

# Transatlantic Partnership for E-mobility



## Interoperability for Infrastructure Rollout

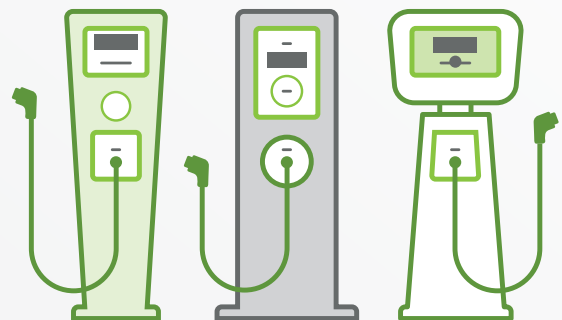
The European Commission's Joint Research Centre (JRC) and the U.S. Department of Energy's Argonne National Laboratory (ANL) are leading the work on electro-mobility and interoperability with smart grids within the Climate and Clean Tech Working Group of the EU-U.S. Trade and Technology Council (TTC). This cooperation supports EU and U.S. commitments to clean energy and decarbonisation and responds to the forecasted increase of global sales for electric vehicles (EVs).

The JRC and ANL have published joint EU-U.S. technical recommendations for government-funded implementation of charging infrastructures, with the aim of: bringing more certainty to public authorities and private investors; improving the quality of infrastructure; minimising trade barriers; increasing economies of scale and strengthening EU and U.S. industries.

1

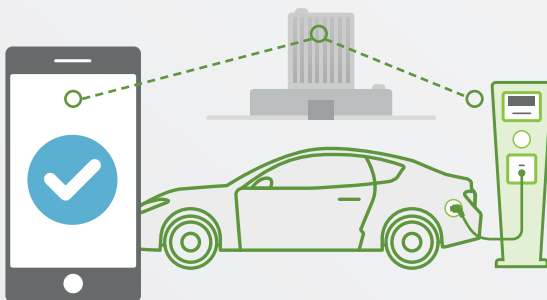
### Interoperability

Compatible standards for EV charging protocol and hardware contribute to the global rollout of e-mobility. They make every charging device work with every EV at either low- or high power charging levels. The JRC's and ANL's common pre-normative research addresses this interoperability.



### Improved Digital Charging Services

2

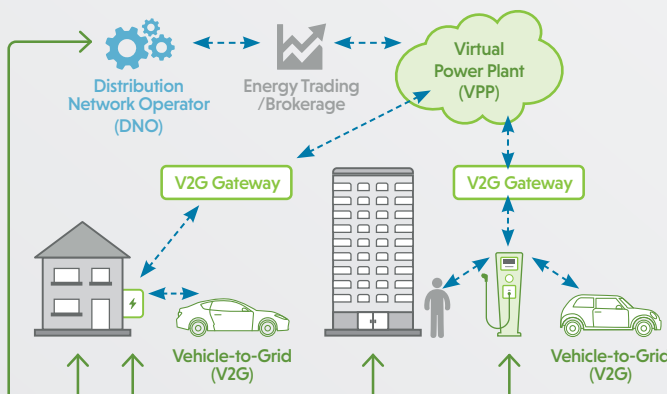


A new generation of user-friendly charging devices will provide convenient services and data management, including interoperable roaming, automated billing, and booking of charge points on mobile devices. Back-end offices managing many charging columns can do this but require interoperable communication. A digital link between the EV and charging column is also needed, as is already common in fast charging.

3

### Smart & Grid-Friendly Charging

Harmonised communication standards enable charging to become "grid-friendly." Charging columns are informed by digital gateways when to temporarily adapt the charging power catered to "their" EVs. This helps to manage the grid, stabilise its frequency and reduce power demand peaks over time. Selling such "charging flexibility" creates new business models.



