White Paper
of Charging Interface Initiative e.V. in collaboration with P3 Group

ACER's amendment proposals for the European Grid Codes

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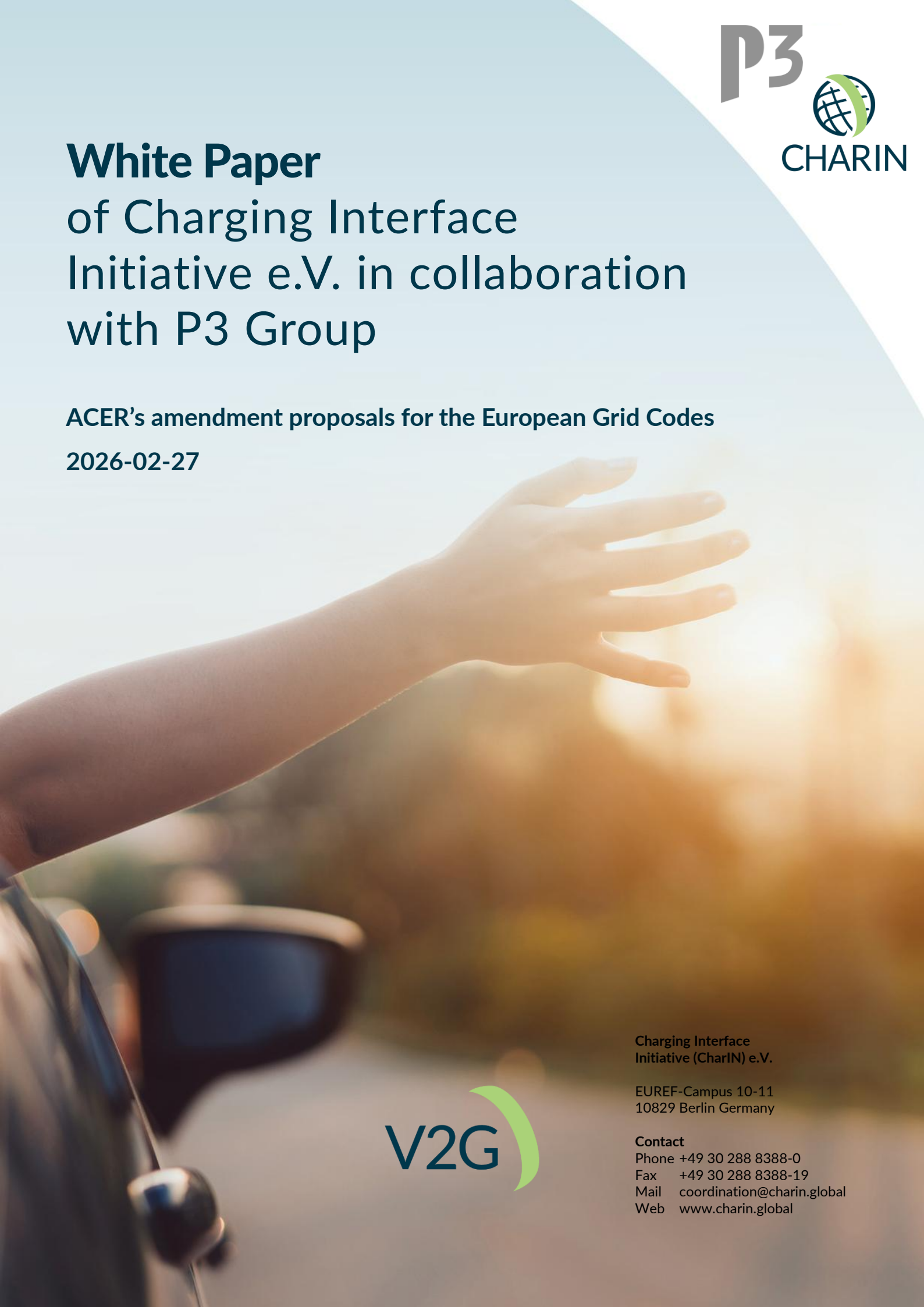

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1. Executive Summary

The European Union's energy transition increasingly requires grid-connected demand-side equipment to meet clearly defined technical connection standards that ensure system stability, resilience, and interoperability. In this context, the European Union Agency for the Cooperation of Energy Regulators (ACER) proposed a series of amendments to Commission Regulation (EU) 2016/1388 — the Demand Connection Code (DCC) — aiming to streamline its scope, increase regulatory clarity, and better align it with the forthcoming Network Code on Demand Response (NC DR).

The core motivation behind ACER's amendment is to separate technical grid connection requirements from operational provisions related to the provision of demand response services. The proposed changes eliminate certain provisions from the DCC and reallocate them to other regulatory frameworks, particularly the System Operation Guideline (SO GL, EU 2017/1485), where the regulation of operational service provision is more appropriate.

