

From Player to Playmaker: E.ON's Role in Shaping Europe's Energy Future

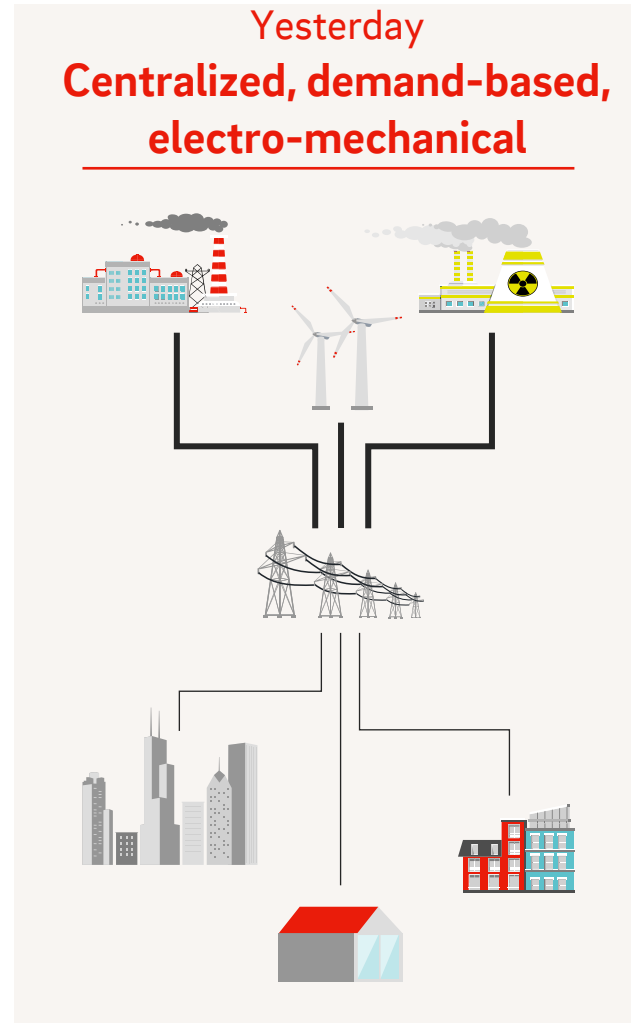
28 May 2025

Munib Amin, E.ON Group Innovation



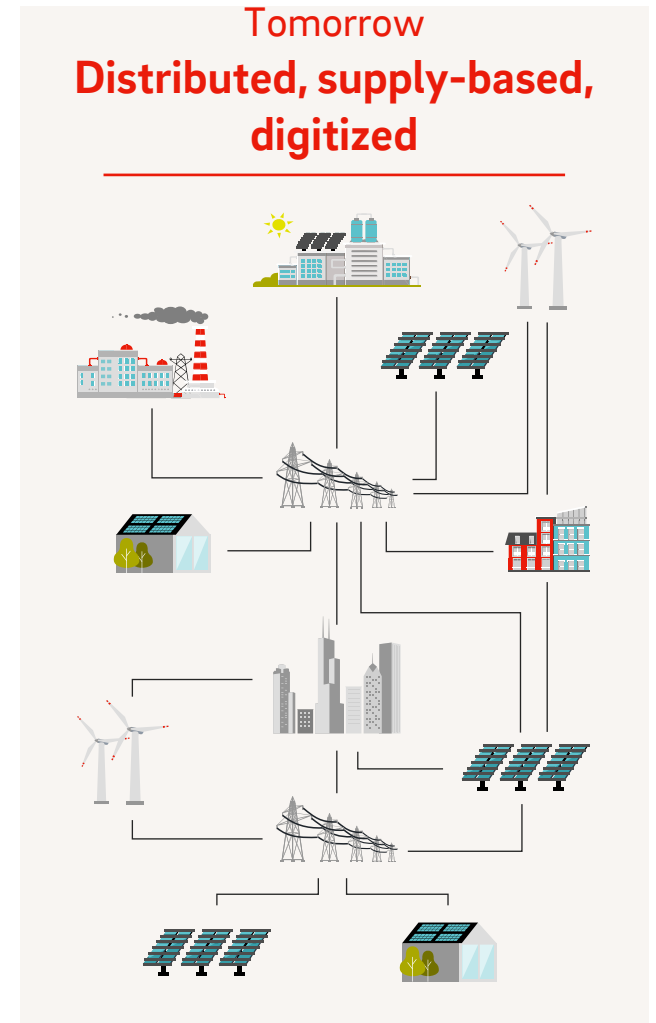
The energy transition in Europe has entered a new phase.

With a high share of renewables, a system-based approach is required



You are here

Transition



We are the playmaker of the green energy transition in Europe



Energy Networks

We operate the largest energy distribution grid in Europe and are the backbone of the green energy transition with the most critical infrastructure for society.

Top-3 markets

Regulated asset base²

- Germany: €28.0bn
- Sweden: €7.1bn
- Czech Republic: €2.9bn



Energy Infrastructure Solutions

Industries and cities face major energy supply challenges on their way to climate neutrality. We provide infrastructure solutions to support their decarbonization.

Top-3 markets

Adj. EBITDA³

- UK: €0.23bn
- Germany: €0.14bn
- Nordics: €0.11bn



Energy Retail

We are helping millions of private households and enterprises on their individual green pathway to a net-zero future, providing energy to 47m customers³.

Top-3 markets⁴

Customer accounts/electricity market share³

- Germany: 14m (24%)
- UK: 9m (16%)
- Netherlands: 4m (25%)



Unique position across the utility value chain and geographical diversification with focus on Germany, central and northern Europe



Energy Networks

Active in

Germany

Sweden

CEE¹

SEE²



Energy Infrastructure Solutions

Active in

Germany

Nordics

UK

Other³



Energy Retail

Active in

Germany

UK

Netherlands

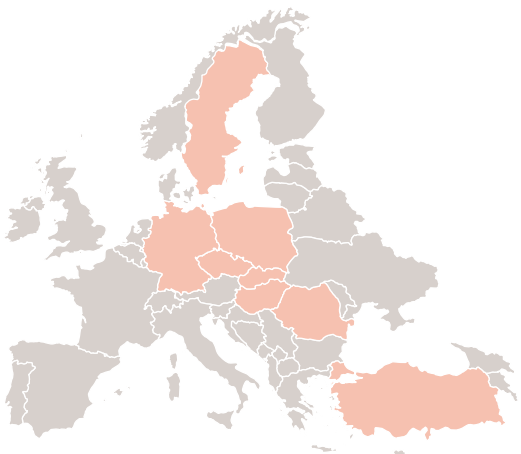
Other³



E.ON has no activities and no legacy assets in:

 Large-scale generation⁴

 Power & gas transmission



Geographically strong diversified portfolio with a business focus on Germany, Central and Northern Europe

1. Central Eastern Europe including Czech Republic, Poland, Slovakia. 2. South Eastern Europe including Hungary, Croatia, Romania, Turkey. 3. As shown as in graph below. 4. Large-scale generation feeding into the grid.

Our strategic priorities



Growth

The energy transition offers great growth potential for our business model. We are underpinning this with a further expansion of our planned investments: Between 2024 and 2028, we will increase our planned investments to a total of 43 billion euros. This corresponds to roughly a doubling in three years.



Sustainability

Sustainability is the core of our strategy and the benchmark for our actions. Our energy distribution grids are the backbone of the energy transition. Together with our customers, our solutions enable us to save more than 100 million tons of CO₂ every year. We ourselves intend to reduce the emissions that we can directly influence by at least 90 percent by 2040.

