



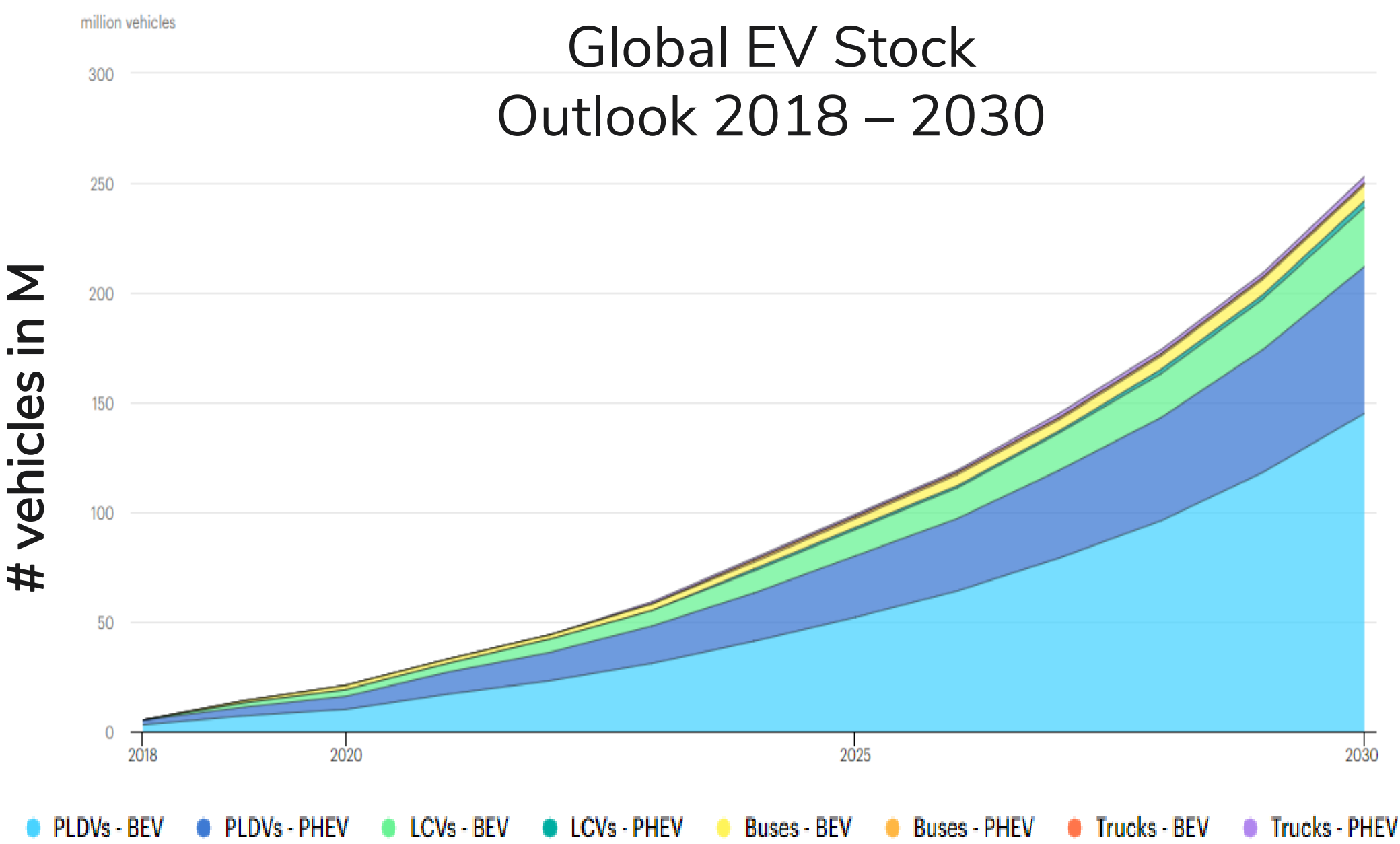
