

- 
- European ecosystem for V2G



Researching & testing
smart and sustainable charging

The future — — of European competitiveness

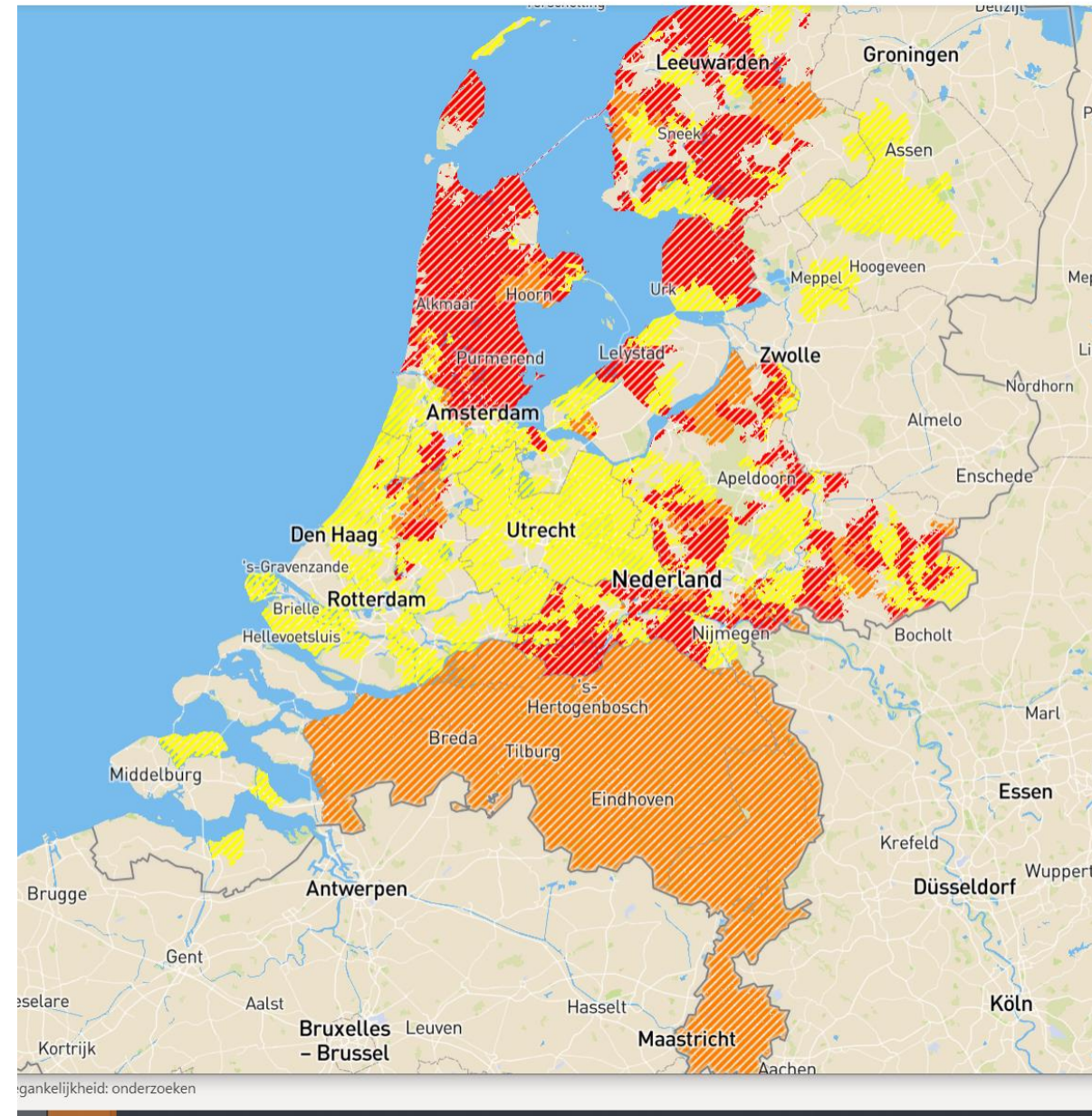
