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The time is now: smart charging of electric vehicles

CHAdeMO V2G webinar #6 : How to create a win-win solution for both EV drivers & power sector

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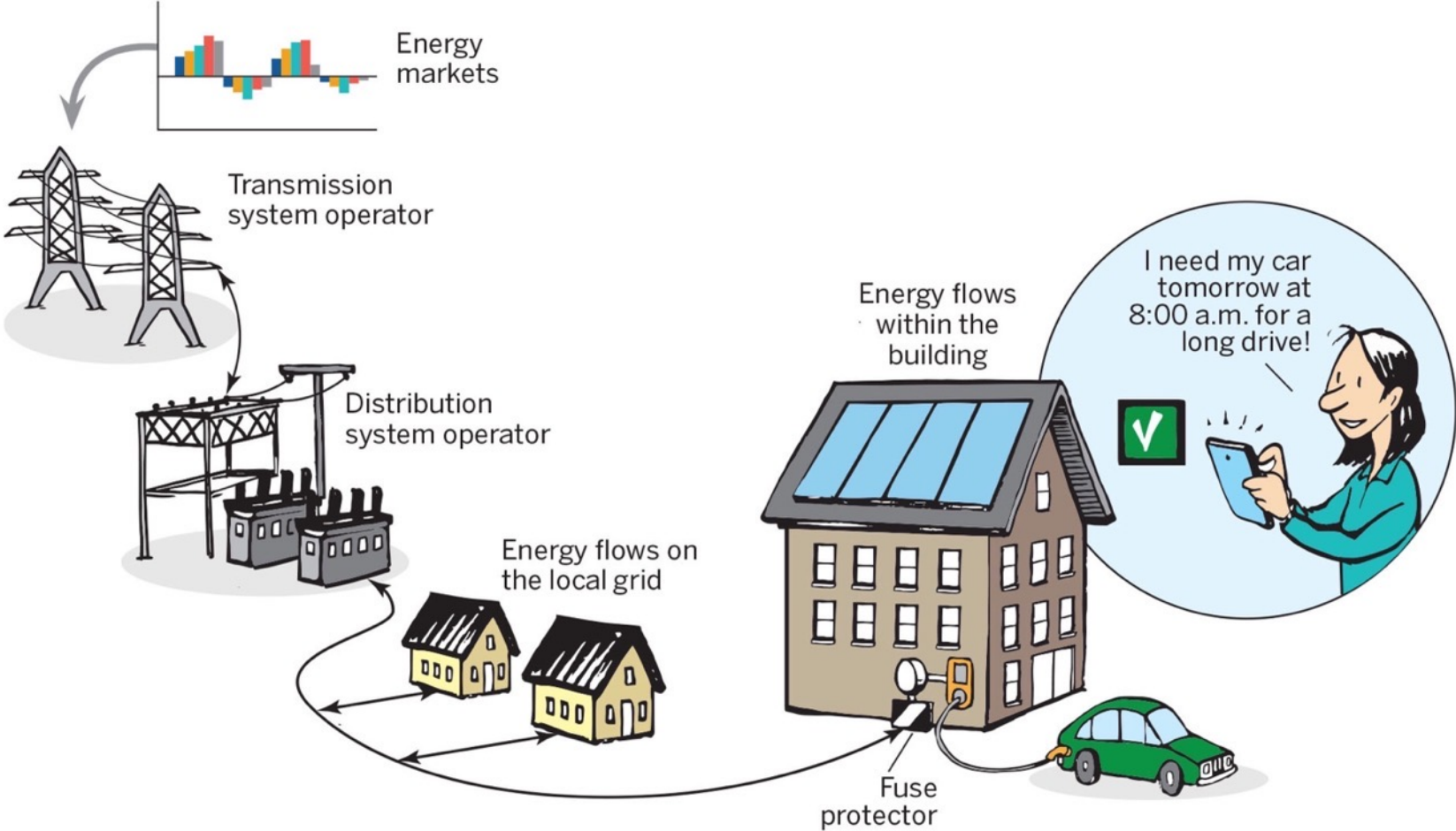
Overview