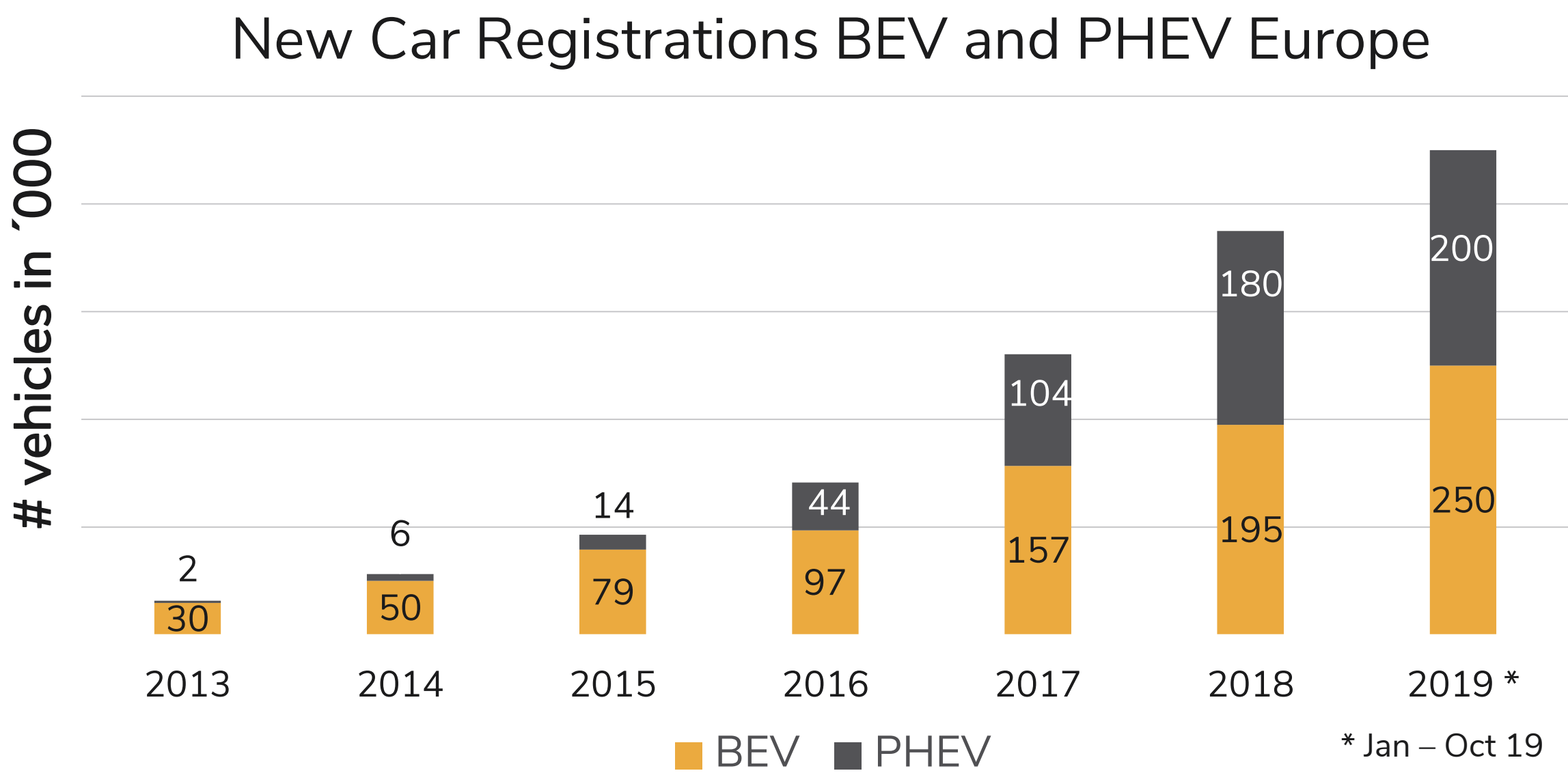
The smart potential of e-Mobility



