUGINE) presents the slides (available here).

Eric Dekinderen (VGB) asks what the definition Type A is according with EUGINE. Freddy replies by referring to NC RfG Art. 13 where a series of requirements for Type A units is specified, but he also states that the point of power is an issue, since there is no harmonised structure. Eric suggests changing the definition up to a capacity of 1.000 kW, so that every country can independently decide if this applies to Type A only or to Type B units as well. However, he also suggests defining the value as high as possible, for simplicity which can help to cover as much cases as possible throughout all countries. Freddy informs that specified values are not applicable for some countries, which might cause less commitment of those countries. He also stresses that intense discussions have already happened on this.

Thomas Schaupp (CENELEC) asks what is the scope of the model used at EG HCF. Luca Guenzi (EUTurbine - Solar Turbine) replies that one way the model is used (1) to extend the test that was carried on the unit and use the validation to ensure that other units of the family are good in terms of FRT capabilities and the same way (2) the model can be used to validate the FRT itself. Thomas further asks if the model is not used to validate the plants. Luca informs that this is part of the discussion and says that the focus will be first on the PGU and that certain subgroups work partly on the plants itself, with regard to their connection. He continues that the gap between power generating unit and the point of connection is considered but with less priority. The subgroup first intends to close the part of power generating units and add the remaining to the index. Thomas further asks what the ideas are of closing the gap between the unit and the module of PGMs. He underlines his question by stating that there are different solutions in Europe now. Freddy replies that once you have a valuating model you can do a plant analysis. Those are being done in different approaches, i.e., through certificates or simulation studies where you obtain different information like grid specific information, transport etc., depending on the country's standard. Once you have a properly validated model of the unit, plant level wise testing becomes much simpler, where you can validate specifically the capability. Luca further stresses that FRT requirements are prioritised in EG HCF.

Tony Hearne (EURELECTRIC) asks (1) if the EG intend to limit the consideration of equipment certificate only to Type A and further asks (2) if the families mentioned within PPMs have many variations amongst the PPMs in EG's work. Freddy explains (1) that small units have a simplified approach, but the harmonised approach for certification acceptance would also cover Type B / C / D units. He further refers to question (2) by informing those 3 concepts of family have been considered, notably PGM, PPMs and other PPMs, mainly converter-based PPMs. He provides the example of SPGMs where the controller of the unit or controller of the voltage regulator have to be the same in terms of framework, hardware and software. In a similar way this also applies to purely converter based and wind. Luca stresses that a differentiation of the certificate for Types A, B, C and D is covered in the ToR. Tony further asks if that work will be obligate the system operator to accept the equipment certificate and underlines his questions by stating that Ireland is not advanced up to date to accept an equipment certificate of 15 or 30 MW. Luca replies that certificate should work as an ID card, which can provide proof of some capabilities not of all.

Aren Assiet (EUGINE) refers to question about acceptance of certification and explains why there is a focus on PGU certificates, by saying that the task of a plant owner is to analyse this document and make a decision if it is available for this connection. Also, he says that it's difficult to establish a common approach for all types of units and thus the idea is for countries to accept this certificate is either to go to certificate body to close the gap to a PGM or drafting a document in any role, declaring that all requirements are fulfilled. Thus, you are not obliged to go through all the procedure. He further refers to the topic of distinction between the specific unit types by setting an upper limit, which he sees as problematic in the case of two Gensets of Type A being connected and becoming Type B. Here he suggests the hierarchical structure from NC RfG where Type B requirements base on Type A requirements plus additional items. It needs to be examined whether PGU certificates for Type B units could then be used also for Type A acceptance (Type C for Type B). He continues on the topic of simulation model where he refers to simulation performance two things are present, i.e. (1) required test of characteristics of PGU and (2) test conditions, further he stresses that PGU validation is based on the test under local conditions and that it's difficult to have a validation for a PGM unless you have a test there. Therefore, an analysis is more convenient and mentioned in EN 50549-10, in a section on validation. He also informs that the subgroup is working with real examples and tries to find characteristics which are neutral and can be used to simulate.

Erik Dekinderen (VGB) asks if there is a need also for defining standards for PGM. Aren explains it is not needed.

Sergio Martinez Villanueva (ENTSO-E) refers to low participation of TSOs, which he agrees with. He claims that the proposed questionnaire was not good, which he sees as a reason for the poor contributions. He indicates that REE prepared a proposal with improvements to the questionnaire and proposes to cooperate in order to enhance more contributions. Freddy confirms receiving the proposal and informs that it will be discussed within the group.

