ACER-CEER consultation (6 May-10 June 2022)
Common DSO Response submitted on 10 June 2022

POLICY PAPER on the revision of network code on requirements for grid connection of generators and network code on demand connection

Introduction: this is a first reaction of the European DSOs. Due to the short consultation period, further discussions and finetuning between DSOs is necessary. Our views and proposals may possibly still evolve over time. More input will follow in the consultation to come in September.

- **14. Knowing that the exact proposals for amendments will be sought during the public consultation starting in September, please, provide your general comments or views on this Policy Paper, if any:**

  As a general statement, we would like to emphasize that the experience with the implemented network codes (NCs) RfG and DC is rather limited, not all stakeholders are already used to these new regulations and national regulations or guidelines have only been adapted for a short period. So, we would like to warn for rushing into new requirements too quickly, as not to disrupt or threaten the current achievements in the Member States, especially if we look at electromobility.

  Nevertheless, the policy paper contains much which has been developed and debated by European Stakeholder Committee Expert Groups and the DSOs are broadly very supportive of those initiatives.
  DSOs have been part of most of these Expert Groups and agree with ACER that these topics should be part in some way or another of the revision of the NC RfG and the NC DC.
  We note that some of the proposals here have not been debated by that route, and are probably less mature in terms of their effects being understood.
  Due to the ongoing increase of connection of small PGMs and storage units, especially electric vehicles, to the distribution grids it is important that the requirements in the NC RfG are not inappropriately relaxed for these small installations. Relaxing of requirements could lead to the impossibility for DSOs to guarantee a reliable and secure operation of their grids.

  15. Is there any area that you consider important but has not been covered by this Policy Paper?
  Yes/No/Other

16. Please, elaborate on your answer above, if necessary:
We do not see any reference to the ongoing work regarding certification harmonisation and the use of equipment certificates throughout Europe for the smaller power generating modules. We think this would support the market and lower the barriers for connection to the EU grids.
We also suggest the inclusion of standardised grid user interfaces, i.e. equipment that should guarantee the proper bilateral communication between the grid and user appliances.

- **17. To what extent do you agree with the policy analysis and recommendations on the requirements for pump-storage hydro PGMs:**
5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), 1 (strongly disagree)

18. Please, elaborate on your answer above, if necessary:
The DSOs have little direct experience of accommodating the technology issues of pumped storage hydro and is generally content with the proposals here. However the legal accommodation of the technology should be limited to the absolute minimum, and certainly should not, without good justification, be allowed for new installations where the challenges can be designed out.

- **19. To what extent do you agree with the policy analysis and recommendations on the determination of significance of PGMs:**
5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), 1 (strongly disagree)

20. Please, elaborate on your answer above, if necessary:
The unmodified application of the Type D voltage rule is clearly causing significant problems in some cases.
We agree that the complete removal of voltage criteria for all types of PGMs seems an easy change of the requirement, but is probably not the best solution.
Since the NC RfG is now implemented in all MS, the significance of PGMs has been determined. Especially the limit between type A and type B PGMs is very different in the MS and covers a whole range of thresholds. All MS have found a way to deal with 'determination of significance' of PGMs for their grids that generally works, but does lead to problems of classification because of the voltage rule. Changing or removing the voltage criterion might trigger other needed changes and they can be very different in each MS. This is also linked with the issue of mixed customer sites.
The Expert Group's proposals for a national threshold determined between the Type B and Type C thresholds is a pragmatic solution to the issues and appropriate careful drafting of wording on this is needed.
In relation to the significance of PGMs, we would like to point out that an appropriate rule should be included in NC RfG to avoid unintended split of larger PGMs to fit into a lower category and the related less stringent requirements.

- 21. To what extent do you agree with the policy analysis and recommendations on the technical requirements for mixed customer sites with generation, demand and storage:
  5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), 1 (strongly disagree)

  22. Please, elaborate on your answer above, if necessary:
  A derogation system is acceptable only in exceptional cases, not when it is used in a systematic way, which has been done in some MS. We agree that this is not a proper solution in the long run.
  Issues of significance and of mixed customer sites were both resolved in the proposals of the Expert Group: "Mixed customer sites with generation, demand and storage, and definition of system users." Moreover, MSCs (mixed customer sites) connected within a CDS (Closed distribution systems) should not represent an additional discriminatory treatment versus other distributed resources in this regard. As with Q20 above, we believe that the recommendations of the Expert Group can usefully be adopted to relieve the problems caused by these issues.