We are eeMobility!

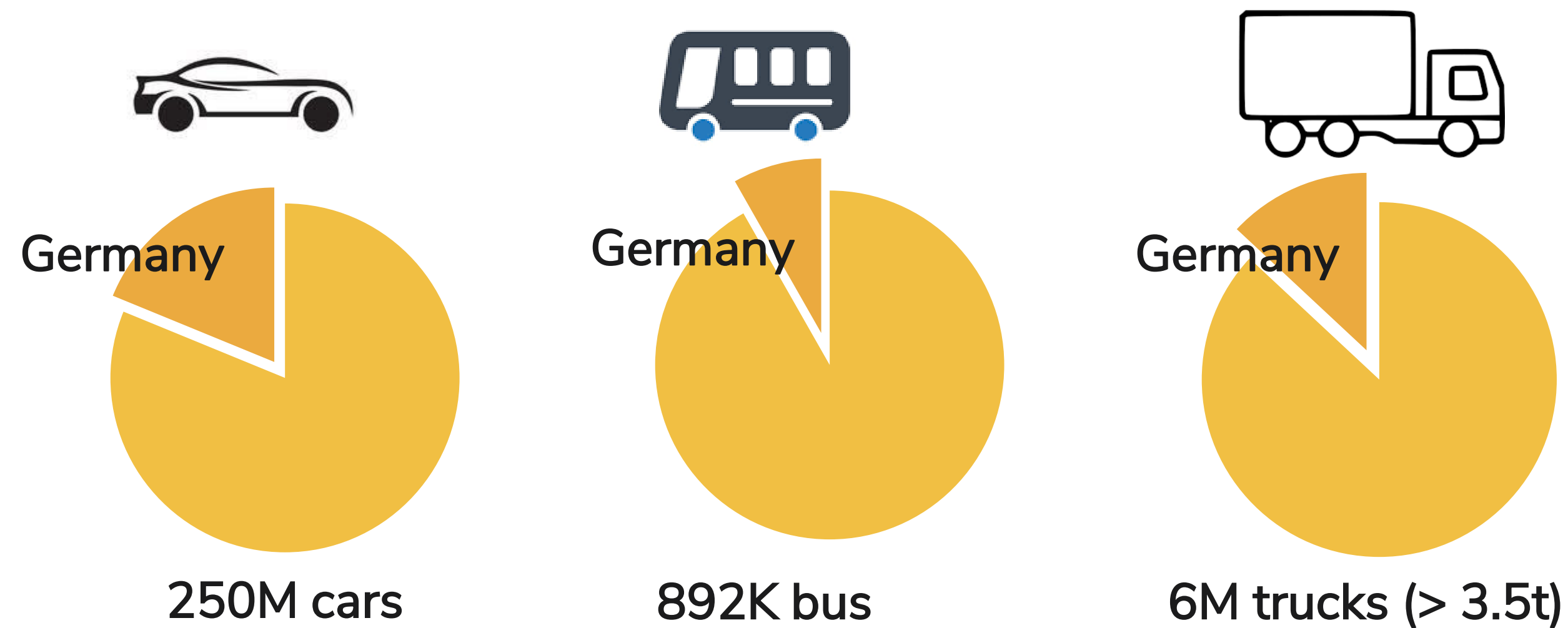
EVs on the rise...