Key elements of the proposal include:

- The removal of service-related qualifications and activation provisions for demand response from the DCC, while maintaining baseline technical connection requirements.
- A restructuring of operational notification procedures, compliance testing, and simulations.
- reallocate service-related provisions to operational and market-oriented frameworks, primarily the System Operation Guideline (SO GL) and the forthcoming Network Code on Demand Response (NC DR).
- Clarification of responsibilities between grid operators, demand facility owners, and system users.
- The explicit inclusion of V1G electric vehicles and electric vehicle supply equipment within the scope of harmonized technical connection requirements for demand-side equipment.

These changes mark a shift toward a more modular and integrated regulatory architecture for grid-connected demand units and demand-side flexibility in Europe. By streamlining the DCC and reassigning service-related requirements to more suitable frameworks, ACER aims to reduce regulatory overlap, enhance legal clarity, and remove technical barriers that could otherwise hinder the future eligibility of demand-side equipment for participation under separate market frameworks.

This white paper provides a structured analysis of ACER's proposal for amending Regulation (EU) 2016/1388, outlining its rationale, strategic implications, and anticipated impact on manufacturers of EVs and EVSE, with secondary implications for grid operators responsible for connection approval. It also discusses interaction with other EU network codes and offers actionable insights for manufacturers and developers of demand-side equipment and infrastructure.

2. Introduction

This white paper is based on the ACER Draft Amendment to Commission Regulation (EU) 2016/1388 – the Demand Connection Code (DCC), published in March 2023 with considering the draft version of 2025. While the original DCC and ACER's proposed changes apply broadly to demand facilities and systems connected to transmission and distribution networks, this document takes a sector-specific perspective, focusing exclusively on EVs and EVSEs.

The regulatory environment for EV and EVSE integration into the European electricity grid is evolving rapidly. As charging infrastructure expands and vehicle electrification accelerates, the technical connection requirements applicable to EV charging systems, including EVSE and the combined EV–EVSE interface, are becoming increasingly important to ensure grid stability, interoperability, and resilience. The ACER amendment introduces, for the first time, dedicated technical provisions for V1G electric vehicles and their associated charging installations, as well as other demand-side technologies such as heat pumps and power-to-gas units.

This white paper analyses the amendment from the perspective of EV and EVSE stakeholders, including:

- Vehicle manufacturers (OEMs)
- Charging equipment suppliers
- Charge point operators (CPOs)
- Aggregators and service providers planning to use EVs for grid support

Our analysis focuses on technical requirements—such as frequency and voltage operating ranges, fault ride-through (FRT) capability, Rate-of-Change-of-Frequency (RoCoF) withstand, and Limited Frequency Sensitive Mode – Underfrequency Control (LFSM-UC)—and explains how these requirements impact EV and EVSE design, deployment, and compliance.

We take the ACER draft amendment as the baseline and do not address market operation or demand response service obligations covered under the System Operation Guideline (SO GL) or the forthcoming Network Code on Demand Response (NC DR). Instead, our scope is purely technical—focused on connection compliance for EV-related equipment and EV.

By narrowing the perspective to EV and EVSE systems, this white paper aims to:

1. Provide clear, actionable guidance for manufacturers and operators on meeting new connection standards.
2. Highlight harmonized EU-level requirements that replace varying national specifications.
3. Support interoperable and future-proof EV infrastructure capable of contributing to a stable European electricity system.

3. Overview of ACER's Proposal for EU 2016/1388

3.1. Background and Legislative Context

Commission Regulation (EU) 2016/1388 — the Demand Connection Code (DCC) — is part of the suite of European network codes developed under the Third Energy Package. It lays down harmonized requirements for the connection of demand facilities, distribution systems, and demand units to the transmission system and distribution systems across the EU. Its aim is to ensure secure, reliable, and efficient operation of the interconnected electricity system.

Since its entry into force, the DCC has coexisted with other network codes such as the Requirements for Generators (RfG), the High Voltage Direct Current Code (HVDC), and the System Operation Guideline (SO GL). Over time, however, growing reliance on distributed energy resources, increased electrification (e.g., via EVs and heat pumps), and the emergence of flexible demand response services have challenged the coherence and operational scope of the existing code.

In response, ACER was mandated by the European Commission to prepare reasoned proposals for amending the DCC in parallel with the development of a new Network Code on Demand Response (NC DR). ACER's proposal seeks to ensure that technical requirements remain within the domain of the DCC, while service-oriented provisions are transferred to more appropriate instruments — primarily the SO GL and NC DR.

3.2. Scope and Purpose of EU 2016/1388

The original purpose of the DCC was to define minimum technical requirements and procedures for connecting:

- Transmission-connected demand facilities;
- Distribution-connected demand facilities and systems;
- Closed distribution systems;
- Demand units used to provide demand response services.

Its provisions covered aspects such as frequency and voltage range capabilities, fault ride-through requirements, operational notification procedures, and compliance testing.

