DSO ENTITY
DSOs FOR EUROPE

# EU DSO Entity Views

## ACER Public Workshop

25th October 2022

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# 1. Introduction on the EU DSO Entity

# 2. Main attention points under discussion on current NC
## (focus on NC RfG and NC DC)

# Introducing EU DSO Entity

**An EU association legally mandated by EU Regulation 2019/943**

> Art. 52.1: Distribution system operators shall ***cooperate at Union level through the EU DSO Entity***, in order to promote the ***completion and functioning of the internal market for electricity***, and to promote optimal management and a coordinated operation of distribution and transmission systems.

**A body of cooperation and neutral expertise between all DSO in the EU**

# EU DSO Entity represent the voice of all EU DSOs and has a clear mandate alongside ACER and ENTSO-E for developing NC

Network Codes & Guidelines

Participates in drafting of Network Codes and Guidelines relevant for DSO grids

- Joint proposal with ENTSO-E on **Network Code (NC) Cybersecurity (14/1/22)**
- **Upcoming Network Code (NC) Demand-side Flexibility**
- **Review of existing network codes (NC)**

DSO/TSO cooperation

Promotes optimal and coordinated planning and operation of DSO/TSO networks

- **MoU** with ENTSO-E (DSO-TSO work plan)
- Cooperation on **Network Codes**
- Joint initiative on **Vision 2050**

Sharing best practice

Expert Groups and forum provide expertise and enable exchange of views

- **Various forms of knowledge sharing** with DSO Entity's members
- Via **project teams** (e.g. events, expert tables)
- **DSO radar reports**

# EU DSO Entity welcomes the general approach outlined by ACER for amending current NCs RfG and DC

- **EU DSO Entity** welcomes the review of the current grid connection codes:
  - NC Requirements for generators (NC RfG).
  - NC Demand connection (NC DC).
- **DSOs' experts** have been actively involved in the preparatory work regarding the review of these NCs, namely in several Expert Groups under the European Stakeholder Committee Grid Connection (GC ESC).
- **EU DSO Entity's objective is to collaborate closely with ACER, ENTSO-E and DG ENER on these amendments.**
- **EU DSO Entity** welcomes forthcoming active involvements with all EU Stakeholders in future amendments of other existing network codes and guidelines such as:
  - Guideline System Operation (SO GL) and in particular the KORRR methodology (on data exchanges)
  - Guideline Electricity Balancing (EB GL)

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# EU DSO Entity Attention Points on Existing NC amendments under focus

## A. Improvements to the Existing Drafting

1. **Mixed Customer Sites (MCS)**
2. **Significant Modernization**

## B. Accommodation of New Technologies and Developments

3. **Technical Requirements for Storage**
4. **Electromobility**
5. **Requirements for units providing demand side services**
6. **Active Customers, Energy Communities, DER**
    a. Advanced Capabilities for grids with high penetration of DER
    b. Technical Requirements for active customers and energy communities
7. **Requirements for type A PGMs**
8. **New ROCOF Immunity Requirements**

# 1. Mixed Customer Sites (MCS)

## Why are relevant for DSOs

- Mixed customer sites are usually a combination of generation, demand and/or storage units
- In relation to this, the voltage criteria used to determine the type of a PGM seems in particular problematic because even small PGMs  embedded in MCSs connected at or above 110kV are being treated

## Attention points EU DSO Entity

- EU DSO Entity supports defining an EU wide solution since derogations at MS level are not a valid long-term approach in most cases
- Expert Groups (established by the Grid Connection European Stakeholder Committee) have already assessed a series of possible solutions considering such as the removal of the voltage criteria up to a threshold
- Nevertheless, the Determination of the **significance of PGMs** is highly relevant for MCS

# 2. Significant Modernization

## Why are relevant for DSOs

- According to Article 4(1) of NC RfG and Article 4(1) of NC DC, existing PGMs as well as existing transmission-connected demand facilities, existing transmission-connected distribution facilities, existing distribution systems and existing demand units that are or can be used by a demand facility or a closed distribution system to provide demand response services to a relevant system operator or relevant TSO are not subject to the requirements of the NCs, except where they have been modified to such an extent that its connection agreement must be substantially revised
- The articles have been interpreted in different ways in the MS, but some additional guidance could be added in the NCs

## Attention points EU DSO Entity

- From the perspective of NC revision, it is appropriate to investigate the possible further improvements and harmonization, bringing more clarity of what is a significant modernization of generation units, demand units, or distribution systems
- The EG on this specific topic defined an approach that can be supported by the DSOs