Strong increase in EV sales

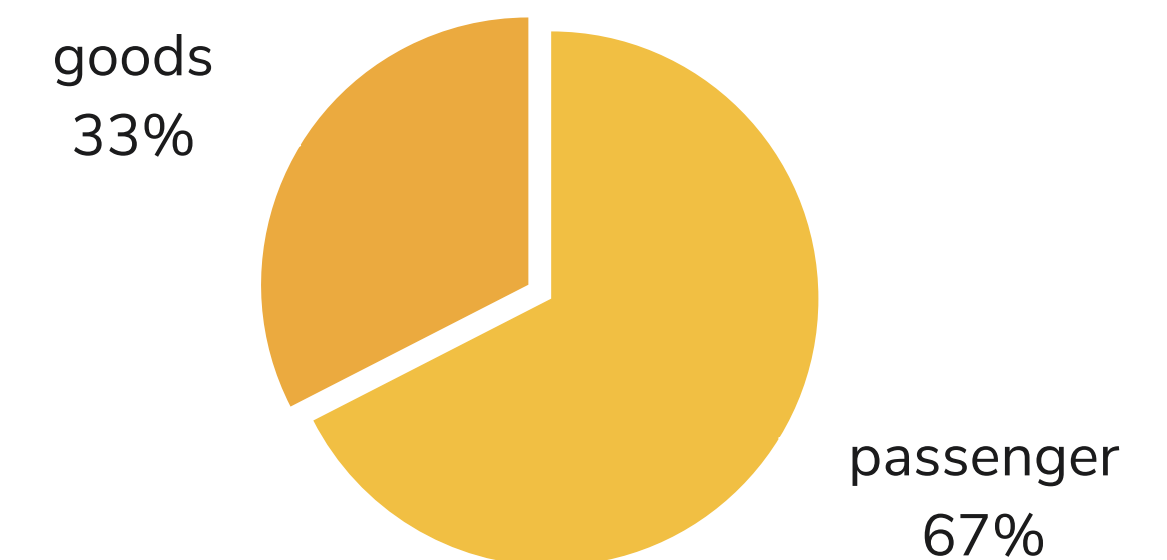


...which creates a huge new market potential...

Markets are all vehicle segments in Europe



Annual road fuel consumption
Germany in power equivalent



210 TWh/a electric power

...and demand for charging services



Home



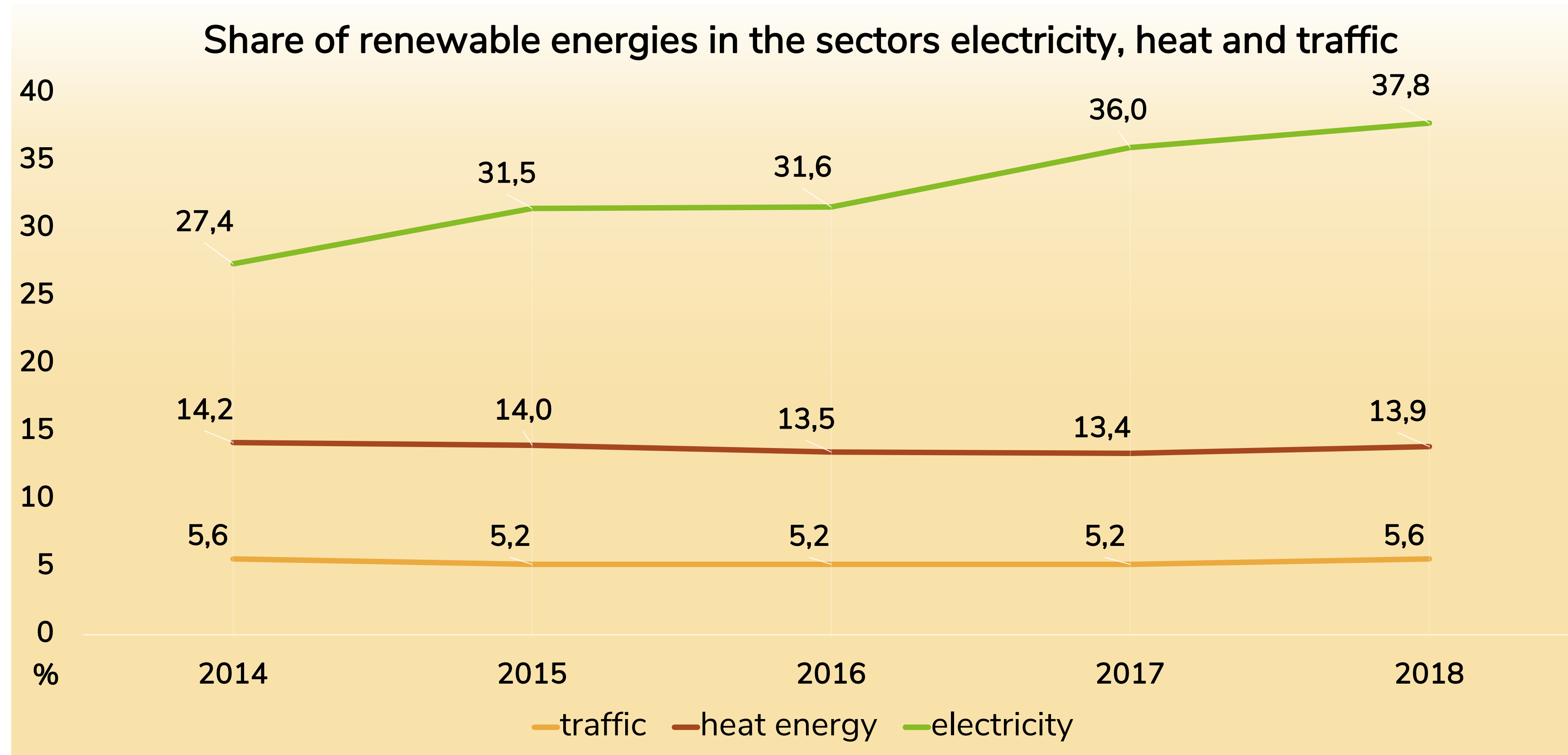
Business / Destination



Public

80% of charging demand **@Home**
15% of charging demand **@Business/Destination**