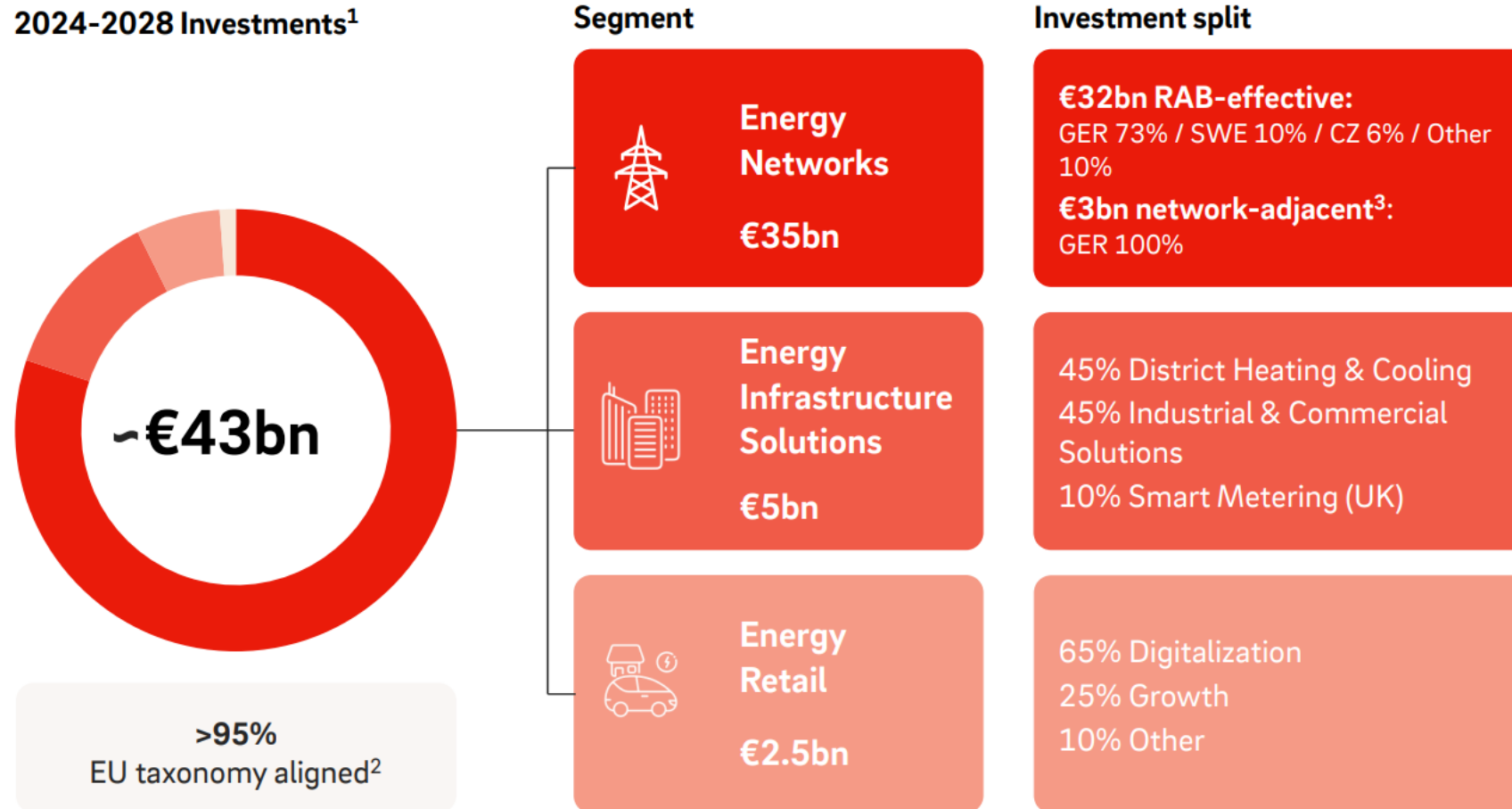


Digitalization

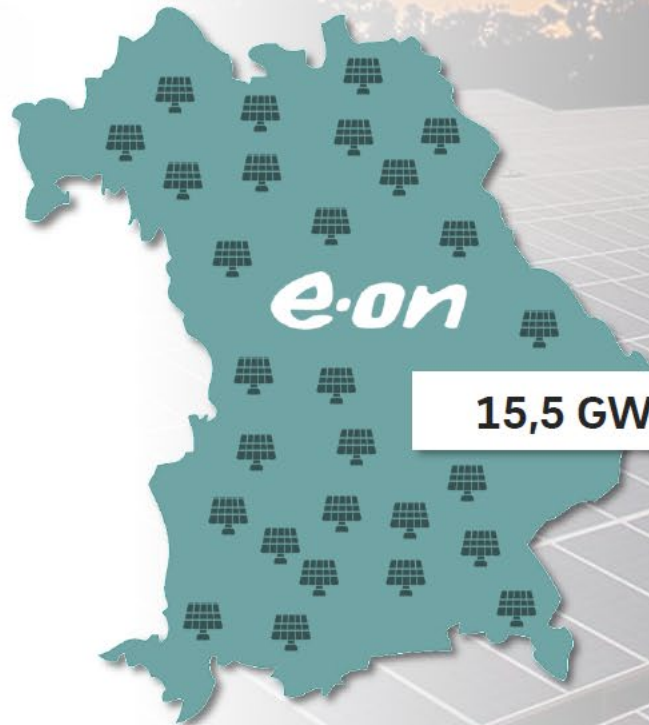
We are reshaping the energy world through the power of digital innovation. We develop and are responsible for technologies for the energy transition, implement innovative and reliable software solutions, operate our IT platforms and are committed to digitalizing the entire system in all of E.ON's business areas.

E.ON aims at investing €43bn over a period of 5 years

2024-2028 Investments¹



***Bavaria has more
PV installed
than entire
Subsaharan-
Africa***



15,5 GW

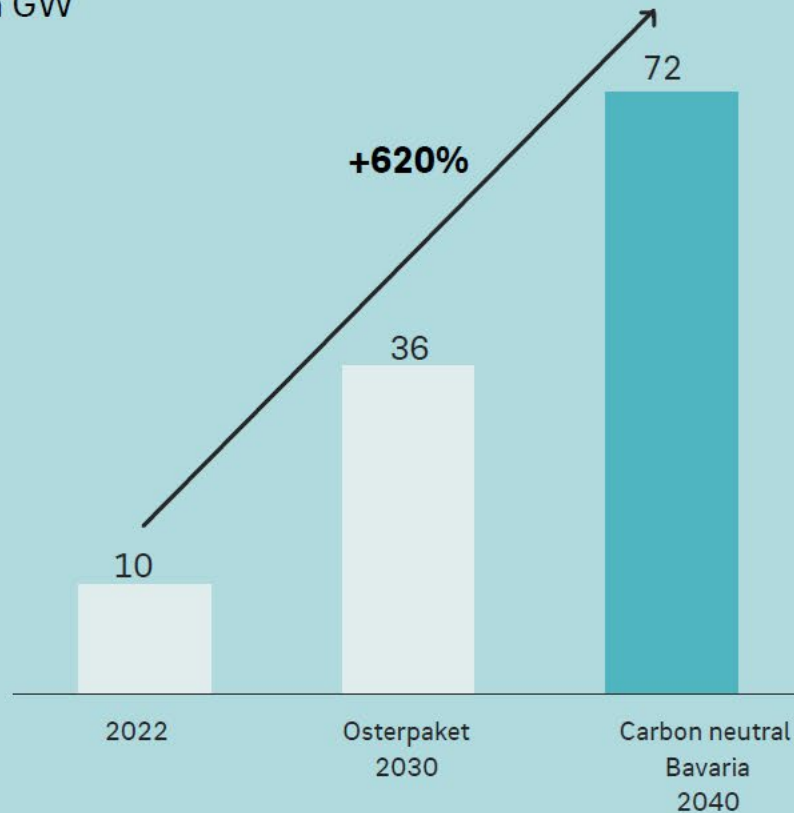
7,4 GW



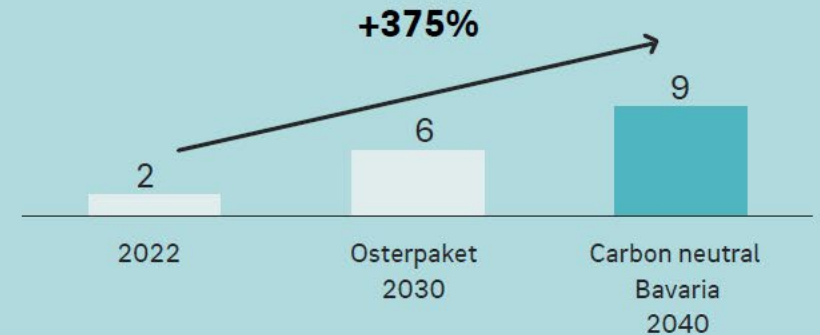
Example Bavaria – Exponential renewables growth in Bayernwerk electricity network area



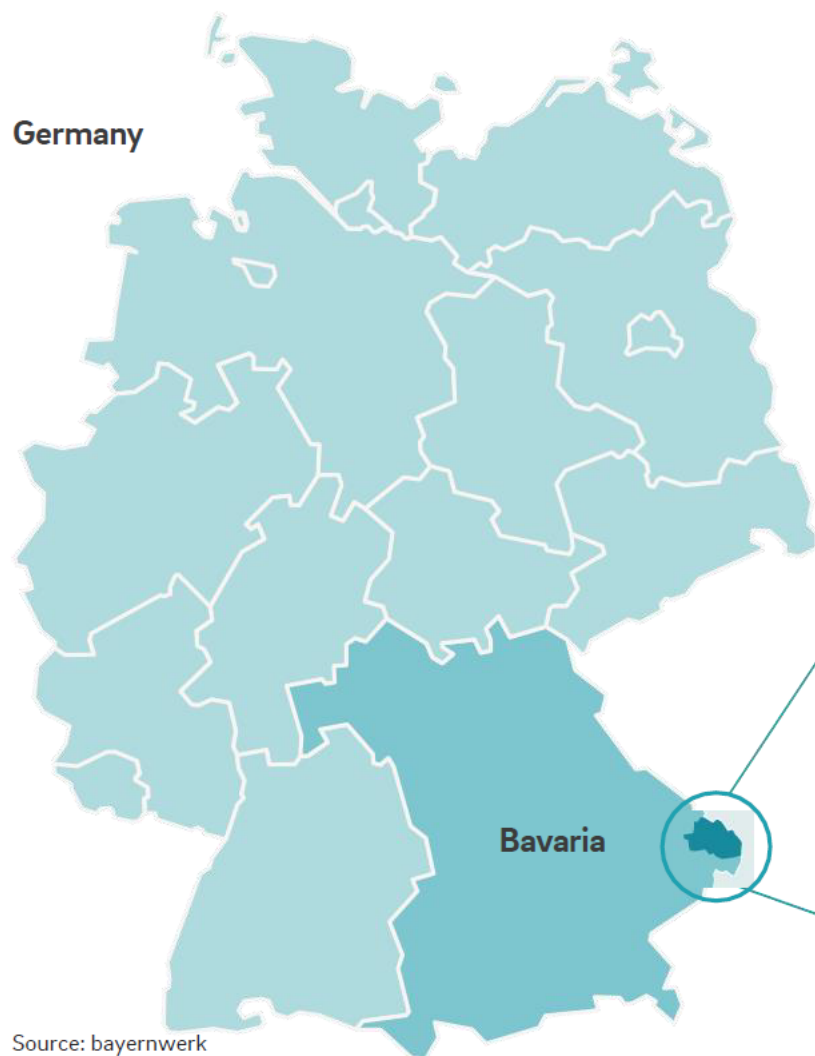
Rooftop & ground-mounted PV
in GW



Onshore wind
in GW



Relevant is what is happening on local level –
we simply cannot hit EU targets without physical expansion