Gunnar Kaestle (COGEN) confirms that definitions for Type A and B units differ significantly throughout Europe, therefore he endorses Eric's suggestion to extend the specifications to other unit types, also because mass market units must be standardized in order to obtain compliance verifications. He further stresses that the term "Power Generating Unit" is misleading, since it can also consider a park, not only a single unit, but he also asks how the EG defined the differentiation between converter and non-converter-based technology. Freddy agrees and says that following NC RfG each SPGM genset is an own module, however some countries define a module as all units at one connection point, which are then called power park modules although their centre controls, which makes it difficult to standardize. However, there is always a unit in each genset, thus it's easier to harmonise when there is common certificate approach for units, regardless of the terminology, being PGM or SPGM. Gunnar further asks if there could be a requirement to tidy up the NC RfG in this regard, to which Freddy replies that the problem is not on NC RfG but on national level, since countries are allowed to apply own definitions. Gunnar states that the RfG should not allow national definitions then.

Hariram Subramanian (SolarPower Europe) agrees on a harmonised standard to solar projects, he elaborates that TSOs, and DSOs ask for validation, where there is no proper validation procedure, however in Germany there is a unit-based test procedure, which is also being accepted in some other countries. He further states that currently there is no simulation software which would be able to capture certain things, which then is hindering the process of approval, thus he would endorse a harmonized approach among European countries. Freddy that this issue is being discussed within the corresponding simulation group, where certain requirements are known. Luca stresses that the scope does not imply to define technical standards, but comments and recommendations or even one practical solution. Hariram endorses to propose at least option, which Luca agrees with and says that the aim of the subgroup is to execute an analysis on different approaches and provide indications and recommendations. Aren refers to the topic of simulation software, he says that it's difficult to recommend a certain software and claims that some system operators have given privileged to certain software company, creating a monopole, and also threatens the security of data. He continues that there two approaches for a neutral approach, (1) is for manufacturers to only provide certain parameters to a generic model, however this approach will not be applied in a short time. Luca informs that a dedicated chapter on software was added to the index and conversation are ongoing. Thomas Schaupp (CENELEC) points out that for HVDC there is a similar issue, i.e., here TSOs execute the studies but do not get the models in the needed language. He explains that there is already ongoing work in a designated ENTSO-E project to develop an interface which can be plugged to various simulation models with different languages. He asks if such a solution could be possibly used for smaller units, but also that he doesn't think generic approaches can be used for grid forming or EMT simulations. Aren agrees with Thomas and on the importance of solving the problem.

Sudharsana Govindaswami (Europgen) refers her question to harmonised testing approach by asking if there will be a harmonised approach on how the point of common coupling requirements will be applied at the PGU level under the consideration that a Type B genset can be used in a Type C without the need to additional testing. Aren replies that it's on grid operator's acceptance to this and that the certificate will proof that PGU equipment can fulfil certain requirements. Sudharsana stresses that there is no uniform acceptance across different regions and would endorse a guideline on the harmonisation of validation on PGM level. Aren informs that the point has been noted and will be further taken into account. He continues that there is already discussion whether to introduce component certificates and prototype declarations, as a bypass for new technologies in an early stage as he explains. Sudharsana would appreciate to also implement derogations for machines that are compliant already but under maintenance or have to be tested again after several years.

Bernhard Schowe-van der Brelie (EFAC) refers to the integration of PGU-B unit certificates where he explains that with this certificate you have conformity assessment on NC RfG requirements on Type B, or on national level requirements, and the question is how to integrate this for Type C PGM units. He further informs that the focus of subgroup on harmonized approach for certification acceptance has been on PGU certification and giving notes and information on how to further apply these certificates for a PGM compliance level. If questions remain a site test is then recommended. Sudharsana reacts by raising her concern whether a Type B PGU needs a Type C certificate in case it is not leading to a total power loss of the site when it's being disconnected. Bernhard replies that no generic recommendation can be given here, finally the grid operator has to decide or, where applicable, the certifier. Luca adds that there is a maintenance chapter within his subgroup where those topics are addressed as well. Bernhard further informs that the potential prototype declaration is also subject to his subgroup.

ACTION: EG HCF to provide an adjusted questionnaire according to demanded changes.

3. *CENELEC updates - Status of EN 50549-1 and -2 Status of draft prEN 50549-10:2021*

Thomas Schaupp (Transnet BW) presents the slides (available here).

Eric Dekinderen (VGB) asks whether under-frequency behaves similar to over-frequency in the new requirements for frequency limits in sensitive mode, which Thomas confirms.

