

1

The energy transition in the power distribution grids can be successful, even if all passenger vehicles are electrified. Grid-friendly charging reduces the peak loads created when vehicles and electric heat pumps are charged simultaneously. It can also shift electricity consumption to times with abundant generation from solar photovoltaics and wind turbines.

2

Combining grid-friendly charging with the broader mobility transition can fund the energy transition in the electricity distribution grids by 2050, supplying 1.5 billion euros of annual investments in power lines and transformers. Without the mobility transition, annual investments of 2.1 billion euros would be needed to accommodate 45 million, instead of 30 million, electric cars.

3

Electromobility can finance the expansion of the distribution network until 2050. Electric mobility increases electricity sales, while the overall investment needed for power lines and transformers does not increase. However, it is important that the participants in the mobility transition pay their fair share of grid fees.

4

Smart charging can be designed to ensure that users hardly notice any restrictions. To achieve this, grid-friendly managed charging must become the standard. We need secure information and communications technologies, incentives and, if necessary, obligatory managed charging. Precautionary indirect control, in the form of incentives for grid-friendly charging, should take precedence over direct control by the distribution grid operator.