Source: bayernwerk

District Freyung-Grafenau

78,600



population

984

km² area



PV-power

Today

2040

100 MW

650 MW



E-cars

100

33,700



Home battery storage

480

15,000



Heat pumps

500

12,000



Grid usage

7 MW

70 MW



Backfeeding

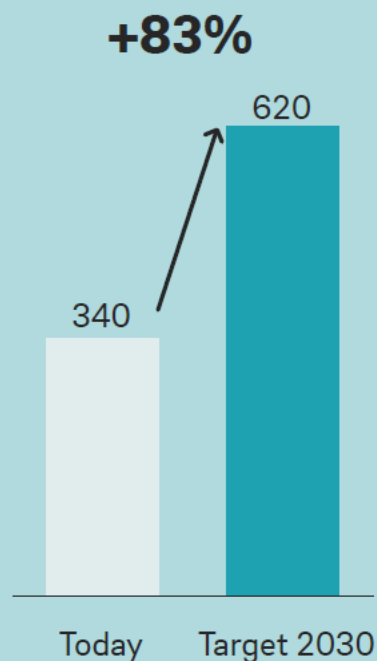
120 MW

620
MW

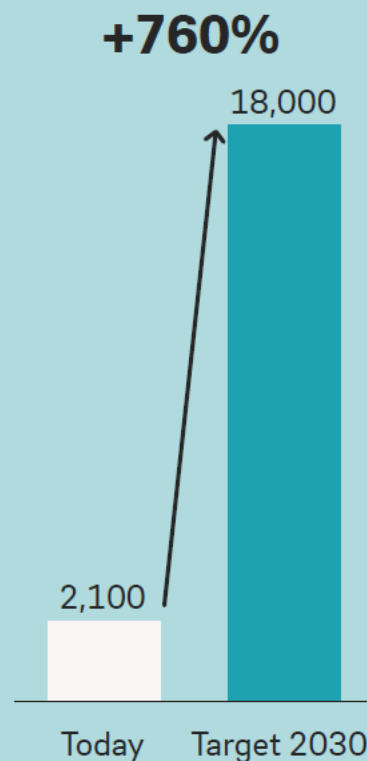
System transformation with 'clever copper'

Distr. grid in Bavaria: +27% (to 195.000 km until 2030)

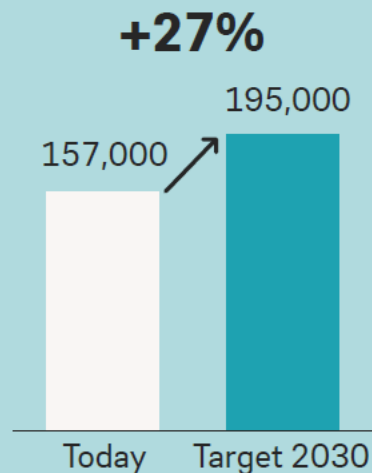
Primary substations
units



Secondary (digital) substations
units



Overheadlines & cables
in km



Changing from a demand-based to a supply-based system will also require a high degree of demand flexibility



Flexibility can be either grid-serving or market-serving – and these can conflict with each other

An affordable strategy to net zero

E.ON's Energy Playbook lays out a decarbonization scenario that can significantly improve the affordability of the energy transition, reinvigorate industrial growth, promote social cohesion and ultimately make net zero a reality.

e.on

Affordable energy is a major challenge for the energy transition ahead

Energy price surge risks pushing EU economy into stagflation

Strikes, protests in Europe over cost of living and pay

RUST BELT ON THE RHINE

The deindustrialization of Germany: If Europe's economic motor stalls, the Continent's already polarized political landscape will shudder.

BILL BLOW Energy bills set to rise again this spring hitting millions of households, say experts – can you get help?

Europe Has Fallen Behind the U.S. and China. Can It Catch Up?

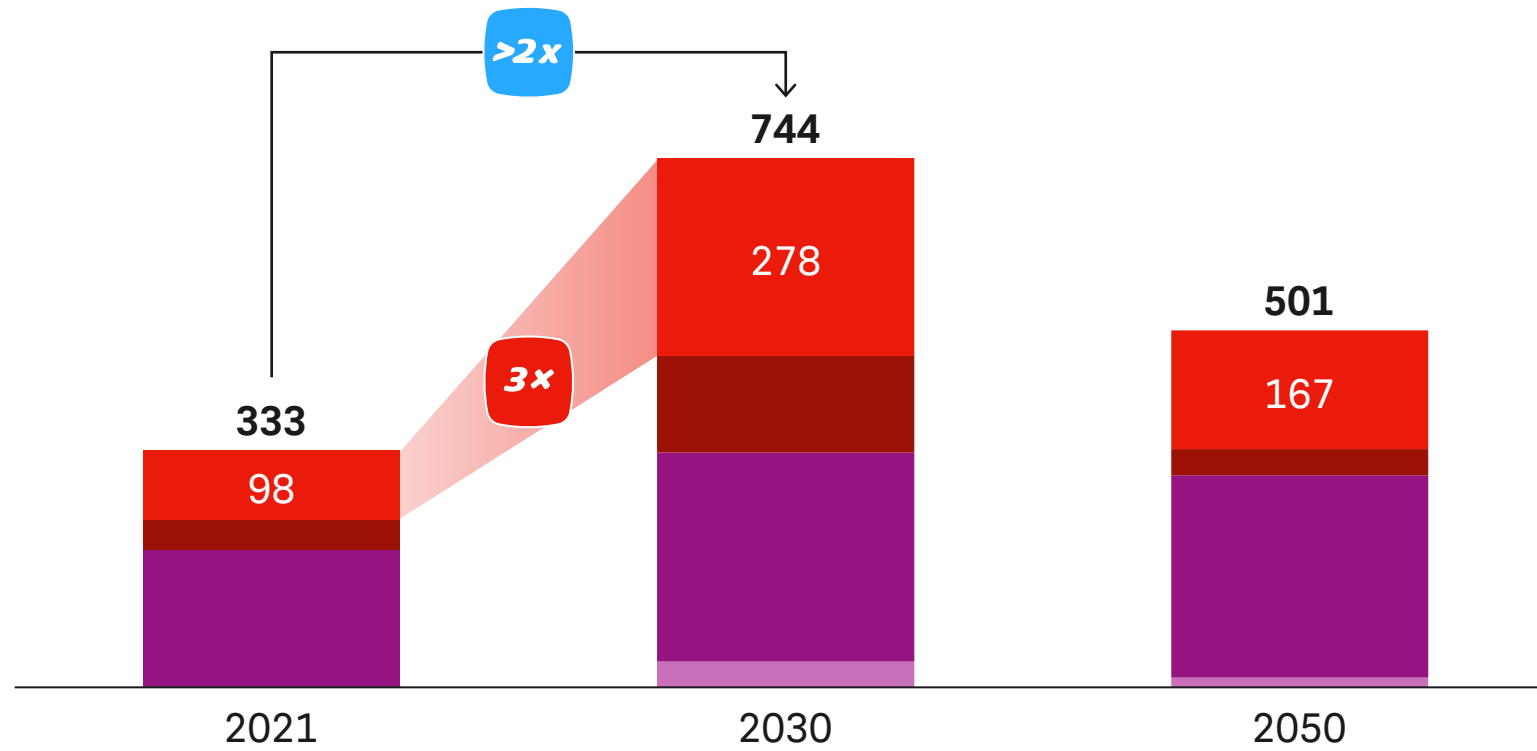
A “competitiveness crisis” is raising alarms for officials and business leaders in the European Union, where investment, income and productivity are lagging.



Indeed, we are facing an immense investment challenge if we follow current plan

Annual investments in energy system to achieve set EU targets

Billion € real 2023 p.a., EU27



Source: REPowerEU, TYNDP 2024, E.ON Analysis



Power

~760 GW **Add. Renewables** (solar, wind)
~1.5mn km **Add. Power grids** (DSO, TSO)



Heat

~40 TWh_{el} **industrial heat electrification**
~58 M **heat pumps** in buildings



