

Behind-the-Meter Flexibility



Residential & Commercial

Industrial

Digital Utilities

Energy Contracts



Procurement



Energy Management



Smart Meters

Aggregation

Monetization

APIs & Connectivity



HVAC

One-stop shops

Solar

DER Deployment



Flexible Hardware

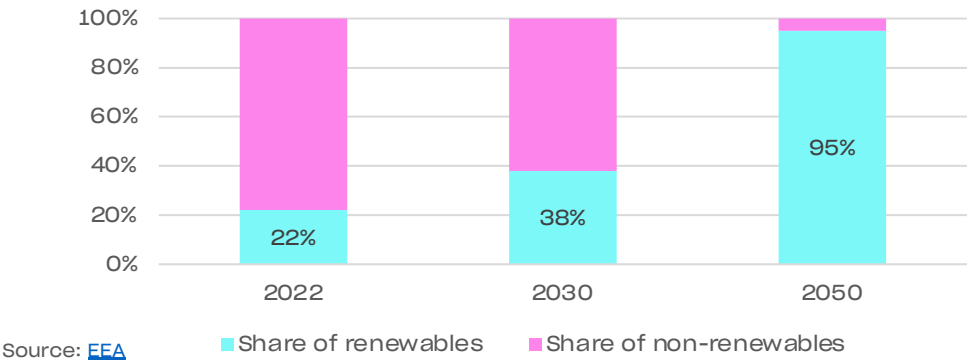


The decarbonisation of the **energy system** is bringing about **radical transformation**, including **intermittent electricity production** patterns. In parallel, the **demand-side** replacement of fossil-fuelled processes (notably in mobility and heat) by **electrical** ones and the **decentralisation** of energy production are bringing new challenges yet adjacent opportunities to **manage intermittency**, with the help of **behind-the-meter assets**. **Startups** spanning the **entire spectrum**, encompassing hardware, software, IoT, and deployment strategies, are serving as **catalysts** for behind-the-meter flexibility.

The Impact Challenge

The **electricity grid** is a **highly complex system** in which electricity **supply** (generation) and **demand** (consumption) must **constantly be kept in balance**. In the **past**, this has been achieved by **ramping fossil fuel power plants** up and down ("dispatching") to **match consumption**. In an **energy system** which relies on **intermittent** ("non-dispatchable") renewable electricity generation, this **dependency is reversed** and **consumption** must be **modulated to match supply**, hence the **necessity for demand-side** (behind-the-meter) **flexibility**.

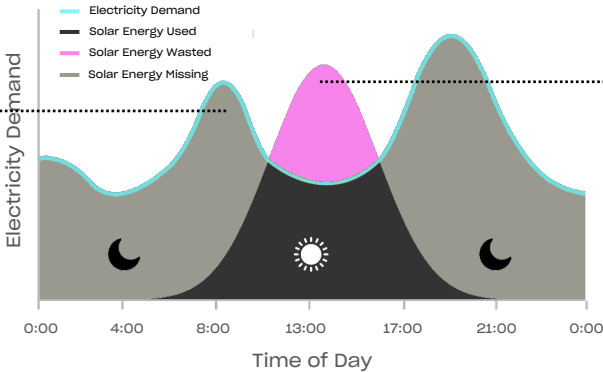
The % of renewables in Europe's gross final energy consumption will sharply increase...



creating an electricity supply-demand mismatch, and thus a two-fold problem.

Emissions due to Fossil-fuelled Flexibility

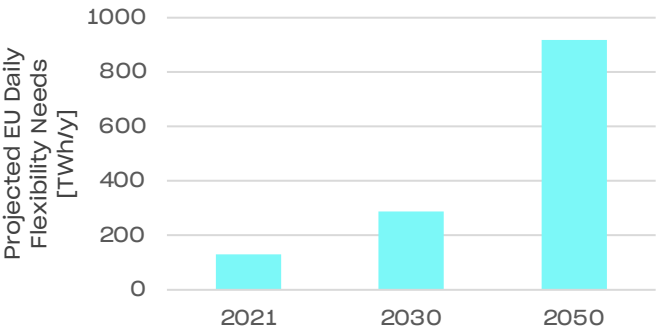
During times of renewable under-supply, natural gas powered peaker plants are required to ramp up ([IEA](#)).



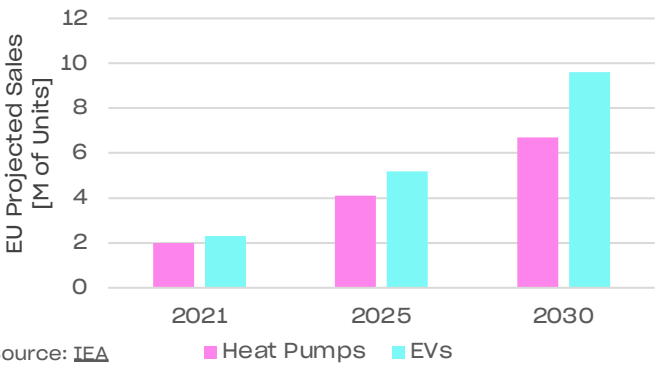
Economic Losses due to Renewables Curtailment

During times of renewable over-supply, low-carbon energy is wasted ([IEA](#)).

Need



Solution



The Opportunity

Tailwinds & Trends

- Massive subsidies for the deployment of flexible assets in the IRA & the EU Green Deal ([NBE](#))
- Increasing energy prices & price volatility, which creates an incentive to shift time of consumption ([Statista](#))
- Increasing smart meter penetration ([EU Commission](#))
- Introduction of dynamic/time-of-use electricity tariffs ([Council of the EU](#))

Tech Plays



APIs & Connectivity



Flexible Hardware



Energy Contracts



DER Deployment



Energy Management

Startups to Watch

[See our full market map here.](#)

rabort.charge

Enode

Elyos

TESVOLT

axle

tibo energy

Hometree

Texture

openvolt

INRANGE

Reel

encentive

METRIS

BEEBOP

Snerpa

Volfang

trawa.

Fusebox .energy