The ACER amendment proposes to revise the scope of the DCC by removing elements associated with operational service delivery (such as demand response functionalities). The revised scope will remain focused on:

- Ensuring safe and secure technical connection to the grid;
- Preserving system stability and interoperability;
- Harmonizing connection requirements across Member States.

3.3. Strategic Goals of the Proposal

ACER's overarching strategic intent is to enhance regulatory clarity and efficiency. The proposed amendments aim to:

- Separate technical connection requirements from service provision obligations, in line with the Demand Response Framework Guideline (DR FG);
- Avoid duplication and regulatory overlaps by removing provisions from the DCC that are better governed by the SO GL or NC DR;
- Promote market access for demand-side flexibility by aligning demand response provisions with operational market rules rather than static connection criteria;
- Support harmonization and interoperability across Member States and synchronous areas;
- Simplify compliance processes for demand facilities and reduce administrative burden on stakeholders.

Relation to other network codes and directives the ACER proposal is not developed in isolation. It aligns with a wider regulatory agenda, including:

- The SO GL (EU 2017/1485): Operational rules for system stability, frequency control, and data exchange. Provisions for demand response services are being integrated into this guideline as part of the ACER amendment package.
- The upcoming Network Code on Demand Response (NC DR): Expected to become the central EU-wide framework governing the activation, aggregation, and remuneration of demand-side resources.
- Directive (EU) 2019/944 and Regulation (EU) 2019/943 (Clean Energy Package): Require market-based procurement of flexibility services and non-discriminatory access for demand response.
- The RfG and HVDC Regulations (EU 2016/631 and 2016/1447): Together with the DCC, these form the core of EU grid connection requirements. Harmonization efforts across these codes aim to ensure technical consistency.

In this regulatory context, the amendment to EU 2016/1388 serves as a foundational update — preparing the code to interact more cleanly and efficiently with other instruments, especially as demand-side flexibility becomes central to the energy transition.

4. Comparison with EU Regulation 2016/1388 – What's New and Why It Matters

The amendment to Regulation (EU) 2016/1388, as proposed by ACER, introduces targeted yet impactful changes to the existing legal framework. The revised approach fundamentally restructures the allocation of technical and operational responsibilities and reflects a strategic shift in EU energy regulation — from a static, hardware-oriented model toward a more dynamic, service-based architecture.

4.1. Structural and Scope Expansion

Original Scope:
The original DCC applied to:

- Transmission- and distribution-connected demand facilities;
- Demand units used for providing demand response services;
- Closed distribution systems.

New Focus:
The amended regulation removes the sections related to demand units providing demand response services. These provisions are being relocated to the System Operation Guideline (SO GL) and eventually to the Network Code on Demand Response (NC DR). As a result, the DCC will focus exclusively on technical connection requirements for demand facilities, distribution systems, and closed distribution systems.

This restructuring addresses regulatory overlap, improves clarity, and aligns the DCC with the principle of modular network codes, each serving a clearly defined functional domain.
Of particular importance are the implications for EVs and EVSE. Under the revised DCC, EV/EVSE systems are no longer covered by demand response provisions but instead fall under a new dedicated section that outlines specific technical connection requirements. This includes stringent conditions for frequency and voltage operation, rate of change of frequency (RoCoF) withstand capabilities (e.g., ±4.0 Hz/s for 0.25s), and frequency-sensitive demand response functionalities (LFSM-UC). The new framework thus requires EV/EVSE infrastructure to independently meet high grid resilience standards, without relying on flexibility exceptions previously offered under demand response frameworks.

This restructuring addresses regulatory overlaps, improves clarity, and aligns the DCC with the principle of modular network codes, each serving a clearly defined functional domain.

4.2. Technical Requirement Enhancements

Although most technical provisions remain unchanged, the proposal includes editorial improvements and consistency updates:

- Cross-references to Articles from other EU regulations (e.g. the SO GL) are updated.
- Definitions and terminology are harmonized to match newer network codes and guidelines.
- Requirements referencing now-removed service provision capabilities are deleted or adjusted.

These changes ensure better consistency with the evolving EU regulatory ecosystem, particularly regarding frequency and voltage ranges, fault ride-through capability, and rate-of-change-of-frequency tolerance — now increasingly addressed in other frameworks for operational services.

4.3. Operational Notification and Compliance Procedures

Under the original DCC, Articles 31 to 33 regulated the operational notification procedure for demand response service providers. These included:

- Confirmation of technical capability to provide demand response;
- Notification steps for energization, operation, and compliance.

What changes:

- These provisions are being removed from the DCC.
- They will be reintegrated into the SO GL and new NC DR under operational testing and qualification frameworks.

This reallocation is logical: demand response services are no longer treated as a subset of grid connection, but as market-based ancillary services. Hence, the procedures for qualifying demand units are shifting into the operational domain, where they can be better aligned with flexibility markets and system operator practices.