Transport

~60 M **electric passenger vehicles**
~240k **electric trucks on the road**

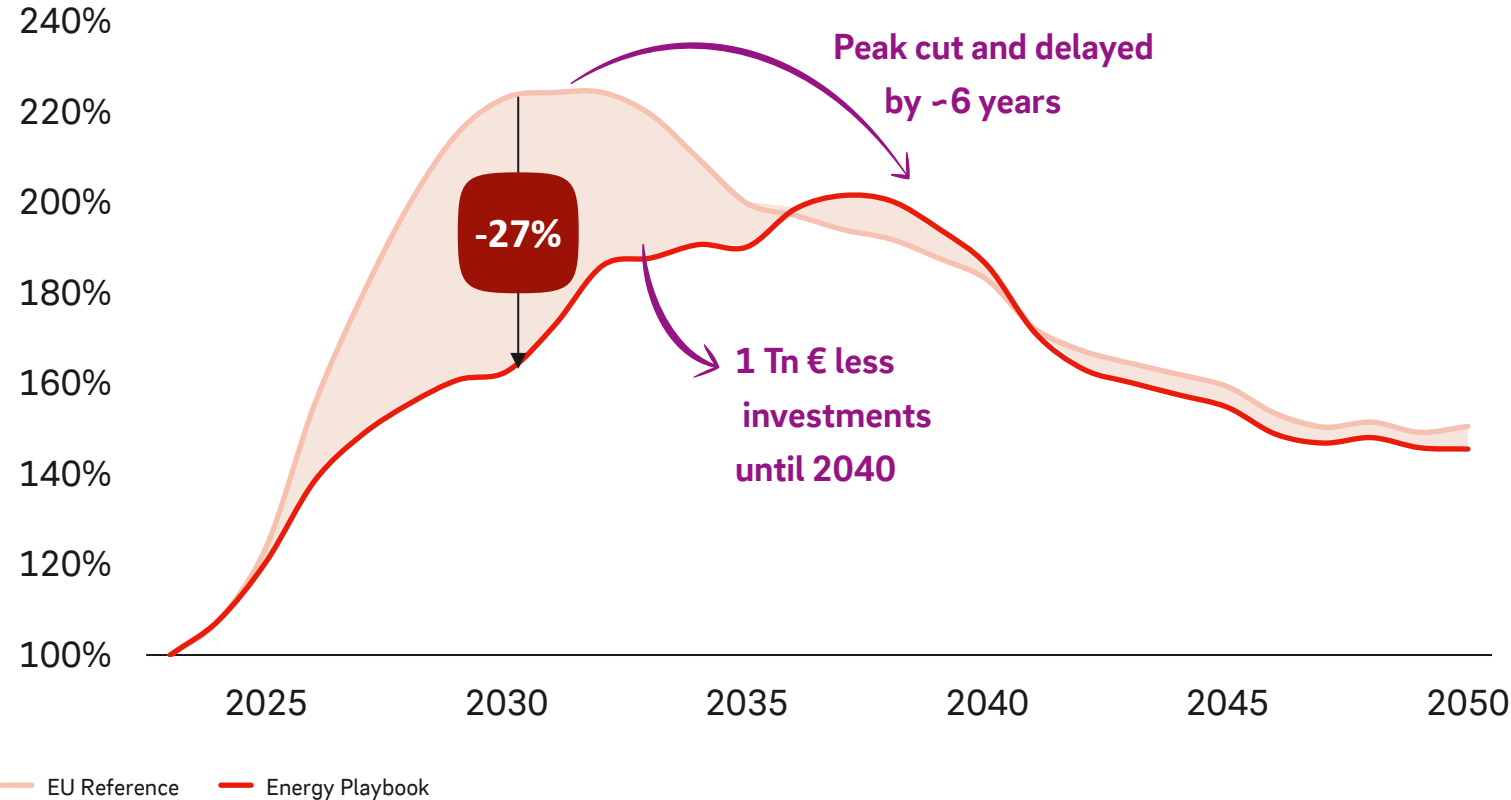


New Energy Infrastructure

~40 GW domestic **electrolyzers**
50 Mt/a carbon emissions captured

The Energy Playbook reduces mounting investments by more than €1 trillion

Energy investment index¹, 2021=100%, EU27



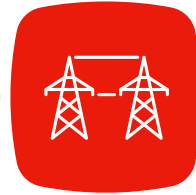
¹ The index is calculated by dividing annual energy-related investments by the investments in 2021, all adjusted to 2023 real terms. The EU Reference scenario includes targets and projections from REPowerEU & EU Impact Assessment. | Source: E.ON Analysis



The Energy Playbook lays out three core steps for an affordable transition



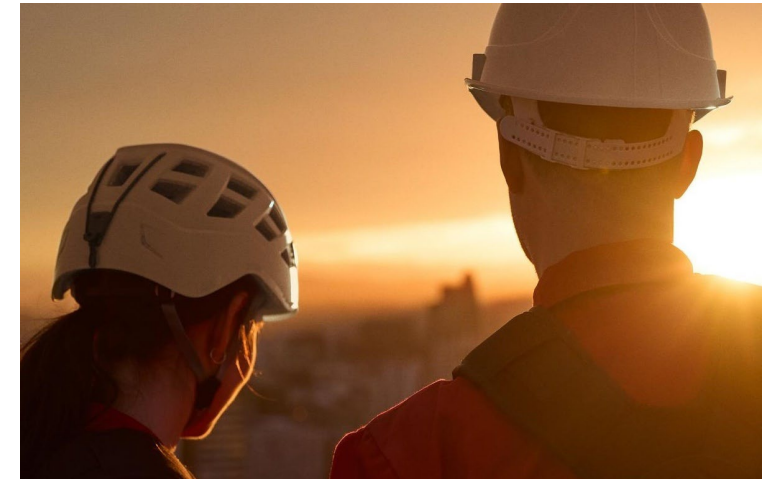
***Prioritise
electrification first***



***Scale an affordable
energy system***



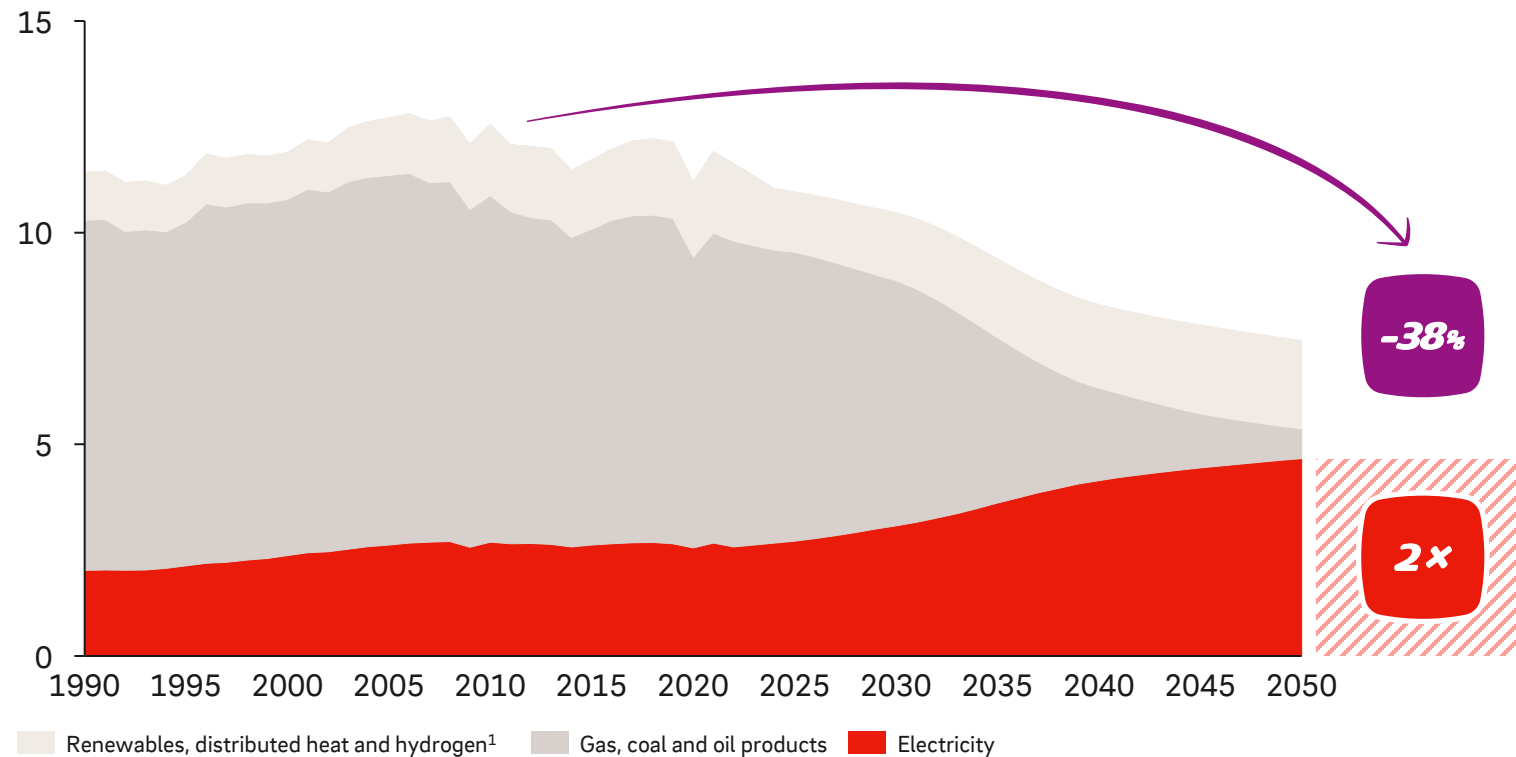
***Don't trip on the last mile
to net zero***



Step 1: Prioritise electricity first

Overall consumption decreases while power demand rises

Final energy consumption, PWh, EU27



¹ Low-carbon H₂ including feedstock demand for industrial processes & synthetic fuel production. | Source: Eurostat, E.ON Energy Playbook scenario