Renewable energies - Germany



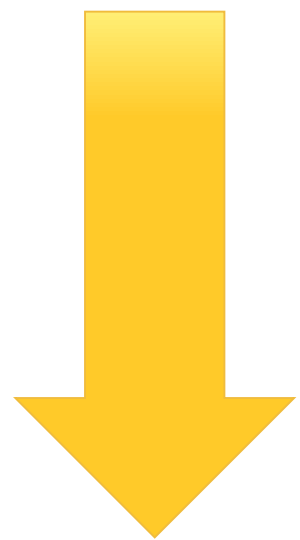
- Expansion of wind and solar increases volatility
- Decrease of nuclear and coal exacerbates volatility

→ Need for use of demand response

What happens if

10 M e-vehicles in 2030

100 GW



Flexible demand

25 TWh/a



ca. 5% gross electricity
consumption

CO₂ - savings



Up to 40% traffic
emissions

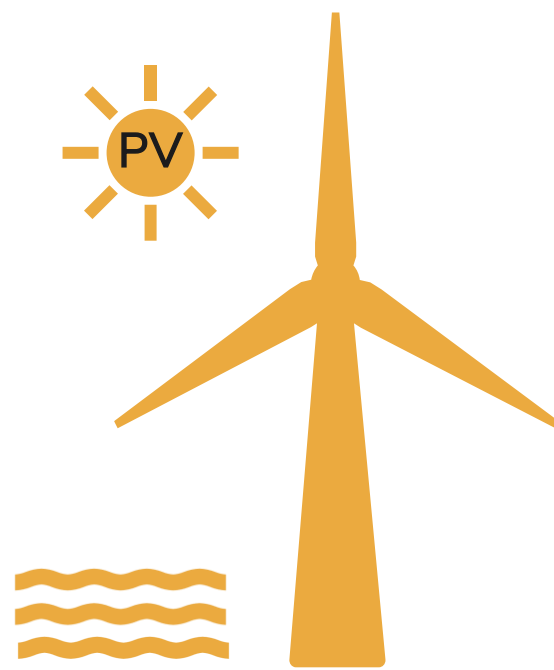
Where is the smart potential



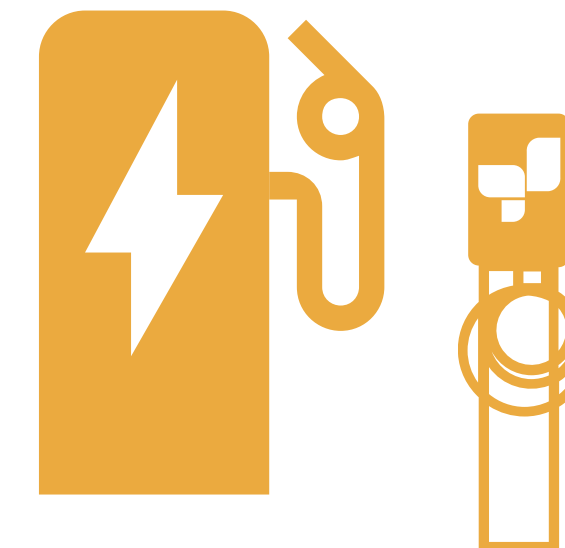
Weather forecast tools



User



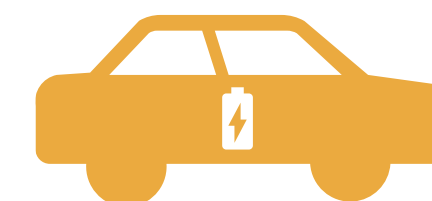
Feed with renewable energy



Charge point



Pricing



In-car app

What needs to be connected

vehicles / buildings