4.4. Coordination with Other Codes and Harmonization

The amendments also address long-standing issues of inconsistency and duplication between the DCC and:

- SO GL (2017/1485): Operational behavior of connected units;
- Electricity Regulation (2019/943): Ancillary service procurement;
- Future NC DR: Market access, aggregation, and baseline methodologies.

For example, requirements such as:

- Frequency and voltage operating ranges,
- Rate-of-change-of-frequency withstand,
- Control functionality (e.g. reactive power control)

are now fully within the scope of the SO GL for service provision and is not operating as a basic load and grid component, but as a flexibility provider.

4.5. Rationale Behind the Changes

ACER's reasoning is grounded in the principle of functional clarity:

- Grid connection rules should define the safe, secure, and technically robust conditions under which any unit can be connected to the grid.

- Service provision rules (like those in the SO GL and NC DR) should govern how those units, once connected, participate in ancillary services, flexibility markets, or balancing.

This separation reflects modern system needs: with increasing decentralization, the EU must clearly distinguish between the technical and commercial/operational roles of demand-side units. The amendment enhances:

- Regulatory transparency for all stakeholders;
- Legal certainty in compliance and enforcement;
- Flexibility for future service market designs.

5. Technical Requirements

The proposed amendment to Regulation (EU) 2016/1388 (Demand Connection Code, DCC) refocuses the regulation on its original purpose: to define harmonized technical requirements for the grid connection of demand facilities and systems. While provisions related to demand response service delivery are being removed and transferred to operational codes, the DCC retains a robust set of technical obligations aimed at ensuring secure, reliable, and non-discriminatory access to the European electricity grid.

This chapter outlines the key technical requirements from the currently available draft of the amended DCC, as published on March 2025, by ACER. Please note that several points have already been subject to change.

5.1. Voltage and Frequency Operating Ranges

The DCC continues to define the voltage and frequency conditions under which demand facilities must be capable of operating. These requirements are essential to ensure equipment resilience and interoperability across the interconnected European electricity system.

- Frequency range: Typically, demand facilities must withstand a frequency range of 47.5 Hz to 52.0 Hz
- Voltage range: Facilities must remain connected and operational across a specified voltage range of 0,85 pu – 1,1 pu at the connection point. The exact minimum and maximum voltage thresholds may be further specified or tightened by the relevant system operator within this range, in line with the applicable grid code and national implementation of the DCC.
- Duration capability: Equipment must remain connected for specified durations under off-nominal conditions without malfunction or disconnection.

These specifications are particularly relevant for manufacturers of industrial equipment, charging infrastructure, and building management systems to ensure compatibility with grid resilience expectations.

5.2. Fault Ride-Through Capability

- Fault ride-through (FRT) remains a key technical requirement in the DCC for transmission-connected demand facilities and for distribution-connected demand facilities that are classified as “significant” according to the relevant system operator’s criteria (e.g. installed capacity or impact on system security). This category is expected to include a large share of EV charging infrastructure, meaning that many EVs and their associated EVSE will fall under FRT requirements. **Objective:** To prevent large-scale disconnections of major electricity consumers during grid disturbances.
- **Requirement:** Equipment must remain connected and stable during short-duration voltage dips, such as those caused by transmission faults.
- **Specification:** While in the original DCC the fault profile (depth, duration, voltage recovery) was defined by the relevant system operator, the revised regulation introduces a harmonized voltage-

against-time profile specifically for V1G EVs, their charging infrastructure (EVSE), power-to-gas units and heat pumps.
This predefined FRT profile is binding and ensures that such equipment can withstand voltage drops down to 0 V for several hundred milliseconds, depending on the fault shape.
For these units, DSOs are no longer allowed to modify this profile, which provides clarity and predictability for manufacturers across the EU.
The standardized FRT curve effectively guarantees consistent fault ride-through performance across Member States.

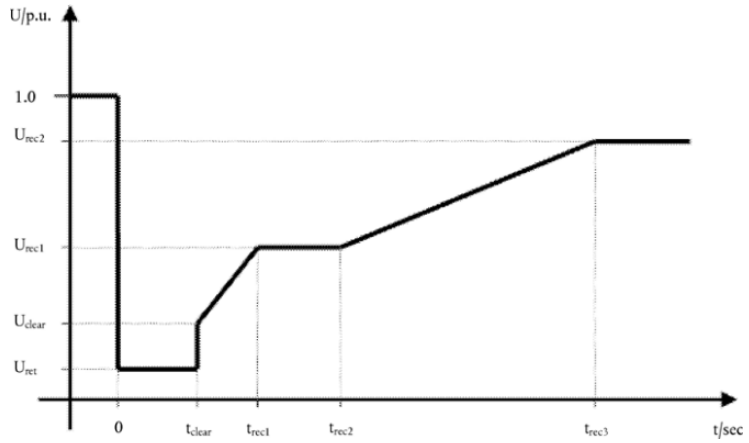

Figure 1 Predefined Fault ride-through profile

FRT capabilities are critical to maintain system integrity during disturbances and inform design requirements for motors, converters, and power electronics used in high-power demand units.