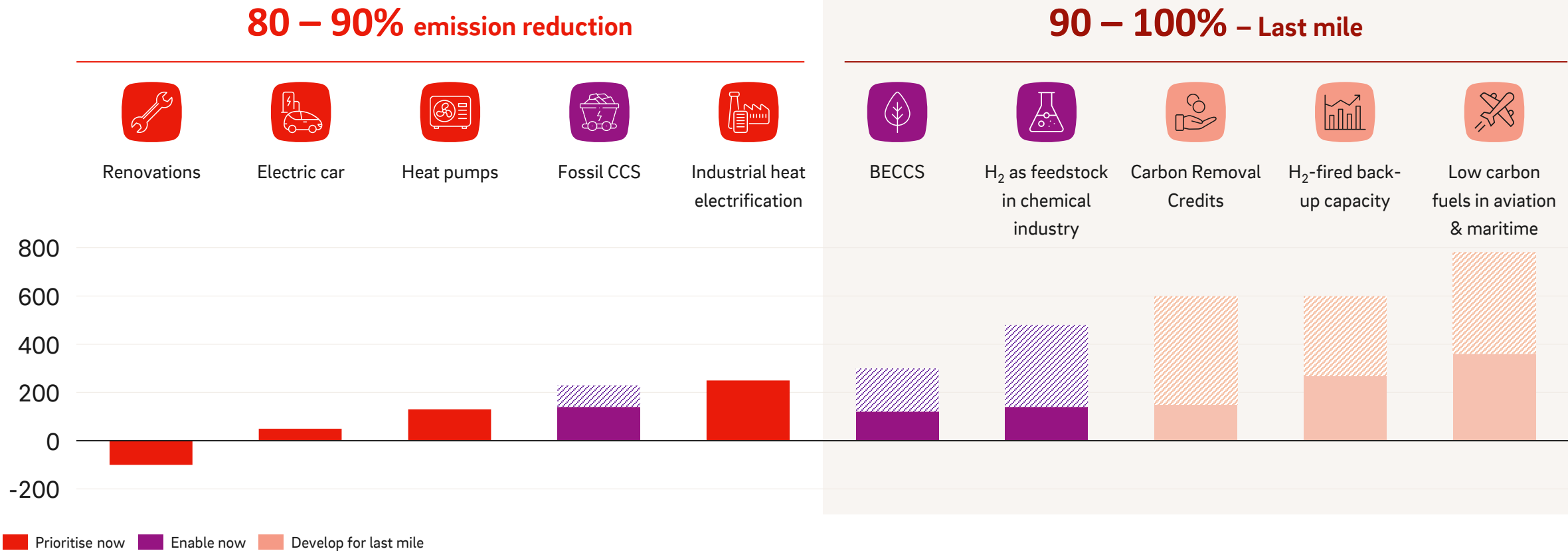


Electricity is the cheapest decarbonization option for most of the journey



Abatement costs indicate cost-efficient prioritisation of levers possible

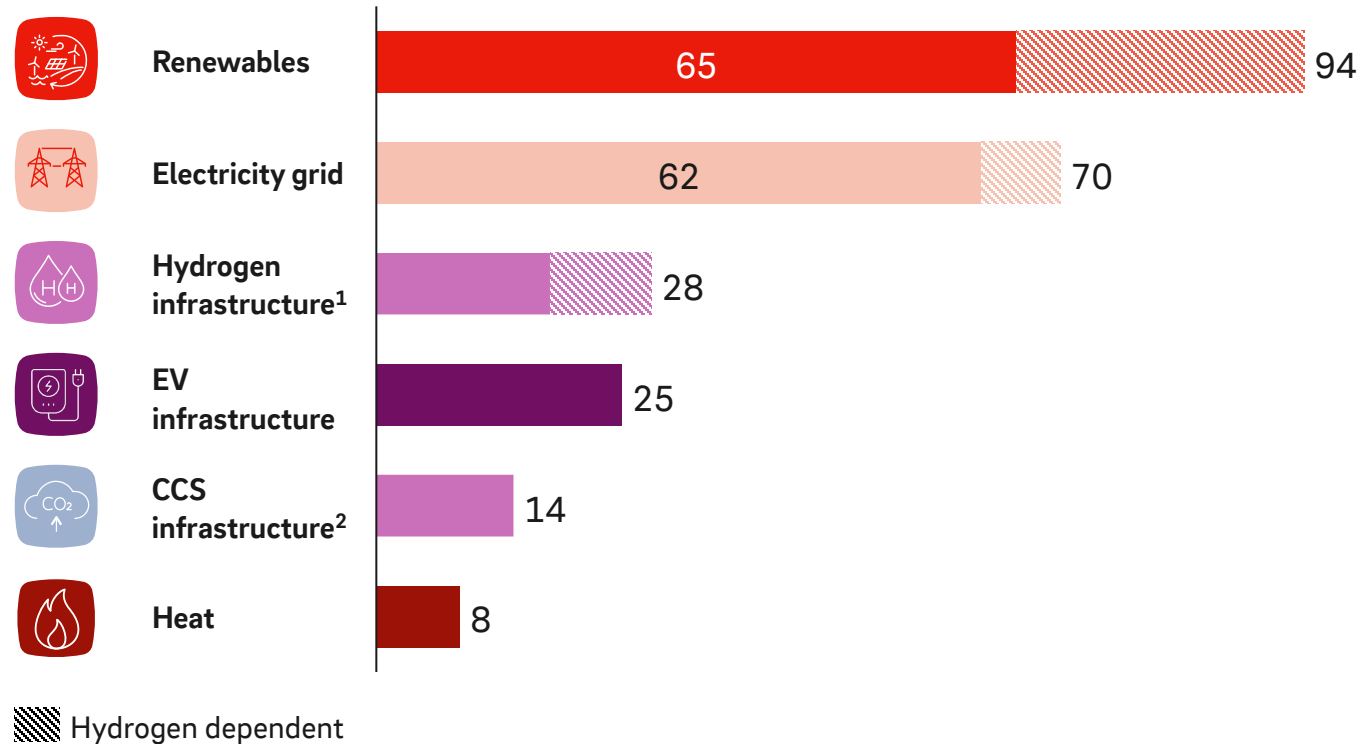
CO₂ abatement cost across key levers EU27+3 in 2040, €/tCO₂e real 2023



Step 2: Scale an affordable energy system

~50% of energy system cost increase are concentrated in the power sector

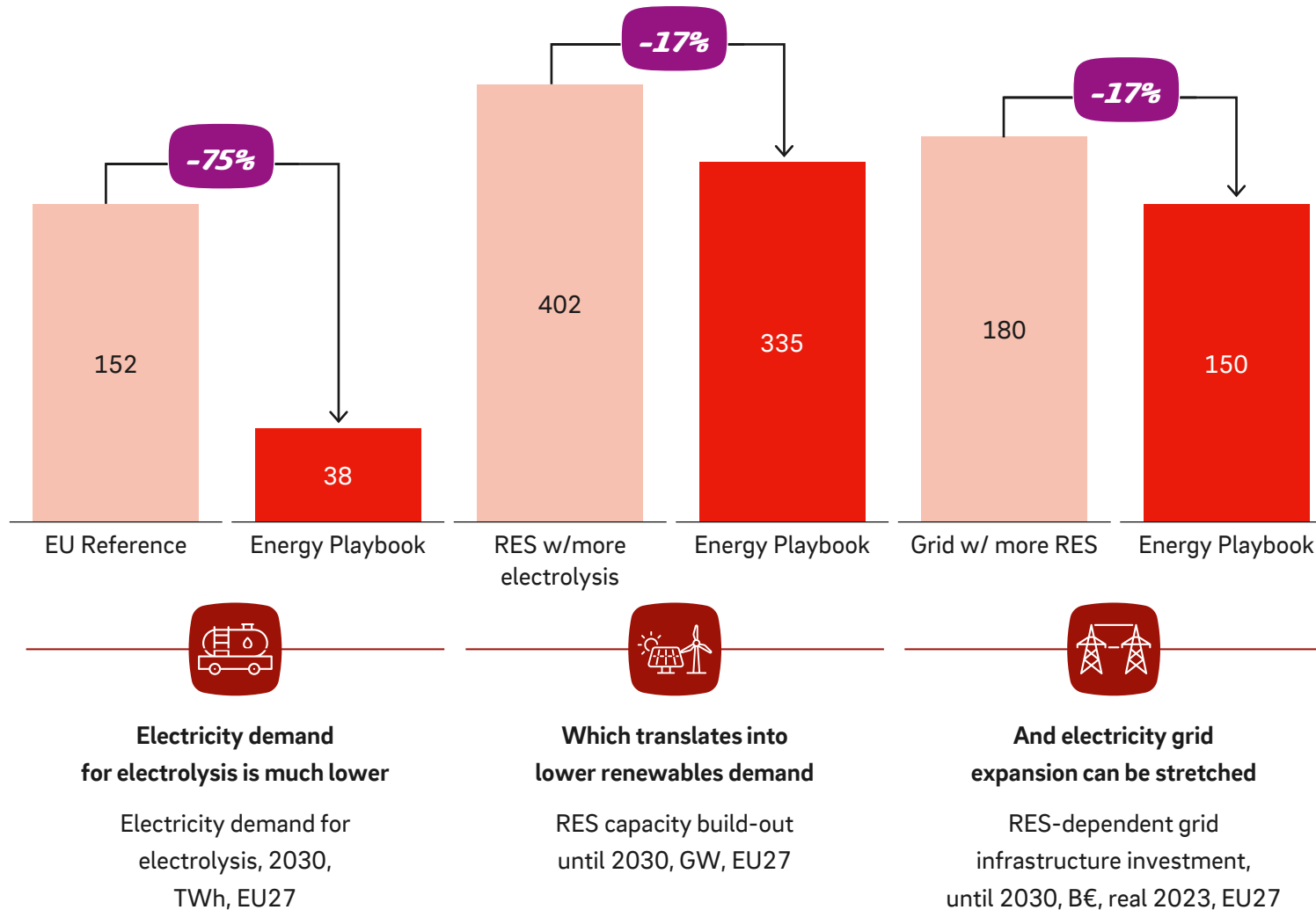
Increase of annual system cost from avg. 2019-2021 until 2035 in the EU reference scenario
B€, real 2023, EU27



¹ Grid, storages and production facilities | ² Grid and storages
Source: REPowerEU, TYNDP 2024, E.ON Analysis