- 23. To what extent do you agree with the policy analysis and recommendations on the requirements for type A PGMs:
  5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), 1 (strongly disagree)

  24. Please, elaborate on your answer above, if necessary:
  Again, all MS have chosen the threshold between type A and type B PGM's in such a way that this suited their specific situation. Some MS (e.g. Italy) have chosen a very low threshold between A and B PGM's to include also in smaller PGMs the additional requirements of a type B PGM.
  Adding type B requirements to type A seems a logical evolution, especially FRT but also active power control. At the same time we have to be careful for specific technologies that might not be able to reach all (new) requirements. Exemptions should be part of the solution.
  As a consequence of these additional requirements for type A PGM's some MS will probably change their threshold between type A and type B PGMs.
  Potential impact on commissioning and testing for active power control would have to be considered for the compliance process.
  The Expert Group reporting on this issue provided some excellent analysis, but ultimately some of the choices about the application to different types of technology cannot be easily informed by technical and economic analysis and the Expert Group's report presents some policy options in relation to both thresholds and equipment type. It is likely that decisions on implementing these recommendations have a political dimension, and should also be informed by wider consultation. It is the DSOs' assumption that the development of these proposals will need to include appropriate stakeholder consultation.

- 25. To what extent do you agree with the policy analysis and recommendations on the significant modernisation:

5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), 1 (strongly disagree)

26. Please, elaborate on your answer above, if necessary:

The definition of what constitutes a substantial modification is of great importance, in order to act under the same criteria and have legal support and the current text in the NC RfG and NC DC does not specify any criteria for significant modernisation, which leaves a lot of room for interpretation and MS have implemented totally different approaches. We agree that defining strict criteria for significant modernisation may not be appropriate for some MS (i.e., some countries have already defined national specificities which should be taken into account when proposing changes at European level. It is better to define general principles regarding the electrical characteristics to be considered and/or ranges of possible values of the thresholds concerning the significant modernisation criteria, which will have to be specified at national level by the TSOs and DSOs and approved by the competent authority. This leaves room for some flexibility on MS level.
The Expert Group working on this issue provided valuable development of the principles that should underpin this issue, and developed practical approaches to implementation in Member States.

- **27. To what extent do you agree with the policy analysis and recommendations on the technical requirements for storage:**
5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), 1 (strongly disagree)

28. Please, elaborate on your answer above, if necessary:

We think it is important to include storage in the connection network codes. In some MS requirements have already been integrated in their national/regional legislation.
Many of them based their requirements on what is provided by the EN 50 549-1 & -2.
So integrating storage in NC RfG and NC DC should not ignore the existence and the relevance of these standards.
The DSOs support in full the work undertaken by the Expert Group on this topic. However we now believe that the work is not quite complete in that although the Expert Group made provisions for how storage should respond to frequency falling below norms in an emergency event, it did not address how that storage should behave as the frequency recovers. Although not a particular technical challenge, there does need to be clarity of response in these conditions to both avoid unintended unhelpful behaviour, and also so TSOs can be certain about how the contribution from storage will change as frequency rises. Appropriate development for this characteristic should be built into the developments of proposals.
Since storage would mainly be integrated in the NC RfG, it is important to point out that also the new proposed type A requirements for PGMs, as mentioned above, would be applicable to storage units, especially the possibility to modulate/control active power.

- **29. To what extent do you agree with the policy analysis and recommendations on the electromobility:**
5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), 1 (strongly disagree)

30. Please, elaborate on your answer above, if necessary:

The Expert Group on storage took the view that V1G should be seen as controllable loads, and compliant with the NC DC, to the extent that each V1G installation met the scope requirements of the NC DC. Similarly V2G installations would be treated under the NC RfG as any other non-synchronous generation would be. The EG made no distinction between a single vehicle or an installation comprising many V2G vehicles. Compliance would be at the connection point, and be the responsibility of the site owner.

If we understand the consultation correctly, ACER and CEER are proposing that V2G is treated separately under the NC RfG and that any thresholds so developed are also used in the application of the NC DC.

The DSOs believe this conflates two issues: whether a new NC RfG threshold is appropriate for V2G and whether any threshold should apply to V2G (and V1G?) in demand mode. We don't believe that either of these possibilities were explored by the Expert Group on Storage.

Whilst not ruling these out, the proposals would need further development and analysis. Our initial view is to reflect that of the Expert Group: a collection of V2G vehicles constitute a power park module of type A or B (or theoretically even C) based purely on the aggregation of the capacities at the connection point. If there is sufficient capacity of V2G vehicles connected, then at the connection point the installation will need to behave like a type B power park module. This implies that the installation owner might need to procure appropriate ancillary equipment to ensure that all the type B requirements are met. This should preclude the need for derogations.

Option 1 of the consultation paper's proposals does not seem to acknowledge that once over the ad-hoc threshold, type B performance will still presumably be required. Quite separately it is not clear what is being proposed for NC DC compliance. Is the proposal to use the same threshold as proposed for the ad-hoc type A/B threshold? Would electric vehicles be exempt from NC DC compliance below this threshold?

We accept that these issues are significant because of the scale of electric vehicle roll-out. Time should be allowed for the development of these proposals and their socialization with stakeholders. Unless there is a clear technology reason why owners of V2G installations (i.e. commercial operators of charging hubs etc) should be excluded from the obligations that all other owners of storage face, this becomes a political decision rather than an economic or technical one.