Mike Kay (GEODE) asks what is expected to happen with the publication of the EN 50549-10 document. Thomas explains that CENELEC has a fast track where (1) a working group circulates the document with TC, which here happened in 2020, followed by (2) a public inquiry within the member states to collect comments which are integrated, then (3) there is a vote, after which no technical changes are allowed anymore. If no technical changes needed the fast track can be proceed which saves 6 - 12 months. However, there are technical issues identified for the mentioned document it's not feasible, nevertheless CENELEC discusses the option of not addressing those for now and publish an unfinished version. Mike further asks when the publication would happen in case the fast track will be applied. Thomas replies that it would happen end of 2022, thus in case of the normal track in 2023.

Srinavasa Raju (EUGINE) asks if there is a project planned for units Type C and Type D. Thomas says no but endorses the idea of extending the document by implementing tests relevant for Type C and D. However, the current groups would not be addressed to continue their work as they focussed on mass market units. Nevertheless, if there is a need to establish a group CENELEC would be the platform to do so. Thomas invites Freddy to organise a meeting between CENELEC and EG HCF.

Srinavasa further asks if Type B requirements are applicable for Type D in Italy, where capacity of connected units is added and then classified based on the total capacity (many Type B units resulting in Type D). Thomas replies that the related articles on additional requirements, notably 15, 16, 21 and 22, are not covered in the current draft and it's not foreseen to integrate acceptance procedures for Type C and D.

Keith Chambers (Europgen) asks if Thomas could further explain when the decision for publication will be made. Thomas replies the decision is scheduled for 7 June at TC8X. He further explains that a questionnaire has been sent to national committees with a deadline beginning of July.

Gunnar Kaestle (CENELEC) points out that there is a limited interest in grid code at IC level, since in high level there are the needed capabilities for site specific solutions.

Sudharsana Govindaswami (Europgen) asks if a test procedure for units cannot be applied to plants. Thomas explains that the scope of EN 50549-10 is only on units and the site only on site in a complex way. He continues that FRT is covered in the document according with Art. 14 and can be applied to plants regardless of the unit Type. Sudharsana further refers to withstand capability with vector shifts on the PGU level, where GB notified an interest only in protection verification. Thomas explains that the working group is aware of GB's limitation to protection relays however there is need in case of vector ships and jumps that it is important that generating units remain connected. Within EN 50549-10 only test methods are defined not thresholds, whereas in the amendments of EN 50549-1 and -2 those thresholds are specified which are derived from state-of-the-art for withstand capabilities for generating units and converter-based units.

Aren Assiet (EUGINE) asks what is CENELE's opinion of staying in line with NC RfG requirements and what kind of cooperation is planned with ENTSO-E. Thomas replies that there is no plan for extension for Type C and D, CENELEC is not a platform continuously defining standards, it happens on request. Most of members declared the document to be in line with their understanding of NC RfG, thus EN 50549-10 is presenting amendments in line with a common understanding of RfG. Ioannis Theologitis (ENTSO-E) also stresses that if a standard is being established for five years, requirements might naturally change, and cooperation must happen. Thomas further points out the circular reference, i.e., that EN 50549 is referring to RfG and vice versa, thus any amendment must be in balance which happens by working together. Aren underlines that the documents are complimentary und any cooperation is beneficial in order to achieve the same target.

4. AOB

Marco Pasquadibisceglie (Arera) informs on the design of upcoming meetings. It has not been yet decided whether next meetings will be hybrid or only online. In any case physical attendance will not be mandatory. He further informs that probably the scheduled meeting in December will be fully remote. The scheduled meeting in September is potentially planned to take place in Ljubljana. More information will be sent out soon.

Eric Dekinderen (VGB) refers to Action 2 of previous meeting and asks if the requested workshop will be organised by ENTSO-E. Adrian Gonzalez (ENTSO-E) informs that it is foreseen to do so, but agenda points must be submitted in order to avoid redundancies from the first workshop. Erik states he will prepare potential points and send them to ENTSO-E.

Eric further points out that VGB has submitted a list of identified areas that have not been subject to the policy paper of EG ACPPM and encourages members to approach him if they are interested in receiving this list. Marco explains that numerous comments were received which will now be assessed by the corresponding group based on their relevance. He informs the process will be continued in September, whereas the public consultation is foreseen for autumn 2022 followed by a review again. Aleksander Glapiak (ACER) informs that 35 views have been submitted from stakeholders, mainly by generators.

Marco Pasquadibisceglie (Arera) concludes the meeting as the Chair is not attending the meeting at this point of time due to travel issues.

ACTION: Organise joint SO & GC ESC workshop on the topic of RoCoF and inertia. As a required previous step stakeholders are invited to submit topics and open points to conform the agenda of this workshop.

5. *Follow-up actions:*

1. EG HCF to provide an adjusted questionnaire according to demanded changes.
2. Organise joint SO & GC ESC workshop on the topic of RoCoF and inertia. As a required previous step stakeholders are invited to submit topics and open points to conform the agenda of this workshop.