# 3. Technical Requirements for Storage

## Why are relevant for DSOs

- Grid connection network codes do not elaborate on specific requirements for storage units in their current version
- Following the technological advancement, mature storage solutions are set to gain more significance for the system operation, both for transmission system operators (TSOs) and distribution system operators (DSOs)

## Attention points EU DSO Entity

- Harmonisation prospects for storage grid connection requirements should be defined soon by enriching current NC with specific provisions for storage, where needed
- We encourage clear rules for the treatment of storage when importing as a load, and therefore to the extent applicable, caught by the DCC (or the new NC on demand side flexibility) when acting as a load and when exporting as a generator within RfG
- We see this as a relevant topic for EU harmonization, as some MS have already started the national implementation of rules based on existing EU standards. Therefore, it could be very useful to consider in the new revised version of RfG  the experiences of MS

# 4. Electromobility

## Why are relevant for DSOs

- As EVs proliferate, the number of electrical charging points grows too
- V1G, V2G necessitates an appropriate consideration of the needed technical connection requirements, operational notification procedures and compliance regimes, as already laid down in both the NC DC and NC RfG.

## Attention points EU DSO Entity

- We encourage and promote a full EU harmonization for setting the rules on the technical requirements among all MS
- Considering the mobility of connection points for EVs, a concern of DSOs reflects upon the mandatory use of Equipment Certificates for V2G where the charger is on the vehicle (as opposed to being in a fixed charging point)

# 5. Requirements for units providing demand side services

## Why are relevant for DSOs

- According to the current legal framework, demand response services provided to the system operator by demand units are enumerated in a catalogue of Article 27(1) of NC DC
- Technical requirements concerning the connection of units providing these services are laid down in Articles 28-30 of NC DC, should the unit fall under the scope of the NC DC
- Whether these requirements should remain a part of the NC DC would have to be reviewed

## Attention points EU DSO Entity

- As DSOs we consider  that the requirements should be included in the future NC on Demand Side Flexibility, rather than the transfer in SO GL

# 6. Active Customers, Energy Communities, DER

- Technical Requirements for active customers and energy communities
- Advanced Capabilities for grids with high penetration of DER

## Why are relevant for DSOs

- In the past, the connection rules were conceived for a reality where producers and consumers had defined boundaries but the current situation is no longer able to capture the complexity of the new roles. In particular whether an active consumer shall comply with NC RfG, NC DC or both should be clearly identified
- More and more dispersed generation mainly powered by renewables resources are being installed, resulting in completely different flow patterns in distribution networks.

## Attention points EU DSO Entity

- Further immediate discussion is needed for active customers and energy communities for an EU harmonization.
- Base requirements for each site/customer should be compliant with the RfG and DCC
- Investments are needed to improve DSO capabilities for embracing full technical capabilities on both sides. If it is well-designed, energy communities could also mitigate the infrastructure investment needs

# 7. Requirements for type A PGMs

## Why are relevant for DSOs

- The technical capabilities of power-generating modules have a massive impact on system security. All connected equipment must be sufficiently robust to withstand disturbances and help prevent major interruptions or support the reconstruction of the grid after a collapse

- The EU Member States set different classifications for the threshold values. This results in a range for the threshold between type A and type B, which amounts to between 0.011 MW and 1.5 MW.

## Attention points EU DSO Entity

- As DSOs, we would like to support active (automated) power control requirements on type A similar to type B

# 8. New ROCOF Immunity Requirements

## Why are relevant for DSOs

- Recent discussions at various fora, including the ESC, have reported that studies have been carried out by ENSTO-E, relating to recent separation events on the European Synchronous Area
- Based on these outcomes, ENSTO-E have indicated the need for a ROCOF immunity requirement going forward of up to 4Hz/s

## Attention points EU DSO Entity

- DSOs would like to see further discussion and studies to verify the need for these requirements, particularly based upon experience in the Island of Ireland Synchronous Area
- DSOs acknowledge that these requirements would be on a go-forward basis and speak to the capability of the generators to ride through such events. It is for the industry to speak to any issues in that regard
- However, DSOs would also note that many DSO-driven anti-island protection systems on such generators (including, e.g. domestic solar PV generation), would have settings of 1 Hz/s, or less, applied to them. DSOs would not support moving these settings to the new values proposed without a clear case recognizing the effects on their owners