SUSTAINABLE ENERGY WEEK 2024

BUILDING RESILIENT & JUST ENERGY SYSTEMS

16-20 SEPTEMBER 2024 | PALAIS DES NATIONS | GENEVA

Group of Experts on Cleaner Electricity Systems (twentieth session; agenda item 7)
Group of Experts on Energy Efficiency (eleventh session, agenda item 8)
Group of Experts on Renewable Energy (eleventh session, agenda item 7)

Inter-sectoral cooperation on cross-cutting issues: Electrification of mobility: development of infrastructure, integration with grid, resource planning

17 September 2024
11h30 - 13h00 CEST (Geneva time)
Palais des Nations (Room XXI)

About the Session

Objective:

To discuss possible ways and means to adopt e-mobility policies and instruments in the UNECE region.

Context:

Exploring the impact of electric mobility integration on electric system design and operation is a key development of future and resilient energy systems. As the number of electric vehicles (EVs) on the road continues to increase, questions arise about the readiness of the energy infrastructure to support this growth. This includes not only ensuring there are enough charging stations available, but also considering the impact on the broader electricity grid, energy generation, and spatial planning.

There are opportunities to leverage EVs as assets within the energy system, such as providing grid services through vehicle-to-grid (V2G) technology. However, there are also constraints to consider, such as interoperability between EVs and charging infrastructure, cybersecurity threats, and the need for smart grid technologies to manage the increased demand from EVs.

Electric mobility is an enabler of the digital and green transformations in the UNECE region. Policymakers are increasingly supporting e-mobility adoption and enhancing of EVs expertise through various tools and support mechanisms.

The session will discuss the impacts of electrification of mobility on development of infrastructure, its integration into the electricity grids and required planning of resources for this, along with the issues of accessibility, land use, and location efficiency.

The discussion will take advantage of the outcome of a workshop held in Georgia on international legal instruments and best practices on use of renewable energy in transport. This capacity-building workshop gathered relevant Georgian stakeholders in the transport and energy sectors with the aim of strengthening future coordination.

Documentation:

GECES-20/2024/INF.2-GEEE-11/2024/INF.2-GERE-11/2024/INF.2	Integration of e-mobility into electricity system, and the impact that it has on the latter's design and operations

Tentative timeline:

11h30 - 11h40: Introduction and setting the scene

Nadejda Khamrakulova
Secretary, Group of Experts on Cleaner Electricity Systems, UNECE

11h40 - 12h40: Moderated discussion

Moderator:

Elliot Romano, Senior Scientist, Institute for Environmental Sciences/Université de Genève

Panellists:

Jim Robb, North American Electric Reliability Corporation**,** Chair GECES

Stefan M. Buettner, Institute for Energy Efficiency in Production; Chair GEEE

Nikoloz Kholodov, Ministry of Economy and Sustainable Development of Georgia

Furugzod Usmonov, Vice-Chair GECES

Nataliia Fiebrig, Ukraine2Power

Roel Janssens, UNECE Transport Division, Secretary WP.5

12h40 - 13h00: Open discussion

Proposed questions for discussion:

- What specific enhancements are needed in grid infrastructure to handle the additional load from widespread EV adoption?
- How can smart grid technologies be implemented to manage and distribute this increased demand efficiently?
- How feasible is the widespread implementation of V2G technology, and what are the potential benefits and challenges?
- What measures and legal instruments are necessary to ensure the interoperability and cybersecurity of EV charging infrastructure?
- What policies and incentives can encourage the adoption of EVs and the development of necessary infrastructure?

Group of Experts on Renewable Energy

Group of Experts on Energy Efficiency

Group of Experts on Cleaner Electricity Systems