Furthermore, in case 2 with an on-board charger we do not see how this fits in the static NC RfG-procedures. We need to establish that injection is only possible through a beforehand determined access point which is in line with the NC RfG. In paragraph 57 it is stated CGC NCs are only applicable when an EV with on-board charger injects in the grid but injecting in an internal installation is also injecting in the grid, otherwise there will a discussion regarding which electrons have been 'self-consumed' over and which ones were injected. There is only a distinction to be made for end-users with a physical injection limitation.

According to the paper, V1G chargers which do not deliver demand response are not supposed to respect the NC DC requirements. We think however this might be an added value, meaning that each charging point (maybe as from a certain uniform threshold) should be obliged to deliver demand response in extreme circumstances.

- **31. To what extent do you agree with the policy analysis and recommendations on the simulation models and compliance monitoring:**
  5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), 1 (strongly disagree)

  32. Please, elaborate on your answer above, if necessary:
  The DSOs recognize that this is a key issue for TSOs, and is generally content to recognize their need to have the appropriate accurate modelling capabilities. We also recognize that the growth of distributed generation is increasing the needs of TSOs and DSOs to be able to model better the individual and combined effect of that generation. However the requirements need to be mindful of the mass market and lower complexity/capability of equipment and process at DSO level, and not specify requirements that are impractical. The burden on smaller generators should be kept in mind in setting these requirements.

- **33. To what extent do you agree with the policy analysis and recommendations on the advanced capabilities for grids with high penetration of DER:**
  5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), 1 (strongly disagree)

  34. Please, elaborate on your answer above, if necessary:
  It is hard to comment on this. The consultation paper states the evolving situation as many stakeholders see it. However it does not make any clear recommendations. As a context under which new proposals are developed we do fully agree with it. We also believe that smarter networks are the right tool to a more efficient, reliable and clean energy system, but not only. Grid development should take into account several factors through a long term CBA (reliability, impacts on value of load/value of generation, OPEX and CAPEX) and will differ based on local situations and voltage levels. Due care needs to be taken to the possible added requirements to avoid any restriction to future developments and innovation.
  Does this point refer to grid forming capabilities (EG ACPPM)?

- **35. To what extent do you agree with the policy analysis and recommendations on the requirements for weather hazards resilience of generators:**
  5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), 1 (strongly disagree)

  36. Please, elaborate on your answer above, if necessary:
  We note the effect that extreme weather has had on electricity generating infrastructure globally and recognize the need to ensure appropriate mitigations in Europe, but at the same time we recommend not to put additional barriers for small generators (particularly Type A PGMs).
  It seems obvious that temperature conditions as well as storms should be considered, for example considering power electronics that need cooling to operate.
  The DSOs have however no expertise to comment on the detail of mitigation approaches to be applied to generation equipment.

- **37. To what extent do you agree with the policy analysis and recommendations on the technical requirements for active customers/energy communities:**

5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), 1 (strongly disagree)

38. Please, elaborate on your answer above, if necessary:
We indeed see no reason for differentiation between energy communities and other customers of grids regarding the technical conditions of the connection point to the grid. We believe the legal structure and applicability is already clear. The DSOs note that application of the EU NCs will also be dependent on the connection point, i.e. whether the local network is owned by a DSO or CDSO or a third party. In the latter case the connection point is in a different place to the former – and non-synchronous generating units downstream of the connection point will need to be aggregated to form a power generating module.

- 39. To what extent do you agree with the policy analysis and recommendations on the requirements for units providing demand response services:
5 (strongly agree), 4 (agree), 3 (neutral), 2 (disagree), 1 (strongly disagree)

Please, elaborate on your answer above, if necessary:
DSOs are in favour of a new network code on distributed flexibility (demand side flexibility) for all assets connected to the distribution grids offering flexibility services to the DSOs and/or the TSOs.
Hence it makes only sense to move the existing requirements on demand response (at the moment housed in the NC DC) to this new NC, at least for assets connected to the distribution grids and not (only) moving them to the Guideline System Operation.
The need for a new network is confirmed in the letter from the Commission of 1 June to ACER with the request to develop framework guidelines, in which they State in the subject of the letter: "Invitation to submit framework guidelines for the development of a network code based on Art. 59(1)(e) of the Electricity Market Regulation", and further: "I hereby invite ACER to submit non-binding framework guidelines setting out clear and objective principles for the development of a network code on demand response, including rules on aggregation, energy storage and demand curtailment within six months from the date of receipt of this letter.
In its recent Communication "Short-Term Energy Market Interventions and Long Term Improvements to the Electricity Market Design – a course for action" adopted on 18 May 2022 the Commission reiterated its intentions to accelerate the development and adoption of a new network code dedicated to demand response.
Furthermore the letter also stipulates: "To ensure coherence with the regulatory framework set out in the existing network codes and guidelines, the framework guidelines should clearly stipulate if issues identified concern provisions of existing network codes and guidelines and if yes, specify the respective provisions."

In its draft Framework Guideline on Demand Response of 2 June, ACER also mentions:
"The Framework Guideline aims to ensure coherence with the existing regulatory framework by identifying provisions in the existing network codes and guidelines relevant for the requirements of the new rules; these provisions may have to be amended or extended in the context of the development of the new rules, when drafting the network code on demand response.