1. What is smart charging?
2. Tariffs for smart EV charging – Key findings
3. Policy recommendations

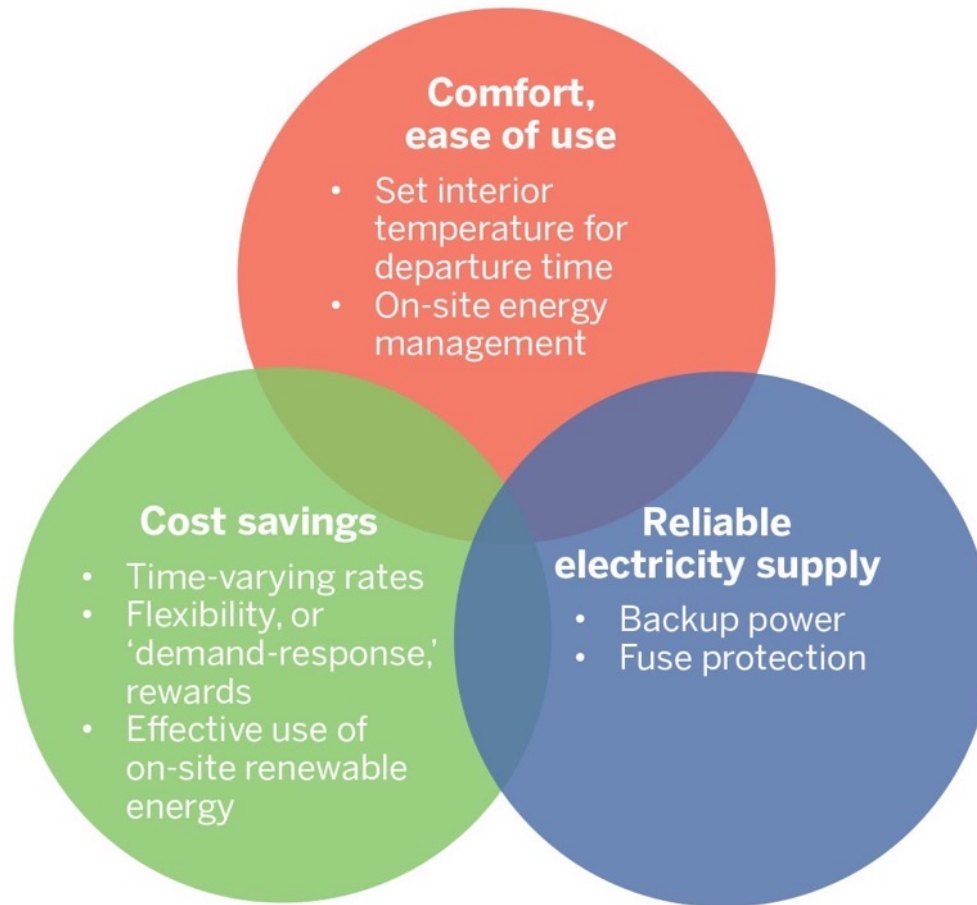
1 Benefits of smart charging for users and the energy system



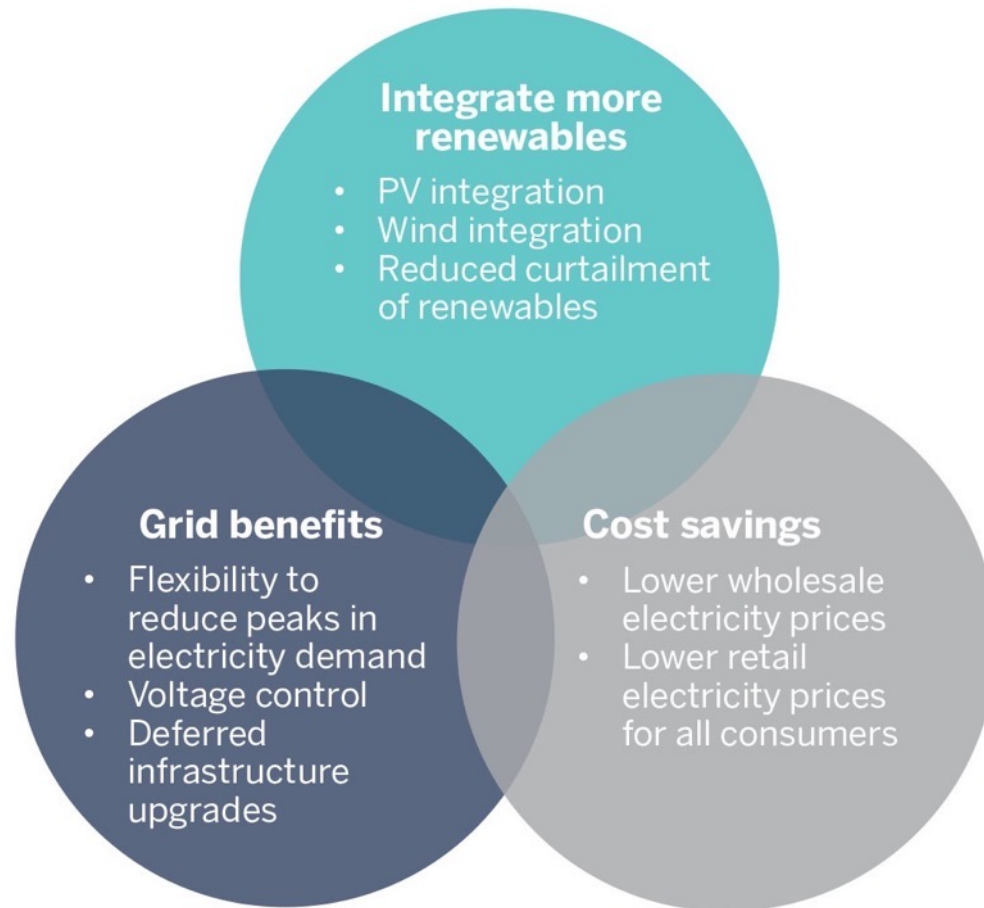
What is smart charging?