European Commission
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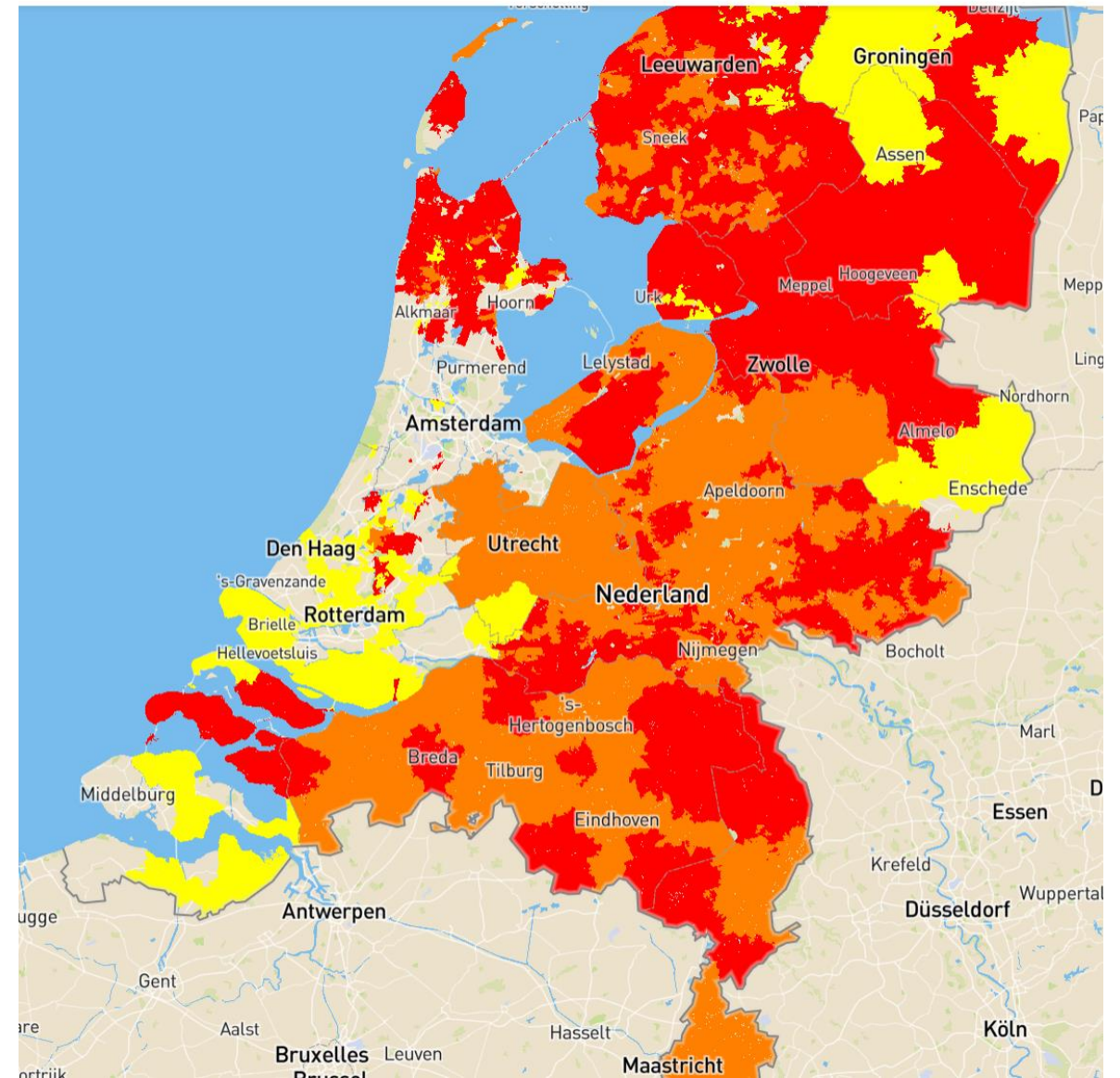
Capaciteitskaart afname elektriciteitsnet