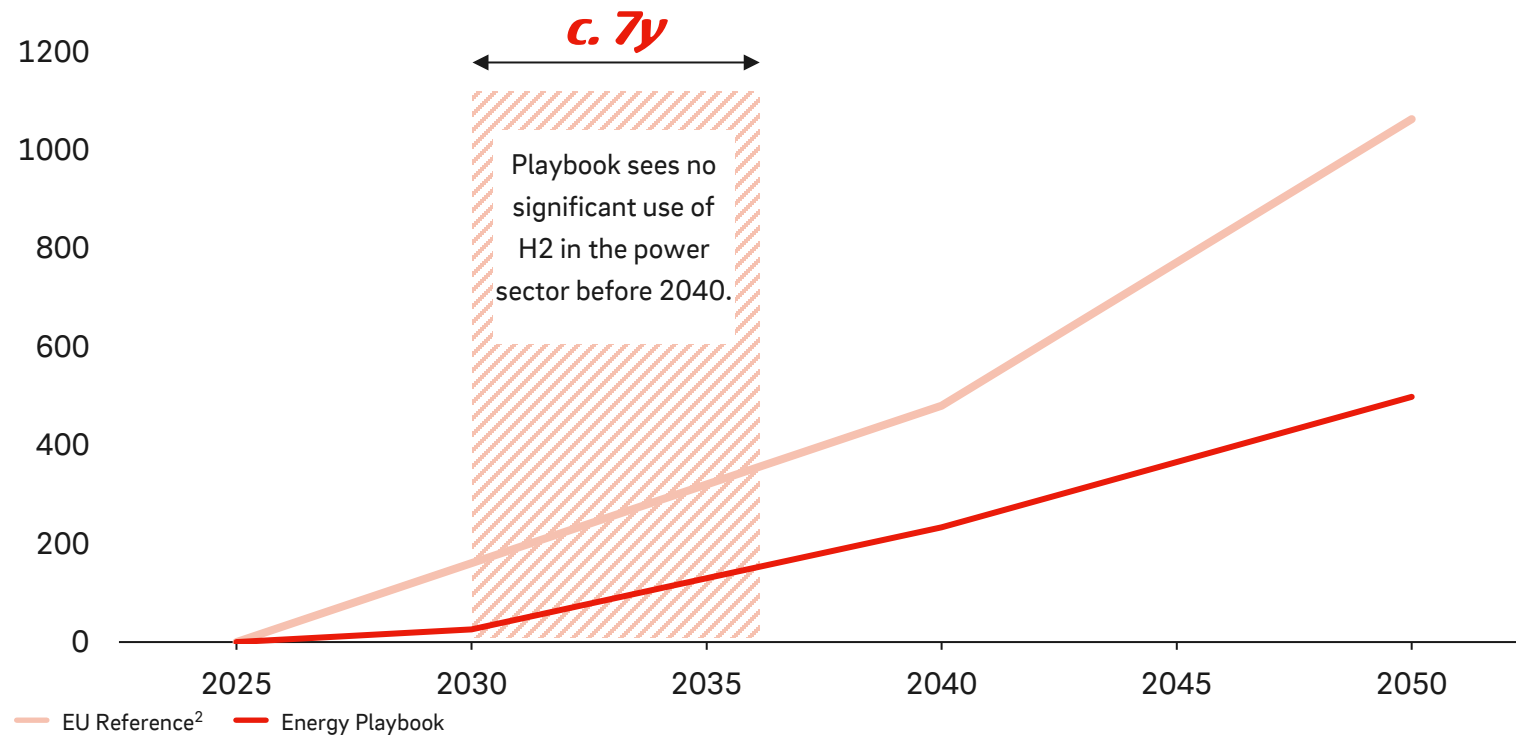
Less hydrogen also means less grids & RES



Costly hard-to-abate solutions need to be adjusted reflecting demand

Hydrogen at scale is required much later than expected

H₂ demand¹, TWh (HHV), EU27



¹ Excl. hydrogen for production of derivatives, e.g., e-fuels, naphtha. ² Hydrogen demand for 2030 of the EU Reference linear interpolated.

Source: REPowerEU, TYNDP 2024, E.ON Analysis



Adjust **core grid**
planning with
realistic demand
for an affordable ramp-up

Step 3: Don't trip on the last mile to net zero and develop necessary option space in time

The known and unknown of deep decarbonisation

The known

CCS vs. H2: put **focus more on CCS** to support affordability



CCU/S, BECCS & DACCS



Hydrogen & eFuels

The unknown

Innovation will only help us if we develop the right options in time



Deep geothermal

Exemplary



Fusion

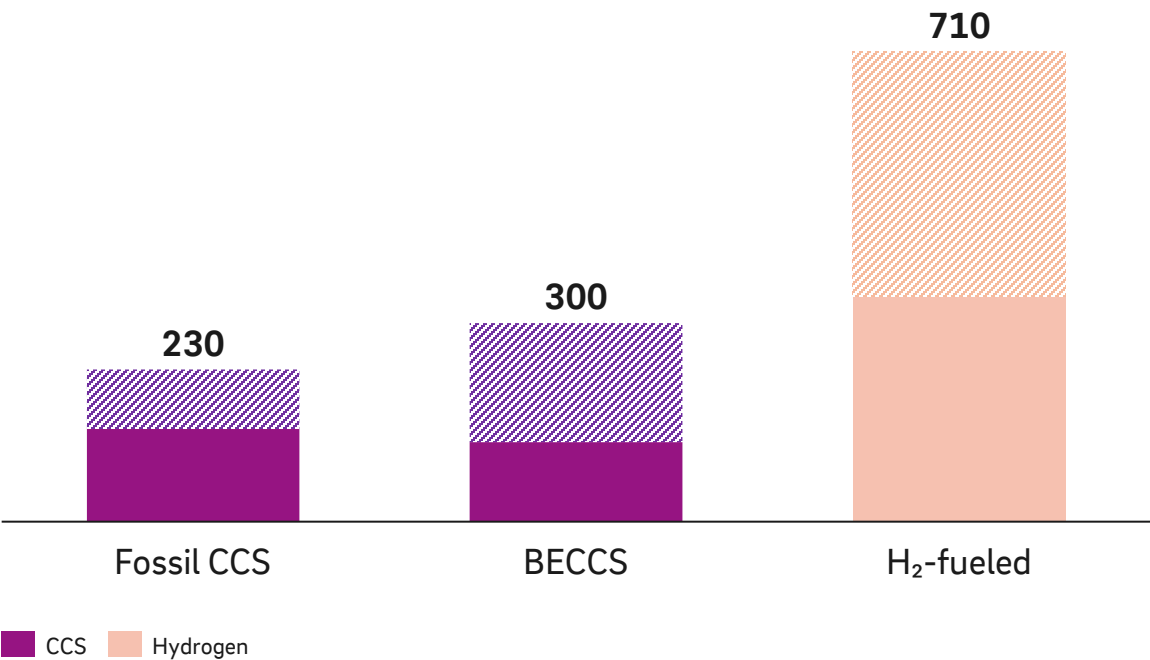


CCS cost advantage makes it a pivotal element for the last mile

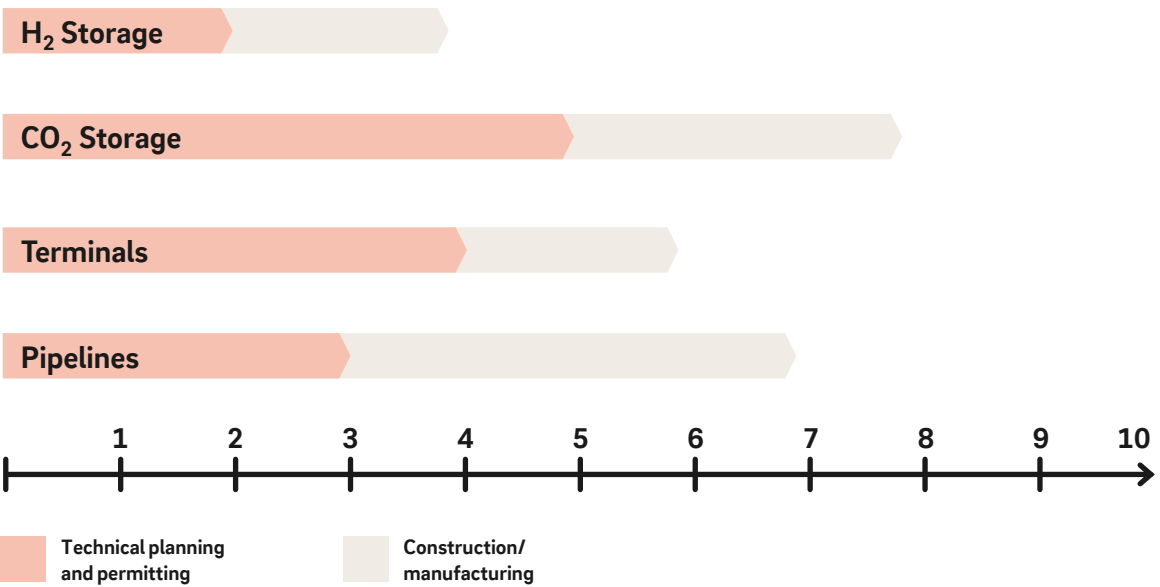


CCS offers a more cost-effective alternative to hydrogen in baseload applications¹

CO₂ abatement cost across expensive-to-abate applications, EU27 in 2040, €/tCO₂e, real 2023