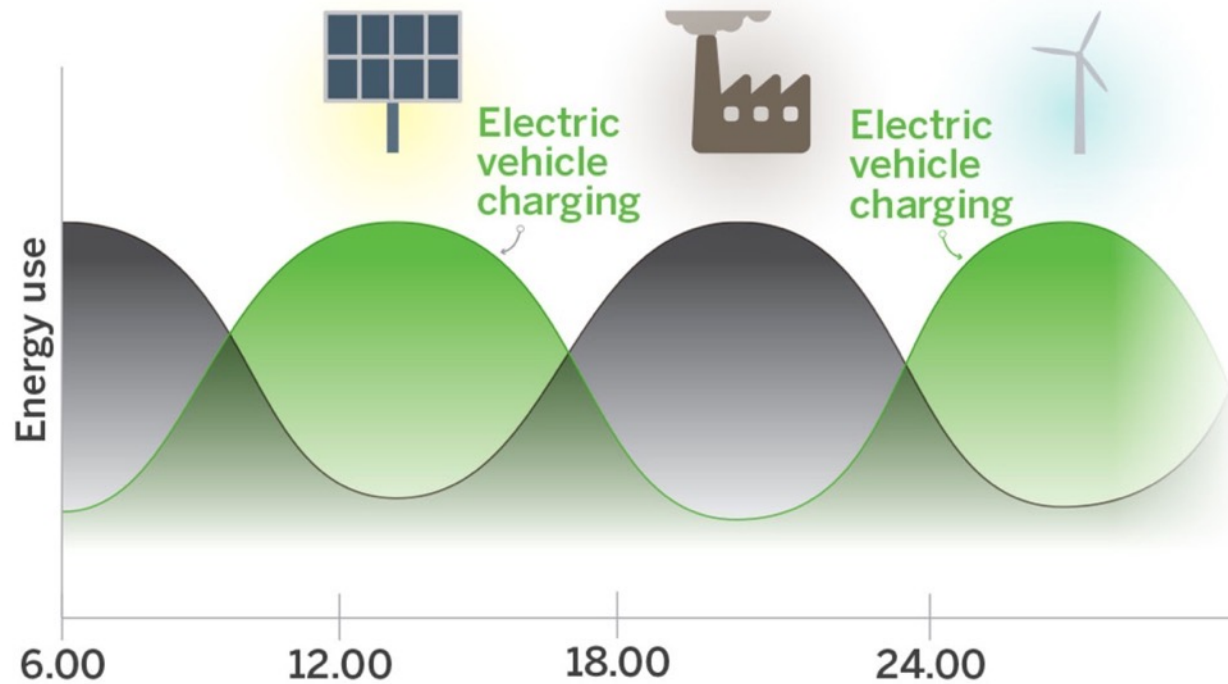
User benefits



System benefits



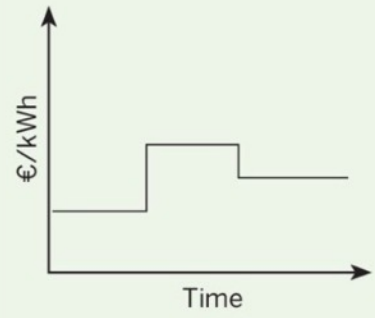
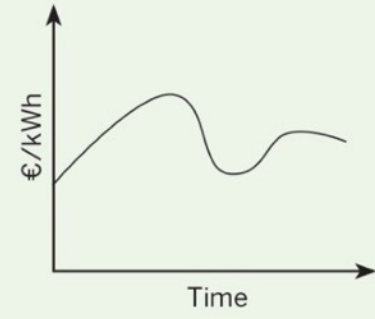
When's the best time to charge?



2 Smart tariffs & services

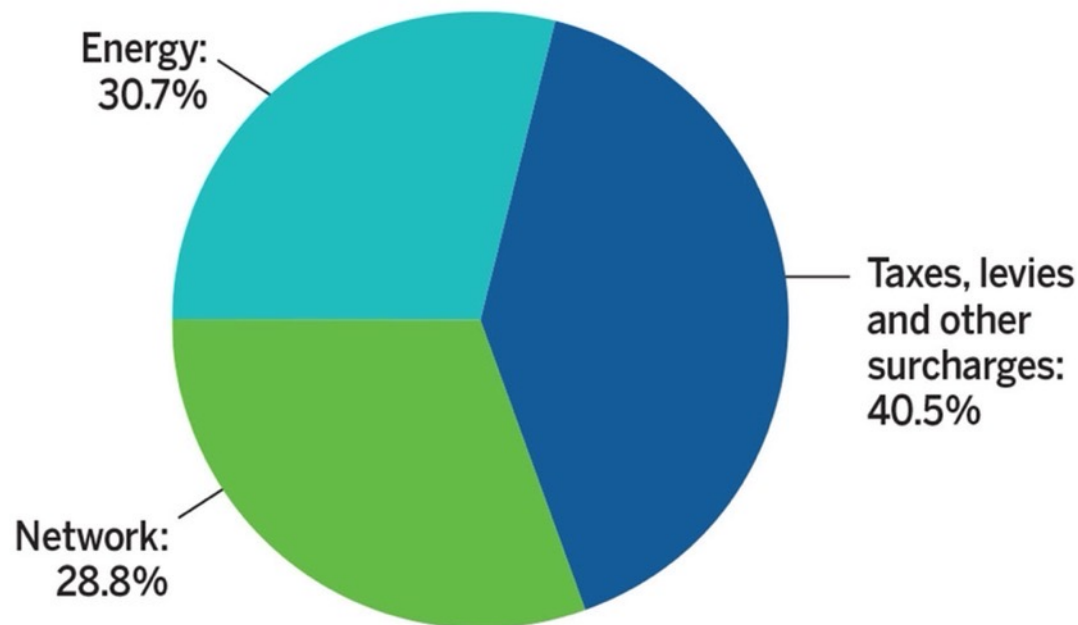


Tariffs

Type of tariff	Nature of pricing	Illustrative graphical representation
Static TOU pricing	Static	 <p>The graph shows price in €/kWh on the vertical axis and Time on the horizontal axis. The price starts at a low level, then steps up to a higher level for a period, and then steps down to a level between the two previous levels.</p>
Real-time pricing	Dynamic	 <p>The graph shows price in €/kWh on the vertical axis and Time on the horizontal axis. The price starts at a low level, rises to a peak, falls to a trough, and then rises again to a level higher than the starting point.</p>