Bijgewerkt: 13-10-2022 08:30



Capaciteitskaart invoeding elektriciteitsnet

Bijgewerkt: 13-10-2022 08:30



Consumer behaviour

Smart Charging

- Very high willingness to use smart charging, but not all consumers are satisfied with how the technology works.
- Almost all the EV drivers in every country agree that smart charging should be easy and user friendly. They want to have control, insight and financial gain.
- The original equipment manufacturer received the overall highest level of trust in terms of handing over control, but many respondents also stated that they only trust themselves and no third party.

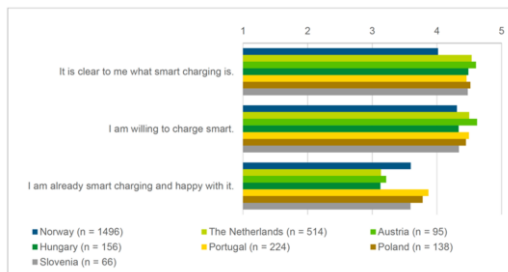


Figure 3: To what extent do you agree with the following statements about smart charging? On a scale from 1 (strongly disagree) to 5 (strongly agree).

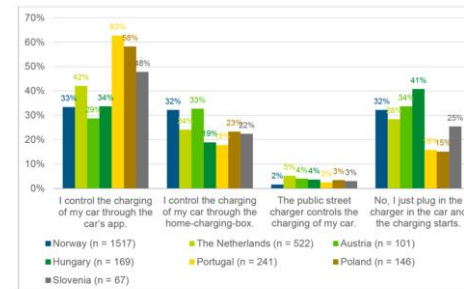
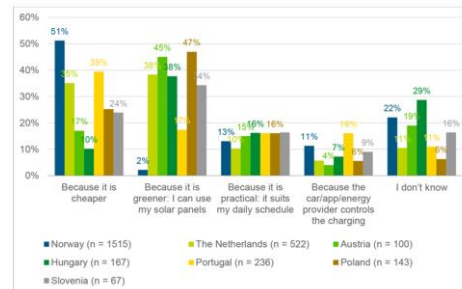
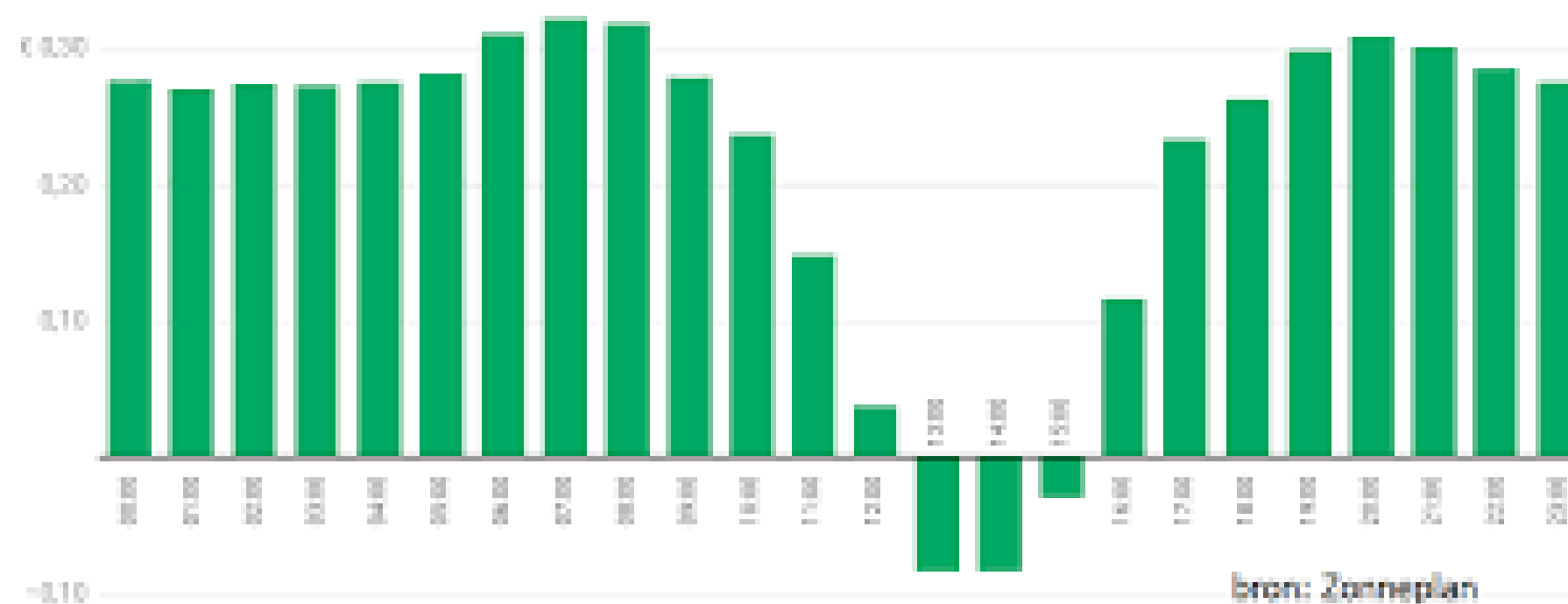