Long lead times in hydrogen and CO₂ infrastructure
Build & Planning Time, years

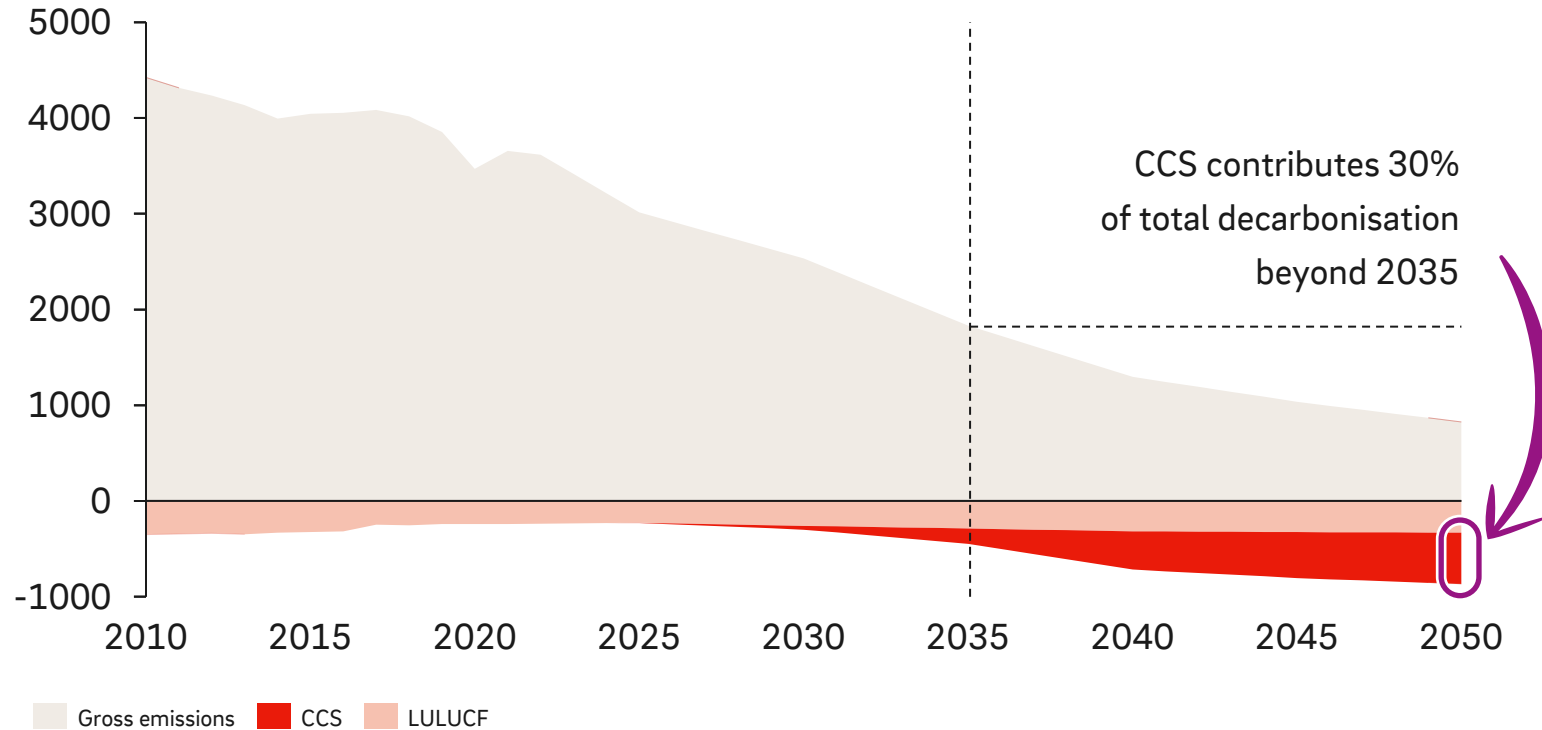


¹ Baseload: Heat or power generation designed for continuous operation, providing a stable and consistent supply of electricity to meet steady demand. | Source: E.ON Analysis

CCS is pivotal to decarbonise hard-to-abate and offset long-term residual emissions

CCS and offsets become important from 2035 onwards

Projected emissions, EU27, MtCO₂e



Source: E.ON Energy Playbook scenario

Negative emissions are **indispensable** for reaching **net zero**.

Following the three core steps yield significant improvements towards affordable energy