connect prosumer /
consumer



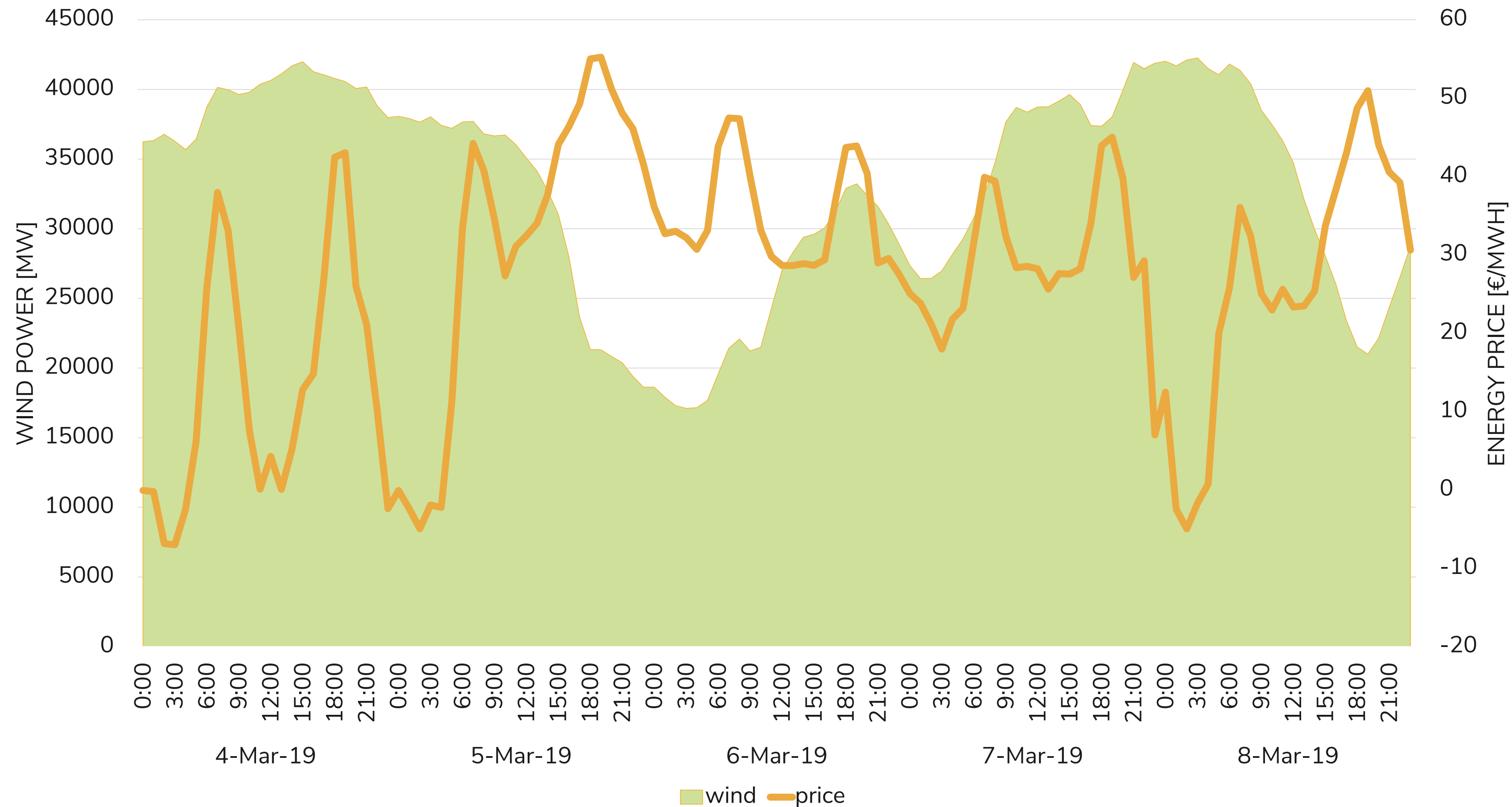
energy markets



integration energy market

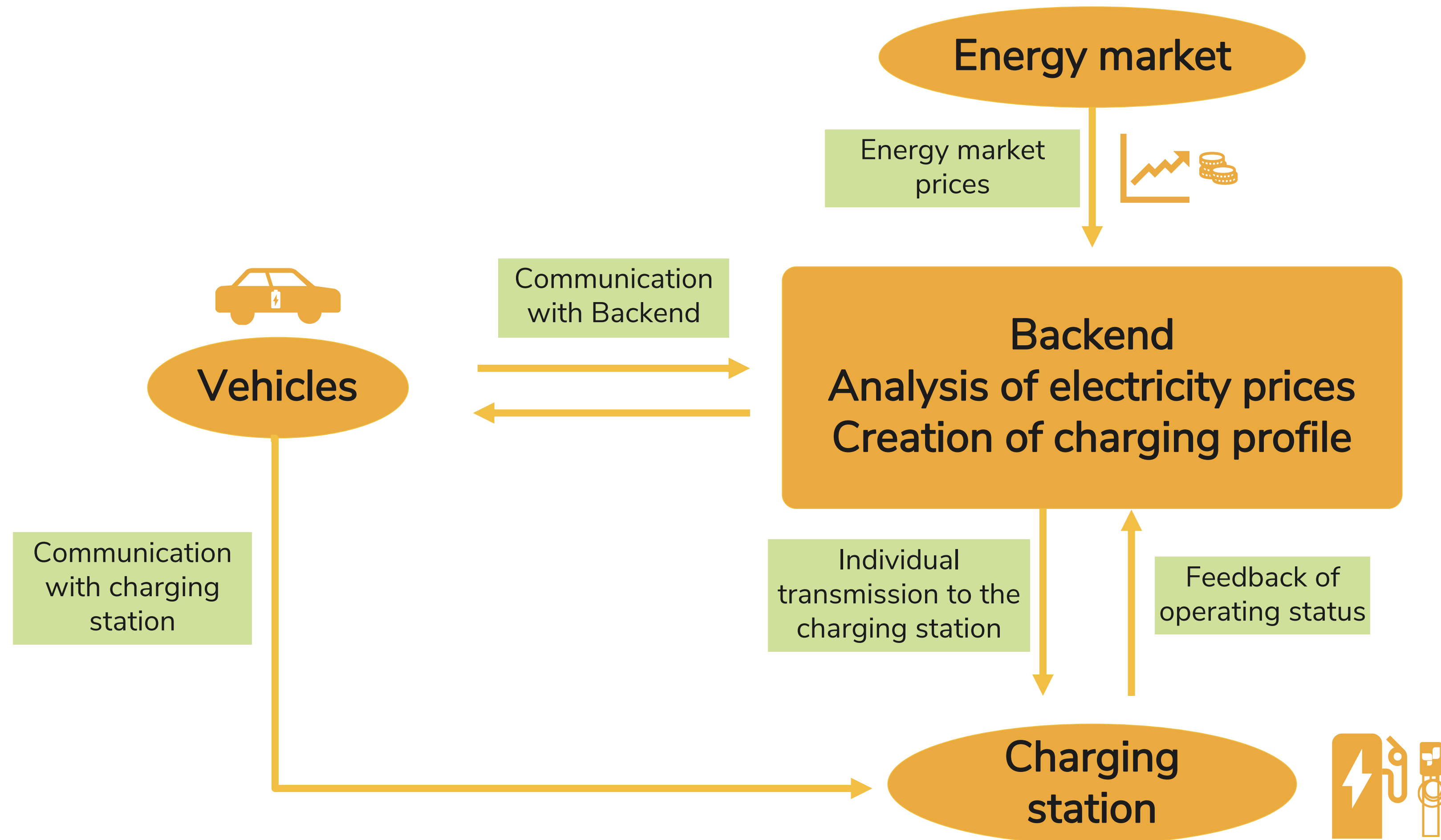


Potential benefits



- Electricity prices strongly variable
- Quarter-hour prices vary widely over trading hours
- Further expansion of renewable energies increases volatility