5.3. LFSM-UC

For V1G EVs, their associated charging points or installations, and power-to-gas demand units, the following requirements apply:

- **Active Power Reduction:**
  They shall be capable of automatically reducing their active power consumption from the current input down to the minimum technical operational level, when the frequency threshold is reached and with a droop setting.
- **Droop Setting:**
  The droop shall be set at 5%.+
- **Frequency Threshold:**
  - For general synchronous areas: 49.8 Hz
  - For synchronous area IE and Nordic: 49.5 Hz
- **Operation Below Frequency Threshold:**
  The unit shall remain in this specific mode as long as the system frequency stays below the threshold. If the frequency recovers, the unit shall continue to follow the same power-frequency characteristic until its prior active power input level is restored.
- **Minimum Technical Operating Level:**
  If the minimum technical operating level is greater than 20% of P_{ref}, the unit shall disconnect once this level is reached.

- **Reconnection Delay:**
  If disconnection occurs according to the above, a random time delay of up to 5 minutes shall be applied after the frequency returns above the threshold before normal operation resumes.
- **Frequency Measurement Requirements:**
  - Maximum measurement time window: 100 ms
  - Measurement accuracy: ± 30 mHz
- **Stable Operation:**
  Stable operation during LFSM-UC mode must be ensured at all times.
- **Response Time:**
  The response time for LFSM-UC must be less than or equal to 0.5 seconds. The relevant system operator may request technical evidence demonstrating compliance with this response time.

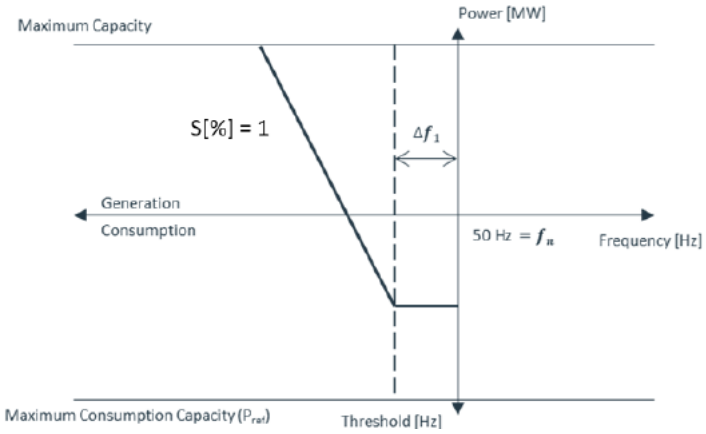

Figure 2 LFSM-UC requirements

5.4. **Rate-of-Change-of-Frequency (RoCoF) Withstand Capability**

As part of ensuring system stability, demand facilities are expected to tolerate certain rates of change in system frequency (RoCoF), which may occur during significant imbalances or islanding conditions.

- **Requirement:** Equipment must remain connected and operational during RoCoF events within defined thresholds.
- **New Provision:** For specific technologies — notably V1G EVs, associated EVSE, power-to-gas units and heat pumps — the revised DCC introduces a binding and harmonized RoCoF withstand capability as per Article XX(2) of the draft. These include tolerance of RoCoF values up to:
  - ±4.0 Hz/s over 0.25 seconds
  - ±2.0 Hz/s over 0.5 seconds
  - ±1.5 Hz/s over 1 second
  - ±1.25 Hz/s over 2 seconds

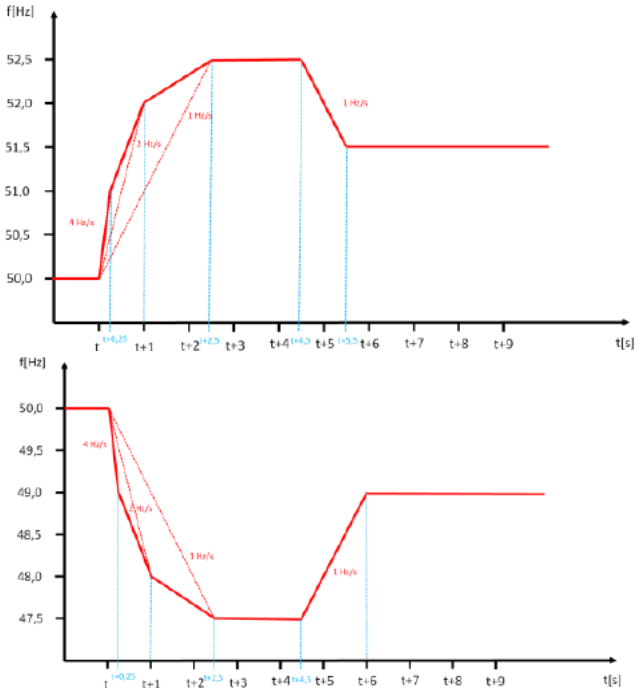

Figure 3 RoCoF tolerances

- **Purpose:** To avoid unintentional disconnection of demand units during transient frequency fluctuations and increase system resilience.
- **Impact:** This new harmonized specification replaces previously operator-defined values and ensures a consistent technical baseline across Member States. It also gives manufacturers planning certainty, especially for EV/EVSE systems, by removing DSO-level deviations.