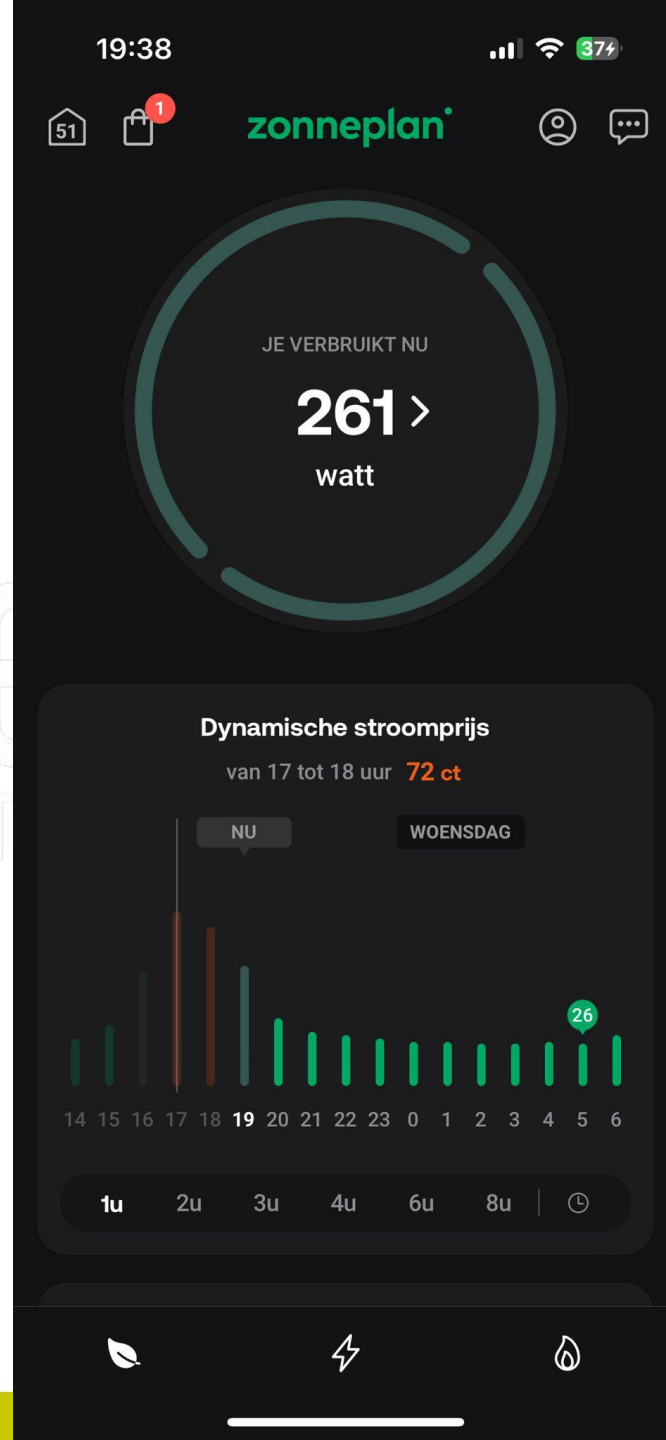
Figure 5: Do you control the charging of your car/do smart charging?