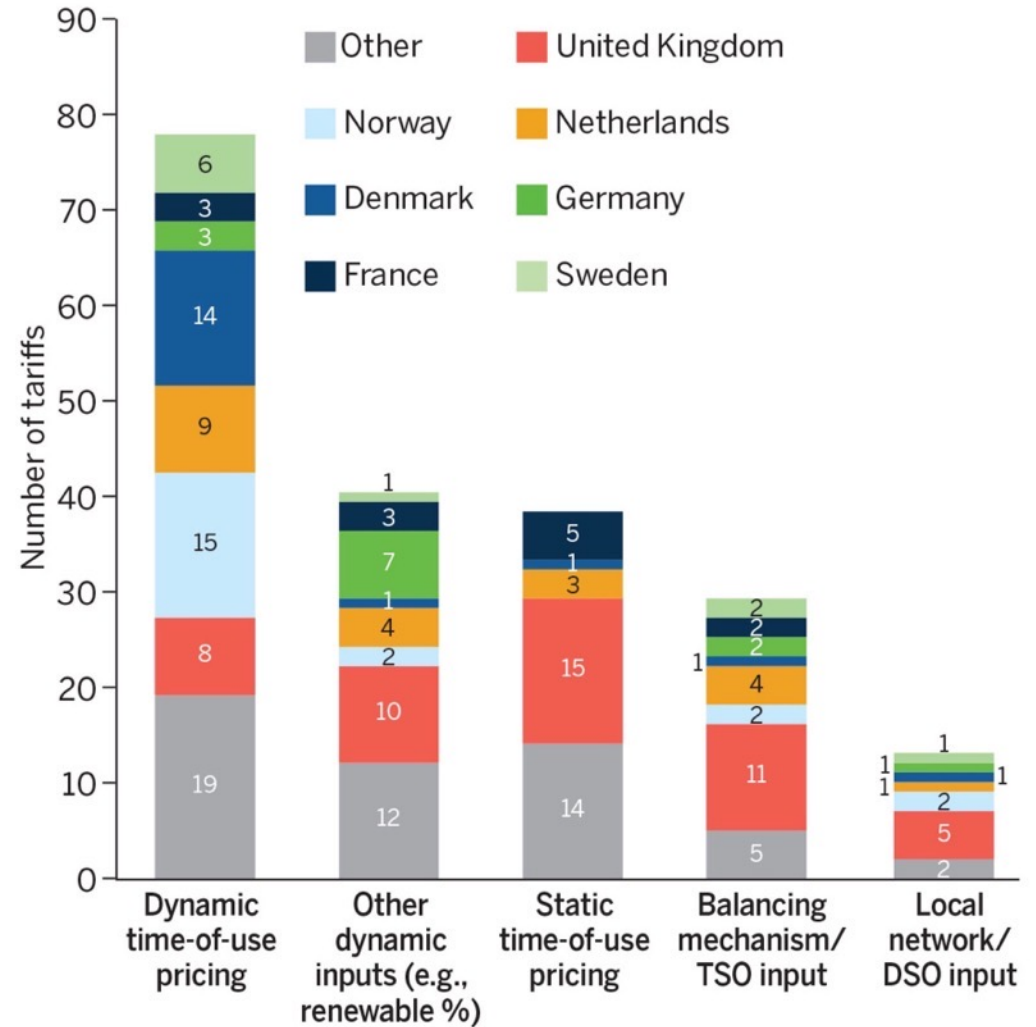
Source: IRENA 2019

Tariffs

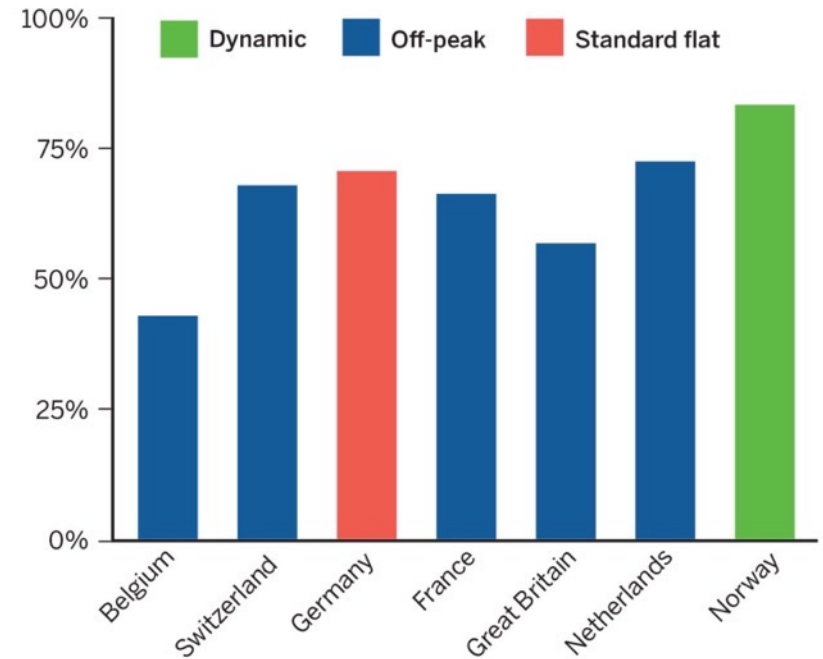


Source: Agency for the Cooperation of Energy Regulators and Council of European Energy Regulators. (2021). *Annual report on the results of monitoring the internal electricity and natural gas markets in 2020.*