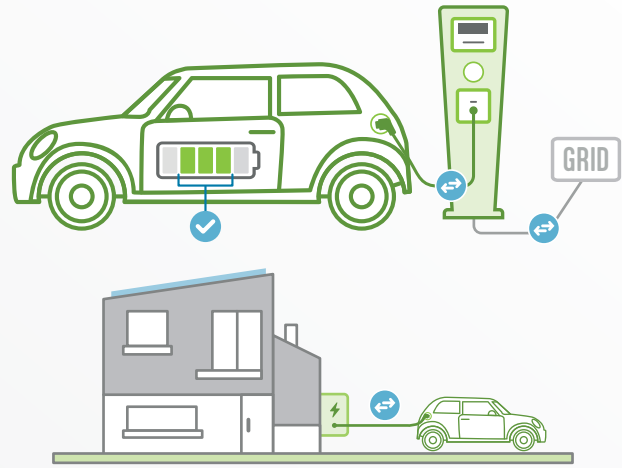
**Working with stakeholders plays a key role in making the green transition a reality. We will continue to collaborate closely with industry experts, manufacturers and business associations to advance the electrification of transport in the EU and the U.S.**

*Stephen Quest, Director General,  
Joint Research Centre, European Commission*

# 4

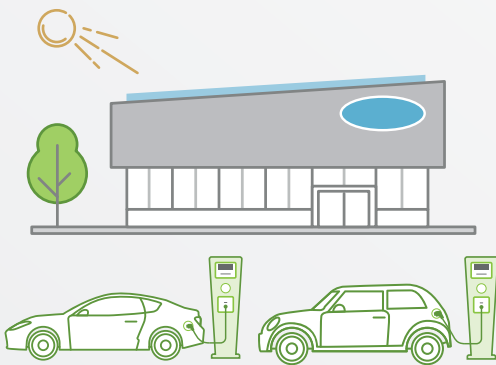
## Bidirectional Charging

When EVs are not in use, and at circa 30%-70% state-of-charge, they can deliver electricity back to grids via smart charging columns. Homes, larger buildings, and even micro-grids could temporarily use electricity stored in the EVs connected to them. To achieve this, bidirectional communication is needed between EVs and charging columns.



## Smart Workplace Charging

# 5

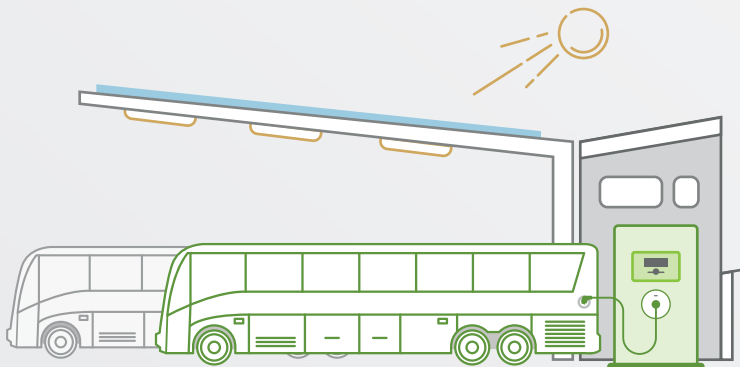


Most people still commute to work by car, making workplace charging an efficient way of harnessing the benefits of daytime solar electricity. This adds an important incentive for the EU and the US to expand large solar roof installations in a grid-friendly manner. The ideal buildings to equip with workplace charging are those where a predictable number of staff are regularly parking, such as hospitals where staff work in shifts. The building manager could replace expensive back-up generators with bidirectional charging columns.

# 6

## Stakeholders

To successfully improve standards and testing methods, the JRC and ANL involve industry stakeholders in their pre-normative research. Stakeholder engagements include workshops and dialogues with vehicle and charger manufacturers, energy companies, and regulators. This enables industry to develop new business concepts for e-mobility. For instance, if commercial transport businesses want to electrify their fleet, they require new charging technologies based on common standards.



**Partnerships—between nations as well as among private industry, government, and stakeholders—are essential to accelerate EV adoption and create affordable, accessible mobility options that benefit all people.**

*Michael Berube, Deputy Assistant Secretary for Sustainable Transportation and Fuels, U.S. Department of Energy*

