



# The Scope of the Definition of Electric Vehicles

This document is the EU DSO Entity's understanding of the intent of the Network Codes.

10 March 2025

## Table of Contents

Scope of the document.....	3
Definition of an Electric Vehicle .....	3
National law and zero emissions policies.....	3
NC RfG 2.0 and NC DC 2.0 .....	3
What are the consequences?.....	4
Work on international and EU standards.....	4
Examples links to products and developments in Member States .....	4

## List of Abbreviations

CENELEC	European Committee for Electrotechnical Standardization
DSO	Distribution System Operator
ENI	Emissionfree Network Infrastructure
EV	Electric Vehicle
EVSE	Electric Vehicle Supply Equipment
IEC	International Electrotechnical Commission
ISO	International Organization for Standards
NC DC	European Network Code for Demand Connections
NC RfG	European Network Code Requirements for all Generators

*Table 1 - list of abbreviations*

## Scope of the document

This short document is about the definition of an electric vehicle for the purposes of understanding the application of the NC RfG 2.0 and NC DC 2.0.

It is intended as a briefing for all stakeholders, but particularly for DSOs and for EV and EVSE manufacturers.

Please note that this short document is based on the EU DSO Entity's understanding of the intent of the legal draft of the Network Codes.

## Definition of an Electric Vehicle

When we discuss electric vehicles, we used to think of electric cars, lorries or buses etc. But actually, a vehicle is more than an electric car, we should keep in mind a wide interpretation. To give an impression, see the quote of the definition from Wikipedia:

An **electric vehicle (EV)** is a vehicle whose propulsion is powered fully or mostly by electricity. EVs include [road](#) and [rail vehicles](#), [electric boats](#) and [underwater vessels](#), [electric aircraft](#) and even [electric spacecraft](#).

We can conclude that: to cover the scope of the NC RfG 2.0 and NC DC 2.0 for electric vehicles we need to have a good understanding of the implications of the definition that should be interpreted as widely as possible.

## National law and zero emissions policies

Many EU member states have developed specific low or zero emissions policies which are already strongly incentivizing all businesses to eliminate fossil fuels from their operations.

These policies apply to many sectors, but the focus of this short document is primarily on the building and construction industries, which is replacing historic installations and combustion vehicles with modern electric versions.

## NC RfG 2.0 and NC DC 2.0

We just want to remind you that for all electric vehicles which are recharging from the grid, we must take the NC DC 2.0 into account.

If the electric vehicle is exporting active power to the grid, then the NC RfG 2.0 will apply.

The NC RfG and NC DC do not apply to any vehicle simultaneously. For a EV/EVSE combination that both exports and imports, all the requirements fall under NC RfG.

## What are the consequences?

It means that (for example) the NCs are applicable for electrical mining machines, bulldozers, earth movers and excavators.

We want to make sure that the application of the NCs to these types of vehicles is not overlooked by DSOs and the manufacturers of all these vehicles.

Equally shipping is under pressure to decarbonize and many ports are electrifying their harbours to provide the necessary power for the ships using them. The electrical connections to ships are essentially fixed within the port and the NC DC 2.0 will apply. Of course, if a ship can export active power to the grid, then the NC RfG 2.0 will apply instead.

## Work on international and EU standards

Significant work is being undertaken by international and European standards bodies (ie IEC, ISO and CENELEC) in adapting existing Electric Vehicle (EV) and Electric Vehicle Supply Equipment (EVSE) standards for road vehicles, including trucks, lorries busses and bicycles, in order to ensure compliance with the NC RfG 2.0 and NC DC 2.0.

## Examples links to products and developments in Member States

Some typical examples of developments:

### **Airplane:**

<http://heartaerospace.com/newsroom/heart-aerospace-to-conduct-first-fully-electric-experimental-flight-in-plattsburgh-ny/>

### **And this one is already available on the market, Electric Crawler Excavators:**

<https://www.volvoce.com/europe/en/products/electric-machines/ec230-electric/>

### **Full electric vessels:**

<https://www.wartsila.com/marine/products/ship-electrification-solutions/full-electric-vessels>

### **A good example of national approaches is:**

<https://www.emissielosnetwerkinfra.nl/english/82/development-requirements-for-zero-emission-construction-equipment-en-markets> in the Netherlands.

The association ENI has summarized the design requirements for zero emission machinery that has emerged from the real world experience gained by front-runners in the Netherlands since 2020. ENI has also published the lessons learned on the development of the market in the Netherlands and in which way it benefits the transition towards Zero Emission constructions.