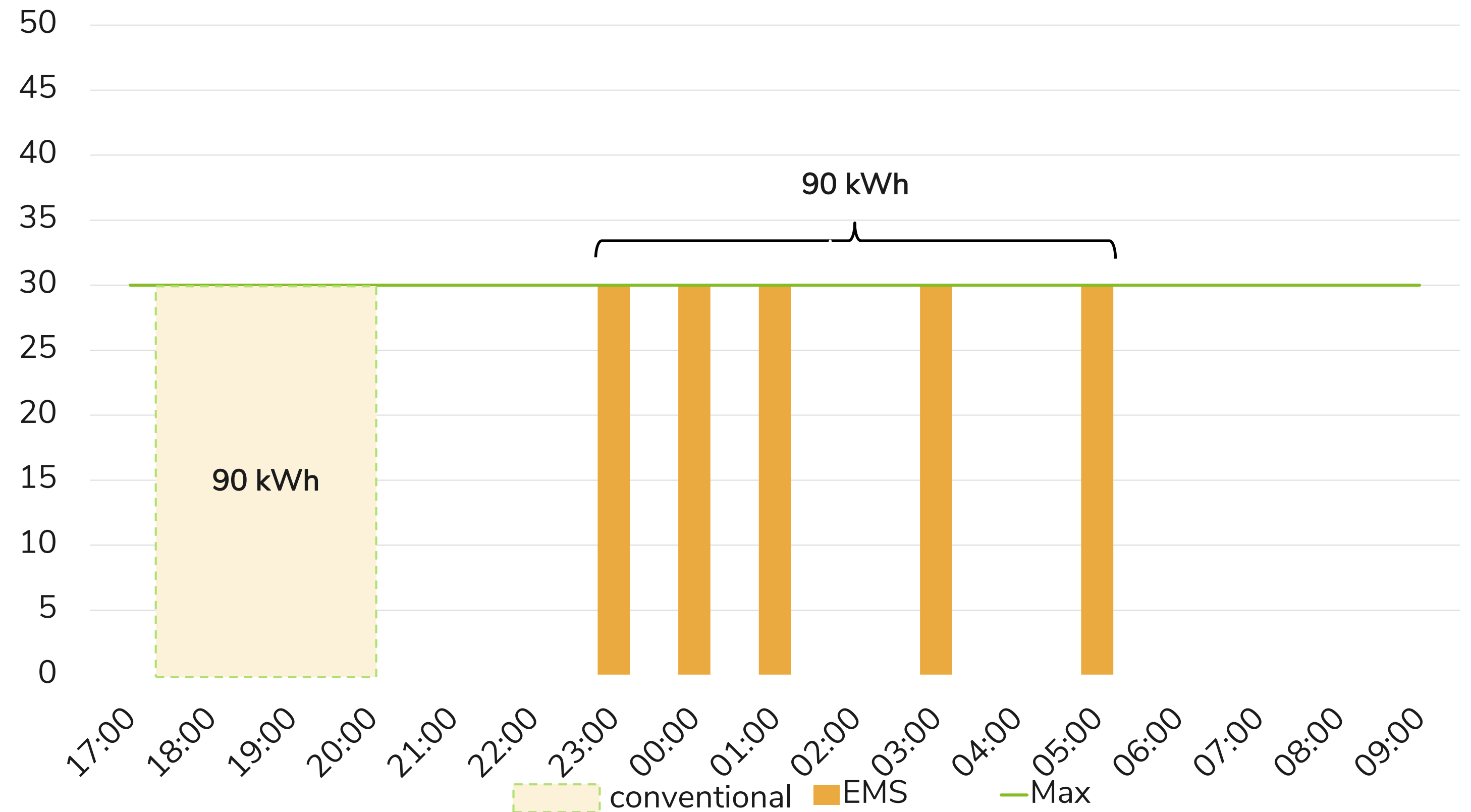
How could it look like



Smart Charging Roll-Out

Energy optimization

- The charging process does not directly start after plugging in the charging cable
- Connection to energy markets for optimal use of renewable energies
- The car will be charged within the smart time window of optimal ¼ hours



The world of tomorrow

Smart charging

- Integration of charging infrastructure in building control systems
- Storage: Vehicle to grid
- Integration of PV, stationary battery storage and heat pumps
- Communication with vehicle
- Inductive charging



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Klaus Huber
Founder & Managing Director
k.huber@ee-mobility.com

eeMobility GmbH
Landwehrstraße 60-62
80336 München

www.ee-mobility.com