5.5. Compliance Demonstration and Testing Framework

Although some aspects of compliance testing for demand-side response are covered in the System Operation Guideline (SO GL), the amended DCC clearly retains relevance for EV and EVSE. According to the proposed amendments:

- Demand facility owners, including those operating EV charging infrastructure, are responsible for demonstrating conformity with technical requirements such as frequency stability, voltage operation, and response times, typically by using equipment conformity certificates, manufacturer test reports, or, where required, on-site compliance tests agreed with the relevant system operator.
- For EVSE connected above 1000 V, compliance must be documented through a Demand Unit Document (DUD), including a statement of compliance and relevant technical data;
- System operators may still require equipment certificates or verification procedures prior to issuing the Final Operational Notification (FON).

This ensures that all connected EV-related equipment contributes to predictable grid behavior and supports secure system operation.

6. Requirements for Manufacturers

The proposed amendment to Regulation (EU) 2016/1388 (Demand Connection Code, DCC) brings important clarifications and simplifications for equipment manufacturers whose products are intended for connection to the European electricity grid. By narrowing the DCC's focus to purely technical connection requirements, ACER eliminates regulatory ambiguity for manufacturers of demand-side equipment such as industrial machines, electric vehicles (EVs) and EV supply equipment (EVSE), HVAC systems, and energy management systems.

This chapter outlines the key manufacturer-relevant requirements and changes arising from the amendment, with a particular focus on equipment design, interface compliance, and certification.

6.1. Clarified Scope: Focus on Connection, Not Services

Under the amended DCC, manufacturers are responsible only for ensuring that their equipment complies with technical requirements for grid connection — not with operational service provisions such as demand response capabilities. Specifically:

- These service-related aspects are now regulated under the System Operation Guideline (SO GL) and the forthcoming NC DR and only apply to assets intended for service provision.
- From the perspective of EVSE, this does not represent a tightening of requirements compared to the original NC DC: EVSE were not explicitly covered as a distinct category of demand units before, and the draft amendment does not introduce a dedicated new set of NC DC connection requirements for EVSE.

Implication:

Manufacturers of standard consumption equipment (e.g. building management systems, industrial automation, EVs and EV supply equipment) remain primarily subject to connection-related technical requirements under the DCC. They are not subject to additional service-oriented requirements unless the equipment is explicitly designed and configured for participation in flexibility or demand response markets, in which case the SO GL and the future NC DR become relevant.

6.2. Simplified Compliance and Testing Path

The amendment reduces the compliance burden for manufacturers by clearly delineating the responsibilities of equipment suppliers versus system operators and service providers. From the perspective of EVSE, this does not represent a tightening of requirements compared to the original NC DC, as EVSE were not explicitly covered before; the draft primarily clarifies responsibilities rather than introducing new obligations.

Manufacturers must:

- Provide certificates demonstrating conformity with DCC technical parameters; in practice, manufacturers often rely on European stakeholder coordination bodies such as the European Stakeholder Committee (ESC) and dedicated working groups to interpret requirements and align test documentation formats with the expectations of system operators.
- Support system operators with simulation models if required for grid studies.

- Ensure that equipment supplied to grid-connected facilities includes all relevant certificates and user-adjustable settings for interface compliance.

Manufacturers are not responsible for:

- Operational testing for demand response capabilities (this falls under the SO GL and is the responsibility of the demand facility owner or aggregator);
- Service prequalification procedures or baseline methodologies.

6.3. Benefits of the Amendment for Manufacturers

In summary, the ACER amendment mainly benefits manufacturers by:

- Clarifying responsibilities between connection compliance and optional service functionality;
- Enabling clearer product differentiation between “grid-compliant” and “grid-service capable” devices;
- Avoiding unnecessary obligations for service functionalities that are not explicitly intended or marketed.

These aspects have been discussed in previous sections; this subsection consolidates them from a manufacturer’s perspective.

It also aligns with broader EU goals on:

- Facilitating innovation in smart energy products;
- Encouraging modular compliance paths that support competitive technology development.

Existing AC-Connected EV:

In the context of evolving technical requirements, it is essential to preserve the operational viability of EVs that have already been homologated.

This approach ensures that neither manufacturers nor consumers are retrospectively penalized by regulatory shifts. It safeguards past investments, provides planning certainty, and prevents unintended market disruption. Moreover, it supports the continuity of the European electromobility rollout by maintaining compatibility and trust in the regulatory framework.

7. Need for Action

The proposed amendments to the DCC are not merely technical refinements but represent a paradigm shift in how demand-side resources are recognized, integrated, and managed within the European electricity system.