Dynamische stroomprijzen 19 april 2023

EPEX day-aheadprijs per kWh + overheidshellingen







EHS-HS station (van 220-380 naar 110-150 kV)



Enkele per regio

Zon: >75 ha, >75 MW
Wind: x stuks van >3 MW

HS-MS station (van 110-150 naar 3-23 kV)



4-6 aan randen
stad (HS-MS of
TS-MS)

Zon: 4-49 ha, ong 4-49 MW
Wind: <4 stuks van 3 MW

MS-MS station (3-23kV)



20 voor de wijken in
de stad

Zon: 1-3 ha, ong 1-3 MW
Wind: 1 stuk van <1 MW

HS-TS station (van 110-150 naar 25-66 kV)



Niet altijd aanwezig.
Enkele meer dan
EHS-HS station

Zon: 50-75 ha, ong 50-75 MW
Wind: <25 stuks van 3 MW

TS-MS station (van 25-66 naar 3-23 kV)



4-6 aan randen
stad (HS-MS of
TS-MS)

Zon: 4-49 ha, 4-49 MW
Wind: <4 stuks van 3 MW

MS-LS station (van 10-23 naar 0.4 kV)

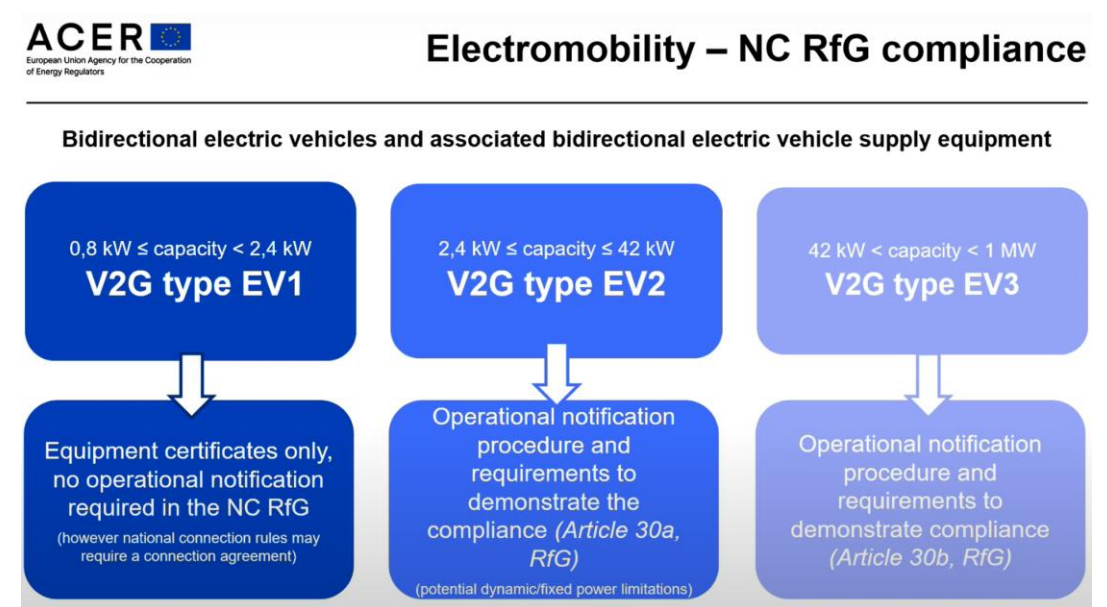
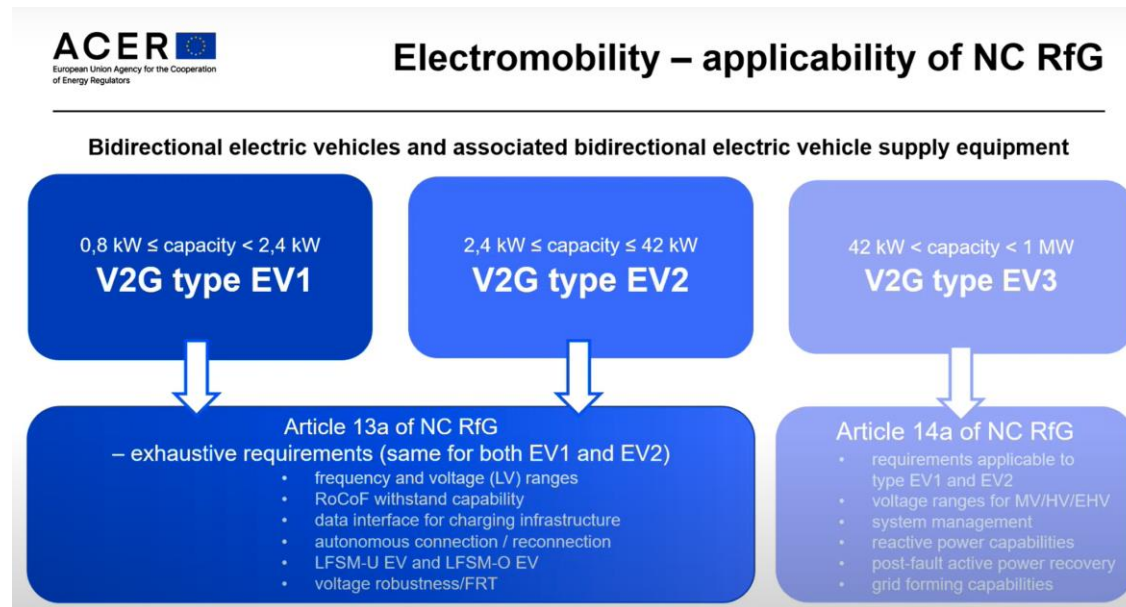


500, meerdere
per wijk

Grid codes



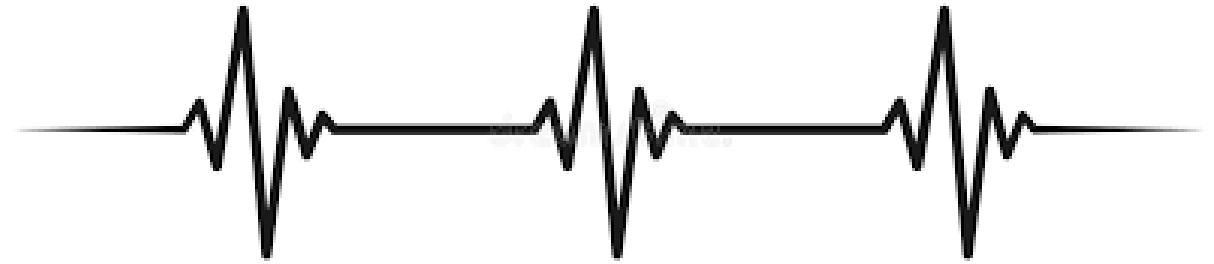
By the end of 2023 ACER submitted to the European Commission proposed amendments to the network code on requirements for grid connection of generators which establishes common standards that generators must respect to connect to the grid.