Basis for smart tariffs and services



Tariffs and services distributed unevenly across Europe



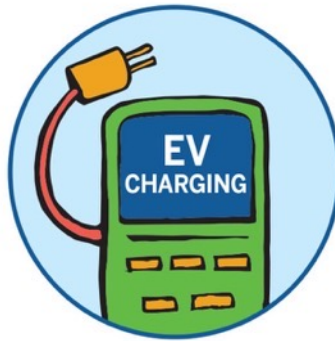
Jedlix. (2022). A sneak peek into tariff rates across countries.

3 How to accelerate smart charging





Make smart charging the default everywhere.



Make public charging smart too.



Empower consumers to make informed choices.



Improve rewards for consumer flexibility.

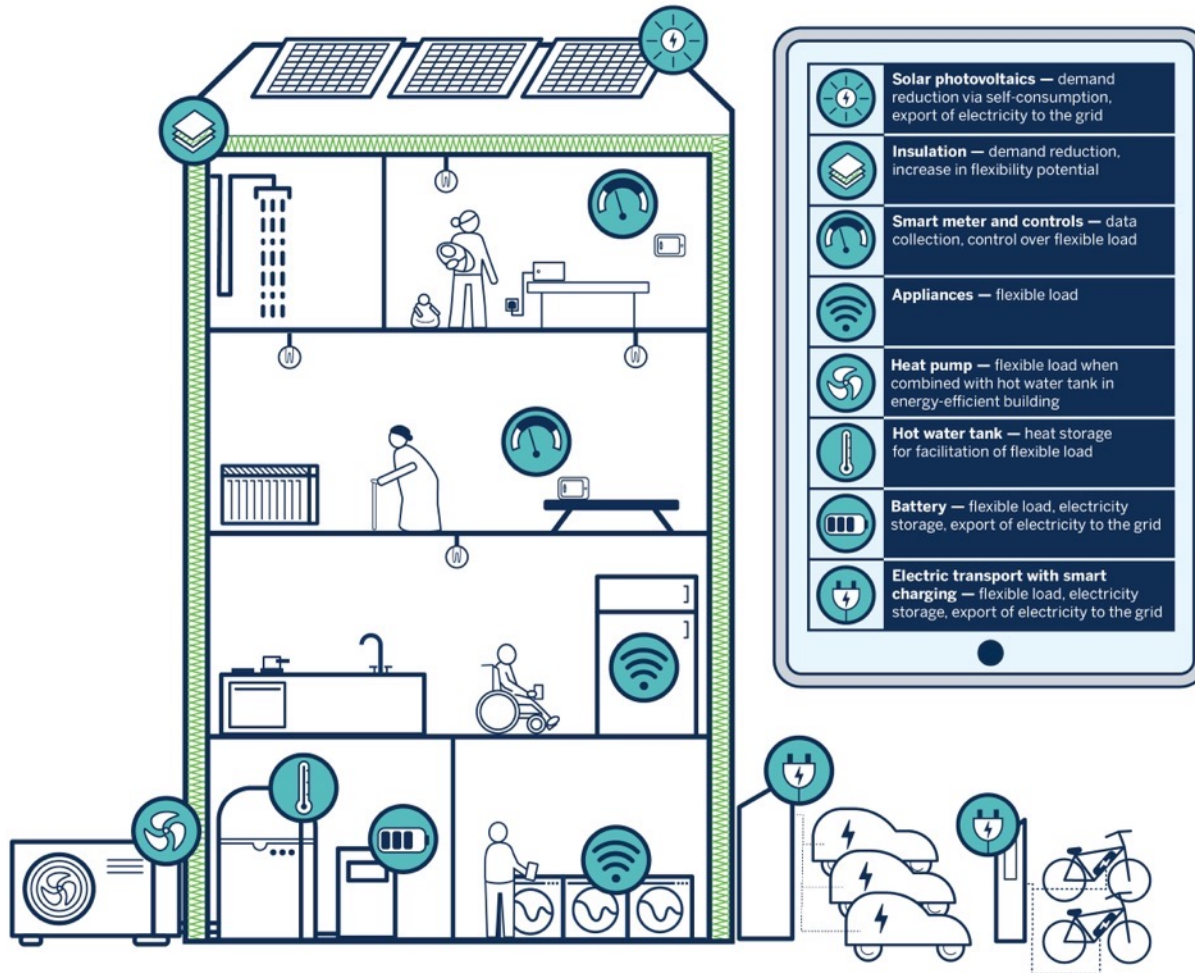


Stack multiple services for smart charging.

