PRESS RELEASE

SCALE advances the smart charging and Vehicle-2 Grid (V2G) ecosystem capitalizing on the mass-deployment of electric vehicles

SCALE is a new Horizon Europe project that kicked off in June 2022. Leading European cities, universities and knowledge partners, networks, and energy and electric vehicle (EV) industry pioneers joined forces to explore and test smart EV charging and Vehicle-2-Everything (V2X) solutions. This will shape a new energy eco-system wherein the flexibility that EV batteries offer, will be harnessed for the first time at Scale.

SCALE is a 3-year project co-funded by the new Horizon Europe Programme with a budget of ca. €10 million.

SCALE contributes to the European Partnership "*Towards zero-emission road transport"* (2ZERO). The uptake of EVs in a mass-deployment scenario, coupled with the flexibility of renewable energy generation, could form the basis of a de-centralized power system simultaneously decarbonizing both transport and energy sectors.

In Europe, the mass deployment of electric vehicles is driven by the EU Smart Mobility strategy, EU Green Deal and the interim Fitfor55 Package, all aiming for a climate-neutral Europe. Recent registration figures in the EU show that EVs are gaining in popularity. Increase in the sales of EVs impose significant impact on energy demand and on the power system. This leads to the need for implementing smart and digitally controlled charging systems and preparing energy networks to utilize the surplus energy stored in EV batteries through state-of-the-art V2X technologies. In fact, mass-deployable innovations to seamlessly integrate EVs into the power system will increase the energy efficiency and the share of renewable energy in households, neighborhoods, industries, cities and regions. This would have a particularly high impact on reducing carbon emissions.

SCALE's different V2X solutions and innovations will be systematically tested, validated and deployed across various demonstration sites and use cases in Europe, thus, being globally the first-of-its-kind attempt at this scale.

SCALE's strategic objective is to create an open system solution, deploying a user-centric approach, thus reducing the need for power grid reinforcement investments through smart charging and V2X solutions.

SCALE paves the way to achieving the Fitfor55 goals. The project will test and validate a variety of smart charging and V2X solutions and services in 13 use cases in real-life demonstrations in 7 European contexts: Oslo (NO), Rotterdam/Utrecht (NL), Eindhoven (NL), Toulouse (FR), Greater Munich Area (GER), Budapest/Debrecen (HU) and Gothenburg (SE). The project involves Distribution System Operators (DSOs), public authorities, and e-mobility service providers.

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In addition, SCALE has identified four Innovation Clusters where smart charging and V2X is either already playing a significant role or will become a necessity in the next years:

The project sees charging solutions as a continuum of a) unidirectional static, b) dynamic & c) bidirectional charging with the latter two charging concepts moving beyond state-of-the-art technology offering a systemic solution. Project results, best practices, and lessons learned will be transferred across EU cities & regions, as well as relevant e-mobility stakeholders. SCALE aims to create a system blueprint for user-centric smart charging & V2X for European cities & regions.

The consortium comprises cutting-edge European e-mobility actors. It is led by ElaadNL, one of the world's leading knowledge and innovation centres in smart charging and charging infrastructure.

SCALE builds upon the progress and the future plans of the first bi-directional region in the world, Utrecht. The twenty-nine partners, covering the entire smart charging & V2X value chain include leading original equipment and charging manufacturers (Hyundai, Renault, SONO, Polestar, VDL, ABB), DSO/TSOs (LVN, Enedis, Equigy), Flexibility Service Providers (Enervalis), Charge Point Ooerators (CPOs) and e-Mobility Service Providers (We Drive Solar, GoodMoovs, Current, EMS), public authorities (City of Utrecht), research & knowledge partners (ElaadNL, Bayern Innovativ GmbH, RISE, Trialog, CERTH, University of Utrecht, Chalmers, FIER, Rupprecht Consult), European networks & multipliers (POLIS, UEMI, AVERE), as well as consumer associations (Elbil) from eight countries are working together for three years to exploit the untapped potential EVs and renewable energy offer to the power systems and the energy ecosystem.

Quick facts:

- SCALE is funded by the European Union Horizon Europe Research and Innovation Programme, GA number: 101056874
- Duration: 1 June 2022 – 31 May 2025
- Pilot sites: Oslo (NO), Rotterdam/Utrecht (NL), Eindhoven (NL), Toulouse (FR), Greater Munich Area (GER), Budapest/Debrecen (HU), Gothenburg (SE)

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