Different grid code; similarities!



- Adjust your behavior according to the grid frequency and voltage
- Listen to a stop signal if things go wrong
- Continue operation despite grid disturbance, if everybody stops, a cascade effect makes
- Detect if the grid is down, do not feed back into the grid when it is down, and when the grid restores, reconnect with care



Different grid code; similarities!



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Standardisation





WE DRIVE SOLAR

mywheels

#NLFR

mywheels

WE DRIVE SOLAR

Plan charging infrastructure 2030

► Kaart:

Verbeelding van het plan laadinfrastructuur 2030:




Personenvervoer

 = 5.700 openbare laadpalen (11kW) (naast 30.000 private laadpunten)


 = 460 kortparkeer snelladers bij winkels en sport-voorzieningen (50-180kW)


 = 60 hoog vermogen stations langs de ring (350kW)


 = 10 snelladers voor taxi's bij de bufferplaatsen

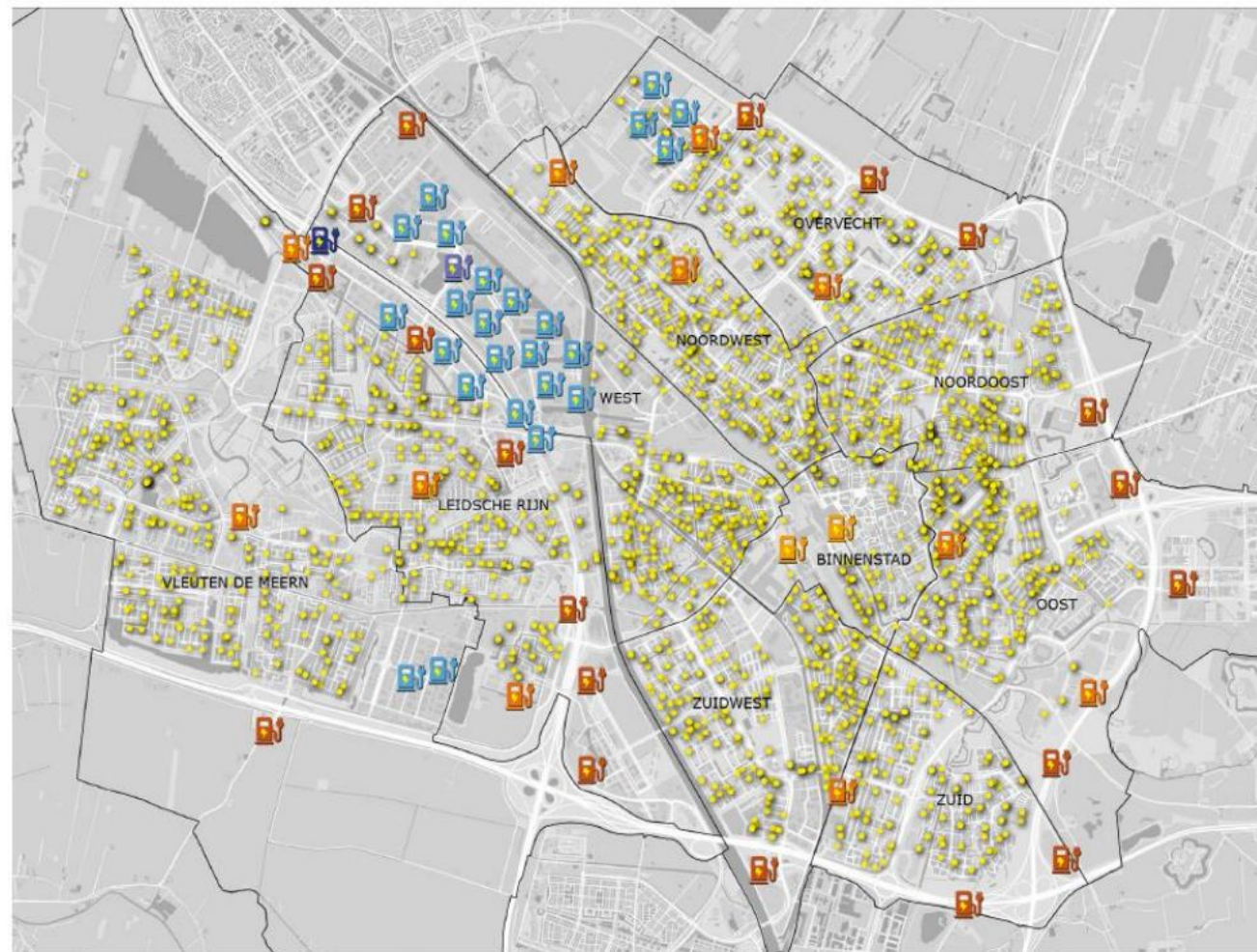


Logistiek

 = 330 DC depotladers voor vrachtwagens (50-150kW)

 = 2-4 DC laders voor vrachtwagens bij truckparking (50-150kW)

 = 58 ultrasnelladers voor vrachtwagens (500-1500kW)



Demonstrations



Partners



OEMs



E-mobility fleet & software



Research & knowledge institutes



Cities & associations



DSOs & TSOs



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Markets

The Day Europe's Power Grid Came Close to a Massive Blackout

By [Jesper Starn](#), [Brian Parkin](#), and [Irina Vilcu](#)

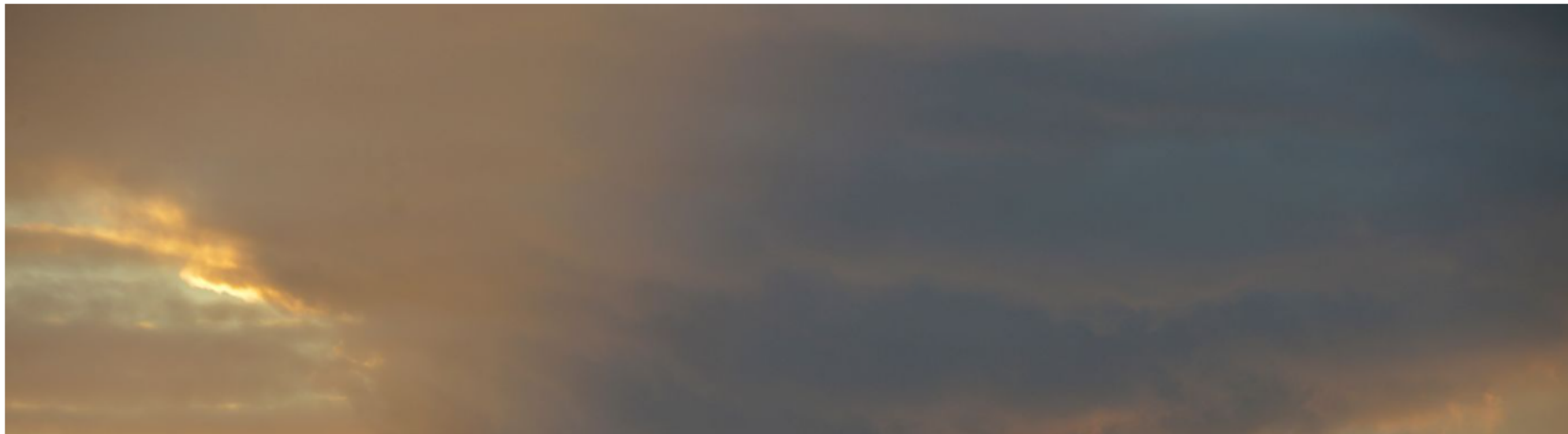
27 januari 2021 07:00 CET *Updated on 27 januari 2021 12:46 CET*

- ▶ A sudden split of the European continental grid caused concern
- ▶ Less coal and more wind makes it harder to balance network

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