As electrification accelerates—driven by electric mobility, heat pumps, and digitalization—the boundary between passive demand and active system participation is disappearing.

The DCC amendment acknowledges this evolution by embedding technical requirements that enable secure and flexible operation of demand facilities as integral components of the grid.

However, successful implementation requires coordinated and timely action by all stakeholders. Without proactive adaptation, the European power system risks inconsistent application, fragmented compliance standards, and delayed market integration of innovative demand-side resources.

7.1. For Manufacturers

Product design updates:

Manufacturers of EVs, EVSE, and other demand-side technologies must integrate new compliance parameters into product design and control logic.

The adoption of harmonized Fault-Ride-Through (FRT) profiles and Rate-of-Change-of-Frequency (RoCoF) withstand levels implies revalidation of power electronics and protection schemes. This ensures interoperability across Member States and supports cross-border equipment deployment.

Documentation and certification:

Transparent and standardized documentation becomes a cornerstone of compliance. Manufacturers will need to provide clear, verifiable evidence that their products fulfil the DCC requirements. This documentation will serve both system operators and demand facility owners and ensure traceability in case of audits or grid incidents.

Innovation opportunities:

The amendments enable clearer separation between grid connection compliance and functional service capabilities.

This structural distinction allows manufacturers to develop differentiated product portfolios, such as:

“Grid-compliant” devices meeting only baseline connection standards, and

“Grid-service capable” devices with enhanced functionalities for frequency support, demand response, and flexibility provision.

Functional Split – National Implementation Perspectives:
While the DCC amendment introduces harmonized technical requirements at the European level.

Several Member States have already initiated or embedded first implementation concepts that address how grid-related functionalities, such as Fault Ride Through (FRT), Limited Frequency Sensitive Mode

(LFSM), or RoCoF withstand, should be ensured at the grid connection point.
These national approaches differ in granularity but share the principle that compliance must be verifiable at the connection interface, irrespective of where the functionality resides technically (in the EV or in the EVSE).

Country	Relevant Regulation / Code	Compliance Method
Austria	OVE-Guideline R 37	Test report
Germany	VDE-AR-N 4100 / VDE-AR-N 4110	Certification (Just for VDE-AR-N 4110)
Italy	CEI 0-21 (LV) / CEI 0-16 (MV)	Manufacturer declaration of conformity (complemented by a test report)

7.2. For Demand Facility Owners and Operators

Compliance readiness:

Operators of demand facilities, ranging from charging parks and industrial consumers to smart buildings, must evaluate their existing assets against the new technical thresholds.

Early compliance assessment allows for strategic investment planning, avoiding last-minute retrofits once the revised DCC enters into force.

Clear separation of roles:

The updated framework explicitly differentiates between connection compliance and market participation. Facility operators must ensure their grid connection obligations are fulfilled independently from optional service participation (e.g. flexibility markets or aggregation schemes).

This separation increases operational clarity and supports risk management in contractual arrangements.

Investment certainty:

By aligning early with the new requirements, operators can safeguard grid access, maintain eligibility for incentives, and position themselves for participation in emerging demand-side markets.

Failure to act promptly could result in stranded assets or loss of market participation opportunities once the Network Code on Demand Response (NC DR) becomes operational.

8. Conclusion

The European Union's energy system is undergoing a structural transformation, with decentralized, flexible demand-side resources playing an increasingly important role in maintaining grid stability and enabling market-based system services. In this context, the European Union Agency for the Cooperation of Energy Regulators (ACER) has taken a decisive step by proposing targeted amendments to Regulation (EU) 2016/1388 — the Demand Connection Code (DCC).

The essence of ACER's proposal is a strategic unbundling of technical and operational requirements. It removes from the DCC all provisions that relate to the provision of system services, such as demand response, and reallocates them to the System Operation Guideline (SO GL) and the forthcoming Network Code on Demand Response (NC DR). This change is both practical and forward-looking.

8.1. Key Achievements of the Amendment

- Enhanced clarity: The amended DCC focuses solely on grid connection requirements, eliminating regulatory overlaps with operational codes.
- Streamlined compliance: Market actors and manufacturers now face better-defined obligations, reducing ambiguity and administrative burden.
- Alignment with evolving EU goals: The proposal reflects the principles of the Clean Energy Package, notably non-discriminatory market access and market-based procurement of services.
- Improved modularity: Network codes become more functionally specialized, facilitating their application, enforcement, and future adaptation.

8.2. Implications Moving Forward

For grid operators, the amendment simplifies the scope of their responsibilities under the DCC and reinforces their role in ensuring secure and compliant connections. For market participants and aggregators, it clarifies that demand response obligations now belong to a separate operational and market-access framework. For manufacturers, it offers a more stable design environment with a clear separation between mandatory technical compliance and optional service capabilities.

The amendment also lays the groundwork for the Network Code on Demand Response, which will become the cornerstone for integrating flexible demand-side resources into EU electricity markets. In this new architecture, connection is decoupled from participation, enabling more scalable and modular development of both infrastructure and services.