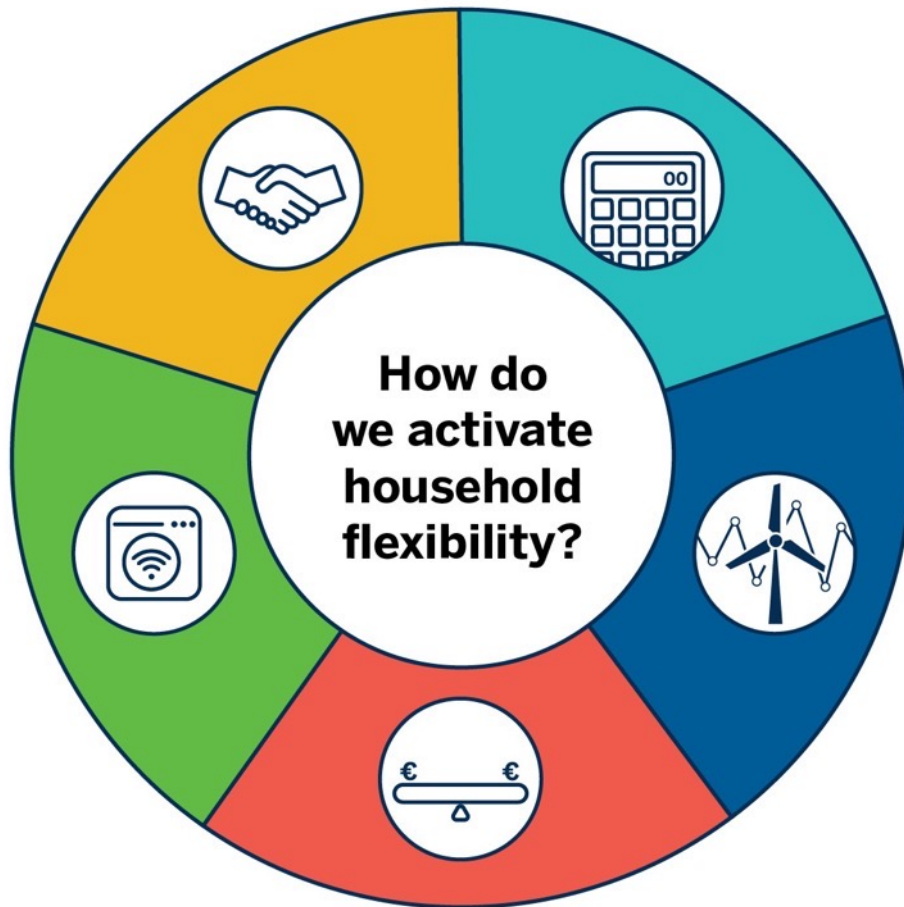


Make local grids 'smart charging ready.'

Beyond smart EV charging



Embrace household flexibility



Create robust tools for measuring and valuing customer flexibility



Incentivise flexibility through energy market price signals



Ensure a level playing field for demand-side resources



Accelerate installation of flexible assets in homes



Make flexible actions easy and safe for customers

Key messages

- The key to smart EV charging is making it easy for consumers
- Smart EV charging should be default everywhere
- As the EV market grows, smart charging is needed now to save costs and maximise benefits

About RAP

The Regulatory Assistance Project (RAP)® is an independent, non-partisan, non-governmental organization dedicated to accelerating the transition to a clean, reliable, and efficient energy future.

Learn more about our work at raponline.org



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4 More Information



Resources

- Time is now: smart charging of electric vehicles
- The joy of flex: Embracing household demand-side flexibility as a power system resource for Europe
- Europe needs smart charging of all EVs now
- EU's buildings directive should give EV owners the right to a smart plug