***Lower
unitary costs***



***Lower
investments***

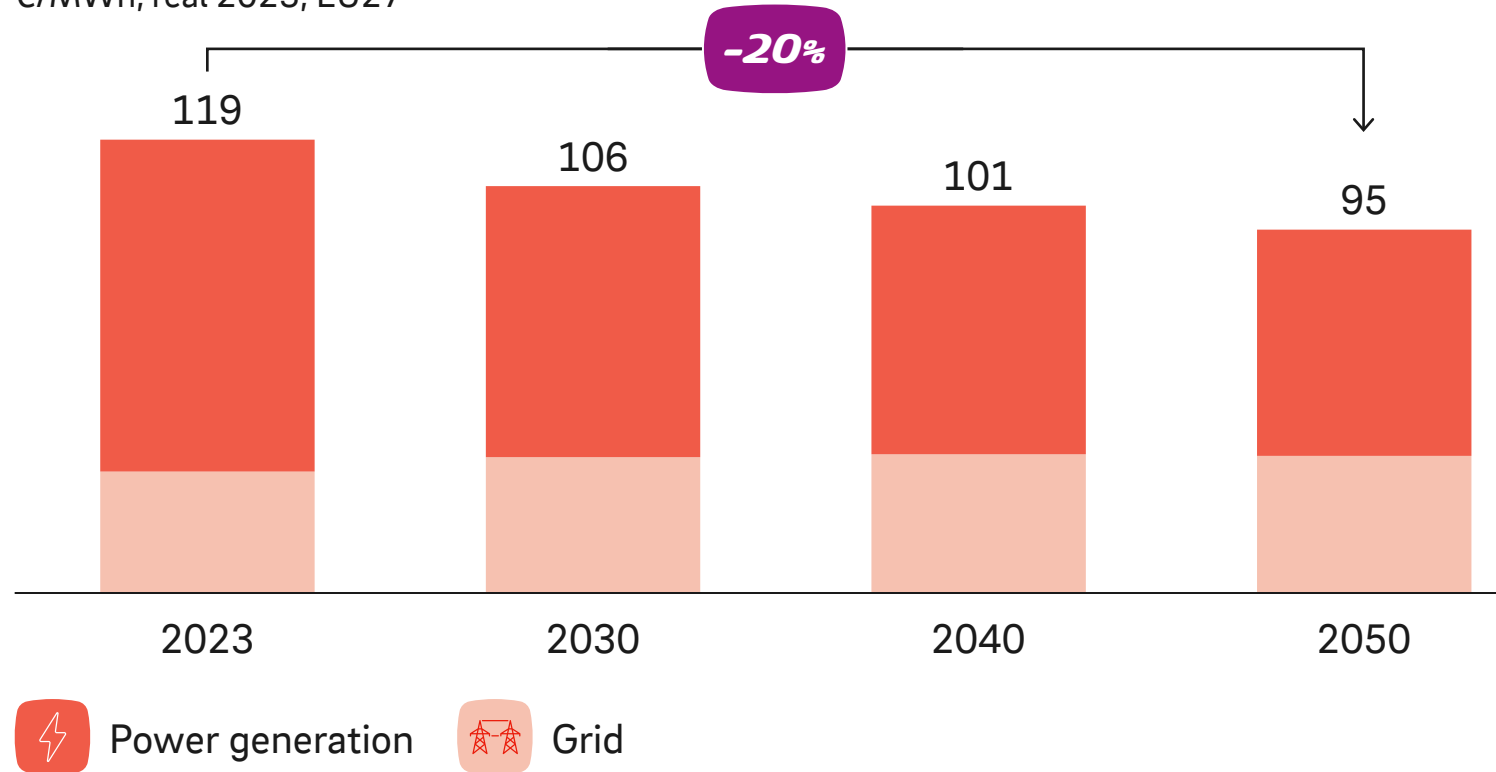


***Lower energy
system costs***



Lower unitary costs for power, reducing costs for electrified consumers

Specific power system¹ costs decline
€/MWh, real 2023, EU27

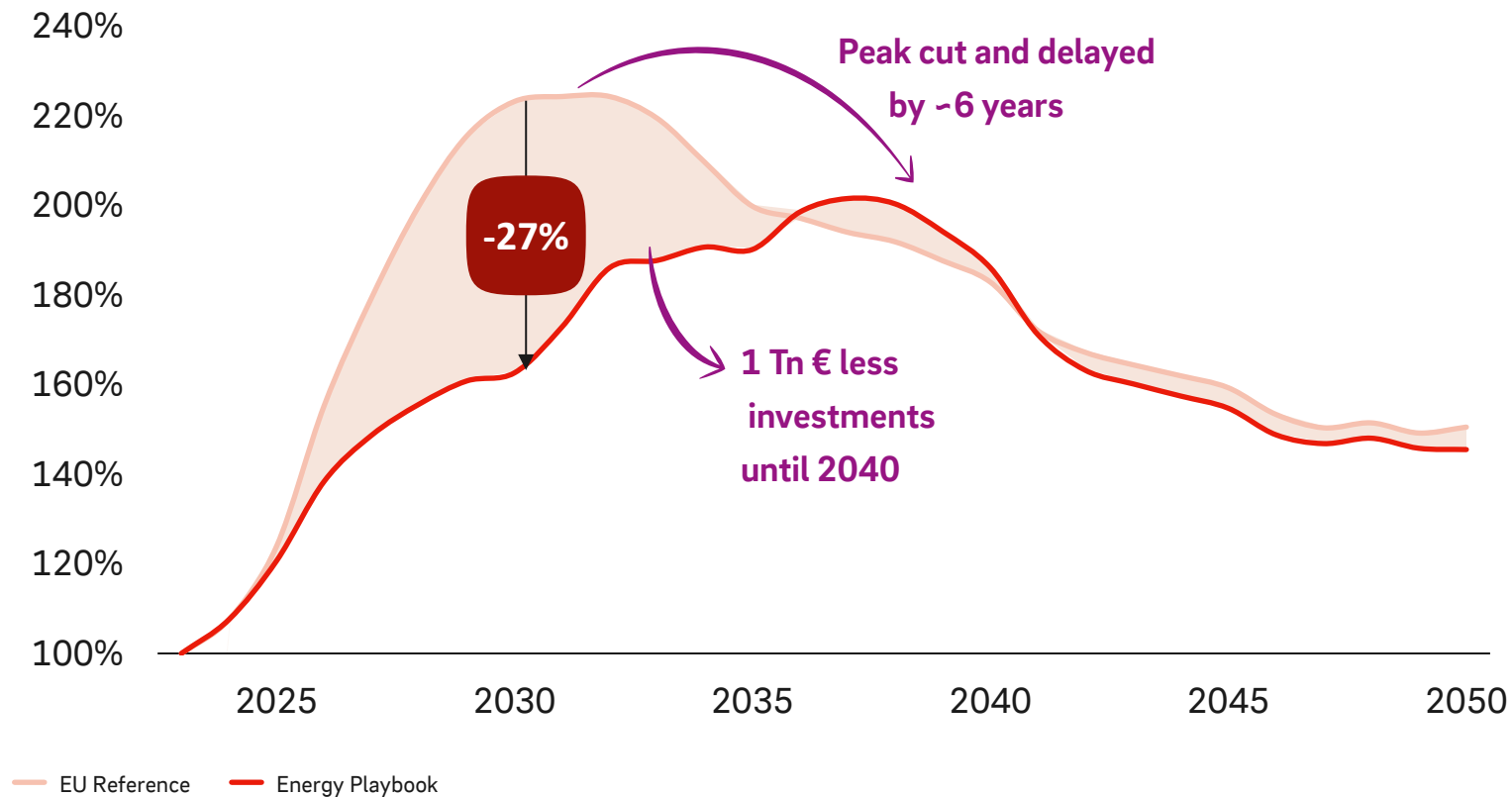


¹ Defined as total cost of power system divided by total power generation. | Source: E.ON Energy Playbook scenario



Lower energy investments, increasing affordability of the transition

Energy investment index¹, 2021=100%, EU27

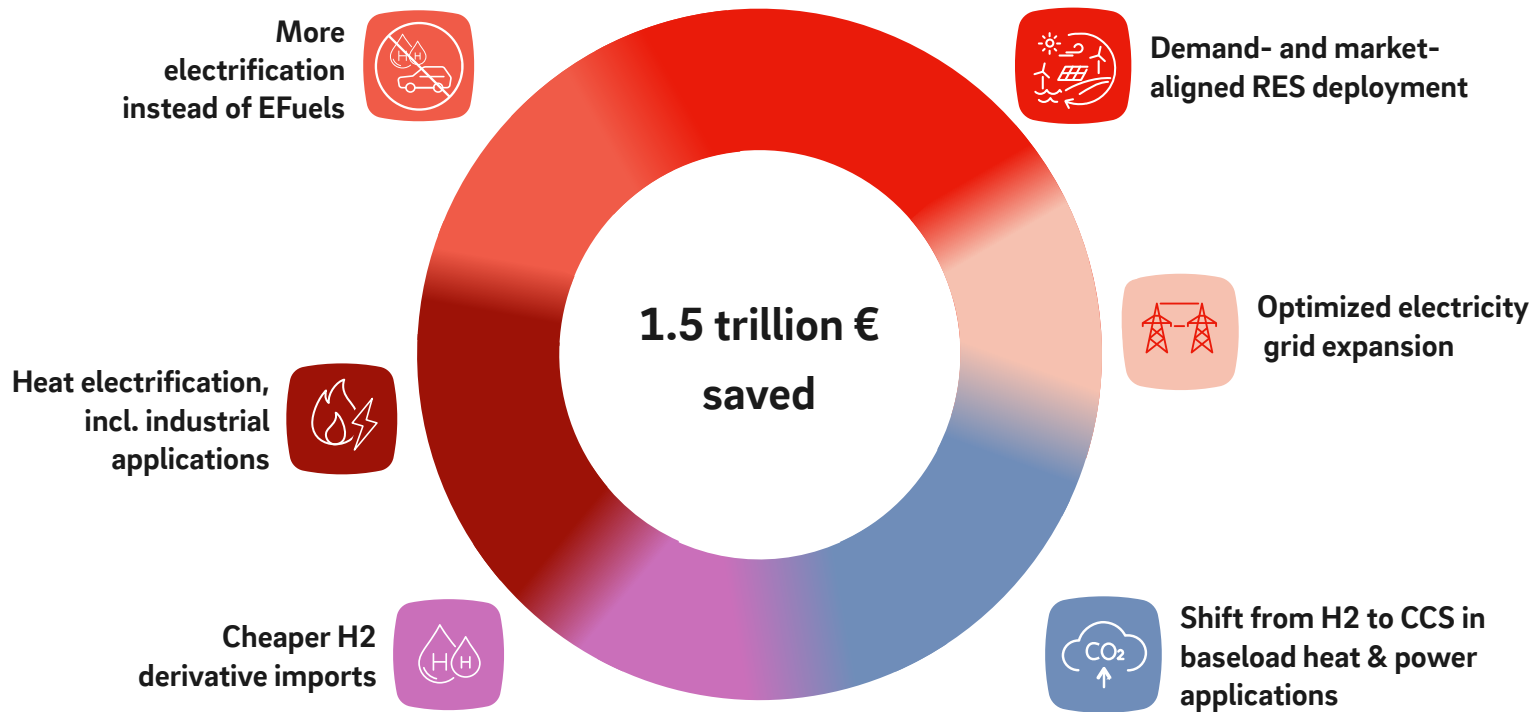


¹ The index is calculated by dividing annual energy-related investments by the investments in 2021, all adjusted to 2023 real terms. The EU Reference scenario includes targets and projections from REPowerEU & EU Impact Assessment. | Source: E.ON Analysis



Lower energy system costs, saving mounting costs for society

Cost savings of the Energy Playbook compared to EU Reference scenario
2025 – 2050, real 2023, EU27



Source: E.ON Energy Playbook



1.5 trillion € saved
until 2050 means on average
300 € less
per household every year

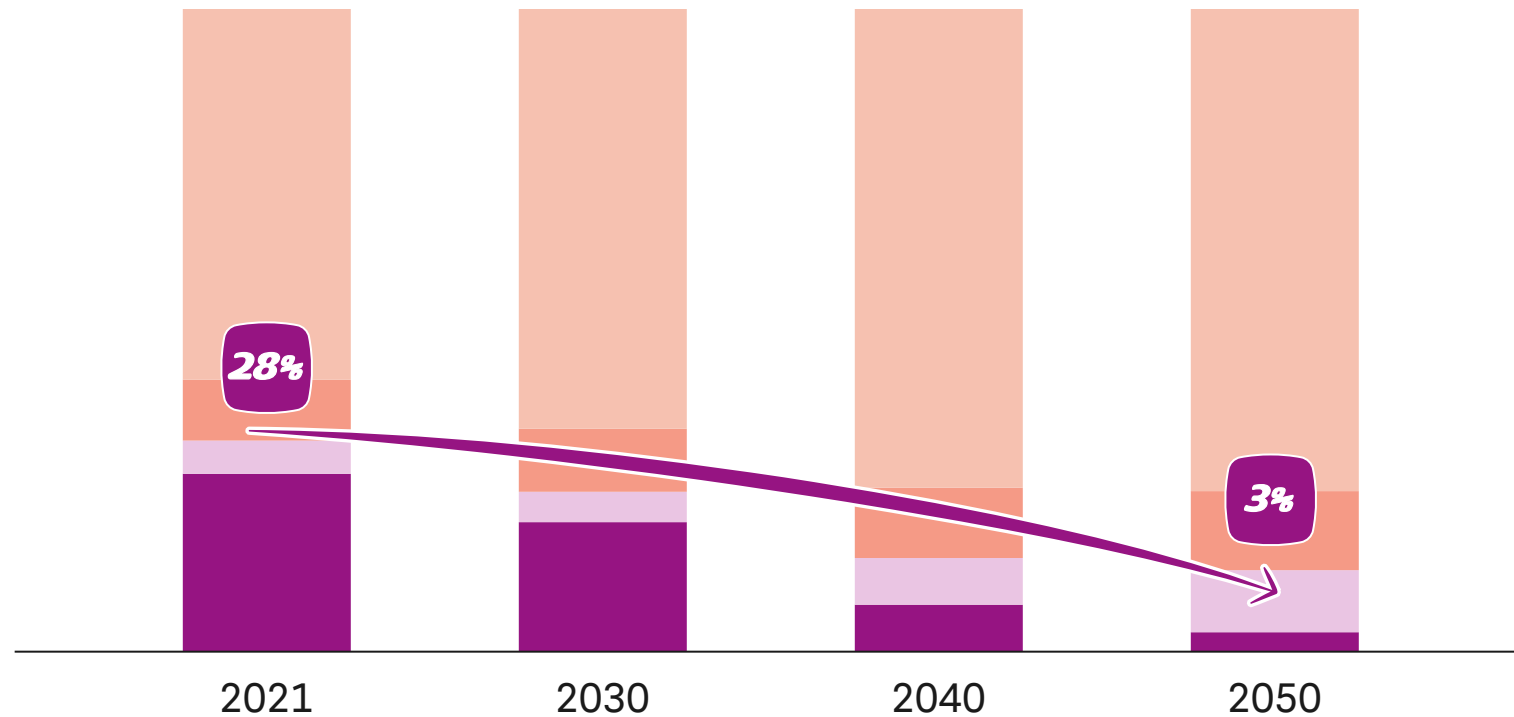
*The energy transition
is a goal worth fighting for*



The energy transition will make the EU more resilient and reduce dependencies

Energy transition will make EU independent from energy imports

Allocation of energy system cost in percentage, EU27



CAPEX



Non-energy OPEX



Non-fossil fuels



Fossil Fuels

Thank you.

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