8.3. Final Remarks

The amendment to EU Regulation 2016/1388 is not merely a technical adjustment—it is a strategic realignment of the regulatory framework to support a more flexible, integrated, and market-driven European power system. By re-establishing the DCC as a pure connection code, ACER has improved the usability and coherence of the EU's network code framework and paved the way for more effective deployment of flexibility at all voltage levels.

As the European energy transition accelerates, this clearer, more modular approach will help all stakeholders — from grid operators to equipment manufacturers — to navigate the complexity of the new electricity system with greater confidence and efficiency.

9. Glossary

ACER (Agency for the Cooperation of Energy Regulators)
The EU agency responsible for coordinating and overseeing the implementation of the European internal energy market. ACER develops proposals for amendments to EU network codes, such as the Demand Connection Code (DCC).

Aggregator
An entity that combines the flexibility of multiple consumers, prosumers, or EVSE to offer aggregated demand-side services to the electricity market or system operators.

Charge Point Operator (CPO)
An entity responsible for installing, operating, and maintaining EVSE. CPOs manage grid connections, user access, and payment systems for charging infrastructure.

Commission Regulation (EU) 2016/1388 – Demand Connection Code (DCC)
An EU network code that defines harmonized technical requirements for connecting demand facilities, distribution systems, and certain demand units to the electricity grid.

Demand Unit Document (DUD)
A compliance document required for demand units (including EVSE) connected above 1000 V, containing technical data, simulation models, and a statement of compliance with DCC requirements.

Distribution System Operator (DSO)
An entity responsible for operating, maintaining, and developing the electricity distribution network, and connecting demand units such as EVSE to the grid.

Droop Setting
A percentage value that defines how much load reduction is applied per Hz of frequency deviation in LFSM-UC operation.

Electric Vehicle (EV)
A road vehicle powered entirely or partially by an electric motor, using energy stored in rechargeable batteries. In the context of the DCC, refers to grid-connected V1G electric vehicles that consume power for charging.

Electric Vehicle Supply Equipment (EVSE)
Hardware and software systems that provide electrical energy for recharging EV batteries. EVSE includes charging points, connectors, metering devices, and control electronics.

Fault Ride-Through (FRT)
The ability of grid-connected equipment (including EVSE) to remain connected and stable during short-duration voltage dips or faults, following a specified voltage-against-time profile.

Final Operational Notification (FON)
The formal approval issued by the system operator confirming that a demand unit meets all connection requirements and can remain permanently connected.

Frequency Operating Range
The permissible deviation from nominal frequency (50 Hz in Europe) within which EVSE must operate without disconnecting from the grid.

Limited Frequency Sensitive Mode – Underfrequency Control (LFSM-UC)
An automatic control function that reduces EVSE charging load when grid frequency falls below a set threshold, helping prevent system collapse.

Minimum Technical Operating Level (MTOL)
The lowest active power level at which an EVSE or EV can operate without negative effects on its primary function (e.g., battery charging).

Network Code on Demand Response (NC DR)
A forthcoming EU regulation that will set the operational and market rules for demand-side flexibility participation, including EVSE offering grid services.

Original Equipment Manufacturer (OEM)
A company that designs and manufactures products — in this context, EVs or EVSE — to meet both market needs and regulatory requirements.

Rate-of-Change-of-Frequency (RoCoF)
A measure of how quickly system frequency changes, expressed in Hz per second. RoCoF withstand capability ensures EVSE remains connected during sudden frequency shifts.

System Operation Guideline (SO GL)
An EU network code governing the operational aspects of electricity system stability, frequency control, and data exchange. In the new framework, demand response provisions are moved here from the DCC.

Transmission System Operator (TSO)
An entity responsible for the bulk transmission of electrical energy at high voltages and for ensuring system stability. TSOs approve the connection of high-voltage EVSE and large charging hubs.

V1G Electric Vehicle (V1G EV)
An electric vehicle capable of unidirectional charging from the electricity grid to the vehicle battery. V1G does not export electricity back to the grid.

10. Reference

This document was created by the Focus Group Grid Integration & Energy of the

CharIN Association. The purpose of this document was to provide stakeholders with a clear and structured assessment of ACER's proposal to amend Commission Regulation (EU) 2016/1388. Its purpose is to explain the regulatory rationale behind the proposed amendments, outline their implications for demand-side equipment—particularly EVs and EVSE—and clarify how the redistribution of technical and operational requirements across the DCC, SO GL, and the forthcoming Network Code on Demand Response affects manufacturers and grid operators. By consolidating relevant context, interpreting ACER's intentions, and analyzing impacts on future compliance obligations, the document aims to support informed decision-making and ensure industry readiness for the evolving EU regulatory framework on demand-side flexibility. This is a list of some of the most important reference documents considered by

CharIN:

The normative standard/document references utilized to prepare these recommendations are as follows:

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