

Climate policy: go for the low-hanging fruit to save the industry?

Perspective of the energy-intensive industrial consumers

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Session III



Some quotes from governor Wunsch*:

- Climate transition: “comparable to an **oil shock** but spread over 25 years”
- “For Belgium: annual cost of $\pm 2.5\text{-}3.5\%$ of current GDP $\sim$ a loss of ± 0.1 pp growth rate per year” $\Rightarrow$ “no free lunch, but appears **manageable**”
- “full decarbonisation of energy-intensive industry will be **costly**, and could lead to real trade-offs for those goods that are internationally traded”
- “**Waiting is not always bad**: one should not roll-out technologies before they are cheap enough”

*Presentation at Febeliec Energy Forum (6 October 2026, Brussels)

How to decarbonize the European industry?

- For the industry, it is not about low or high energy prices, it is about **competitive** prices
- Technological readiness of electrification does not necessarily imply competitive readiness

Policy recommendations

Demand:

- **Low-hanging fruit** (mostly ETS2): electrify transport and low T heat first
- Need for support for the **hard-to-abate** industry (ETS1), but is less expensive than many people think

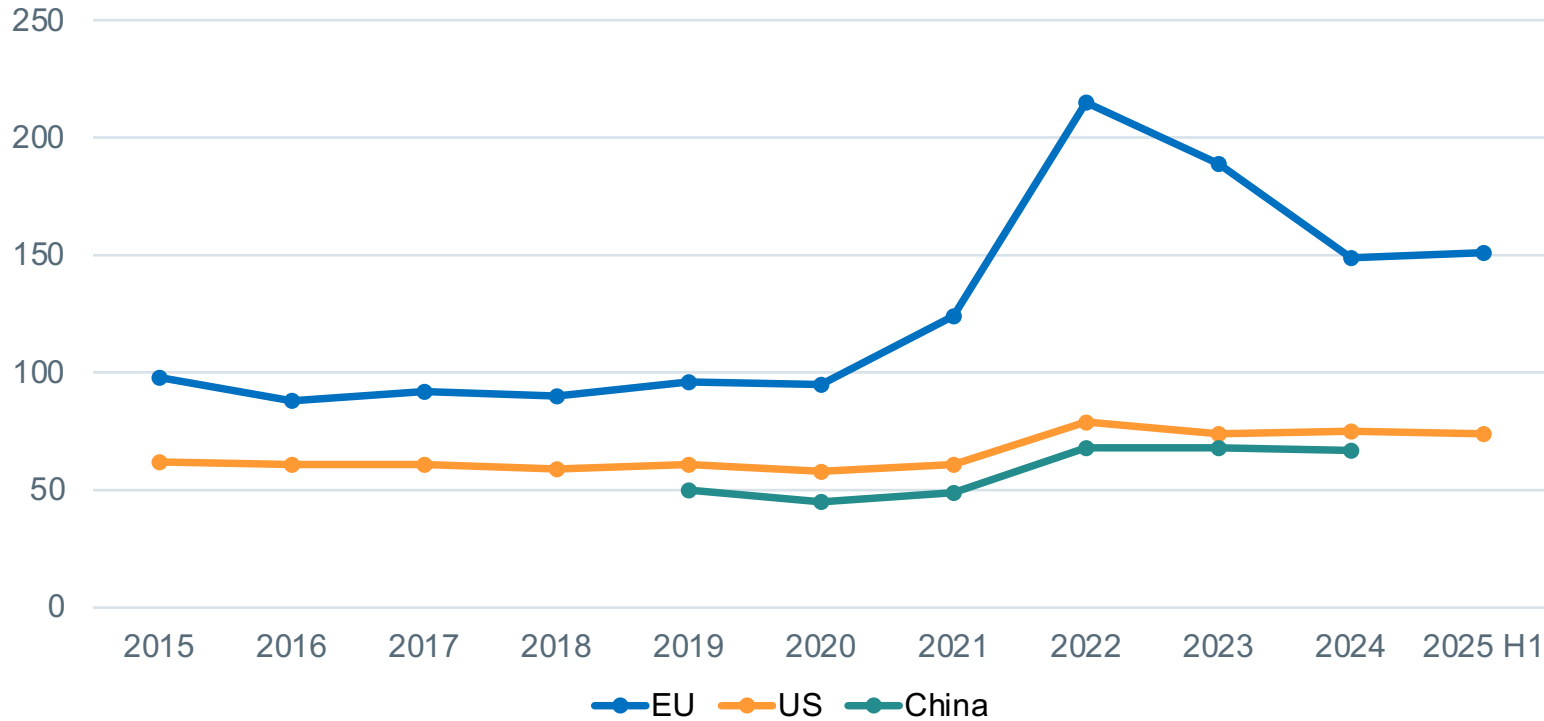
Supply:

- Go for the lowest **total system cost** when deciding on electricity mix



Electricity: a decade of widening price gaps

Industrial end-user prices, nominal €/MWh • ACER: EU users consuming 70–150 GWh/year



€151 vs €74

EU / US in H1 2025
ACER comparison

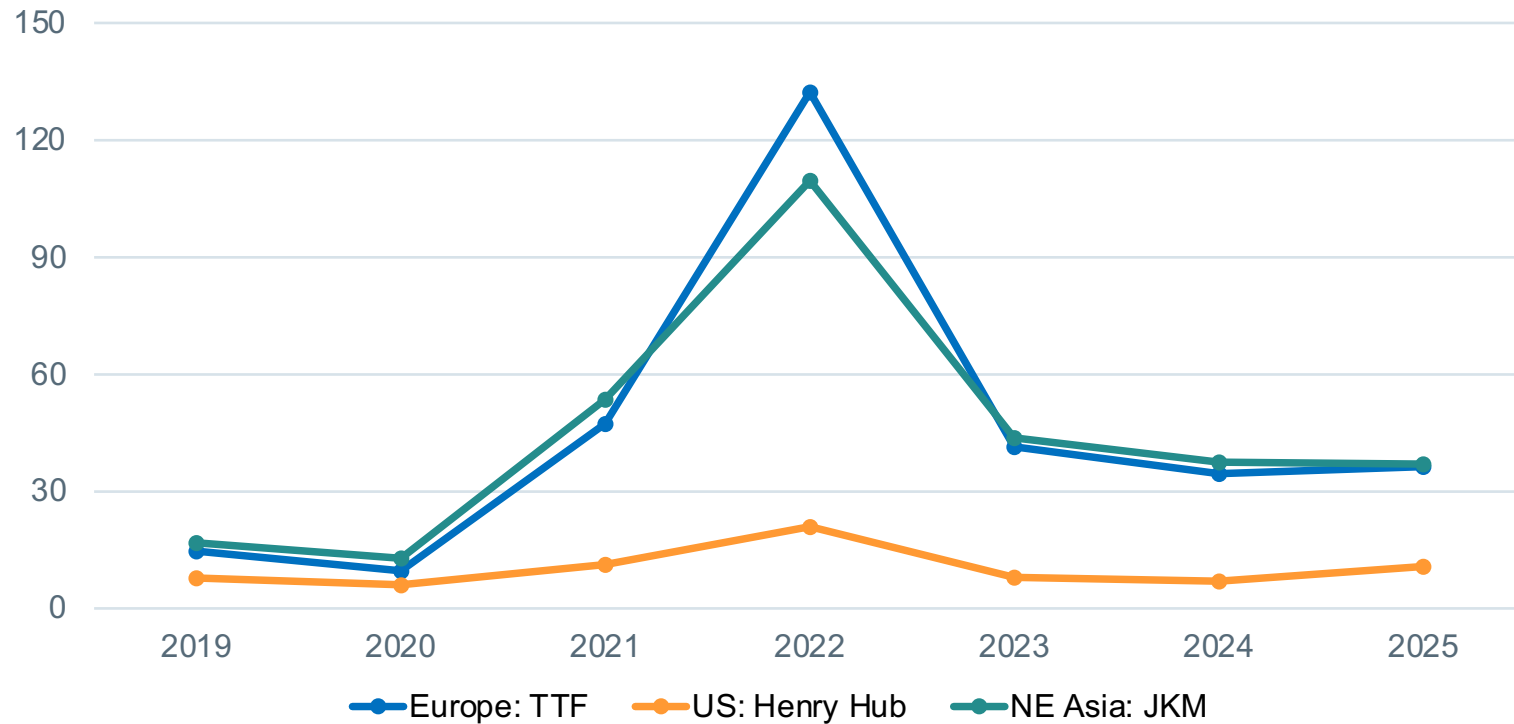
**What about >150
GWh?**

IEA: EU prices remain >2× the
US and about 50% above China.

The €151 figure is not the price paid by every large energy-intensive site.

Gas: Europe and Asia share LNG exposure

Wholesale benchmarks, nominal €/MWh • annual means of ACER monthly observations

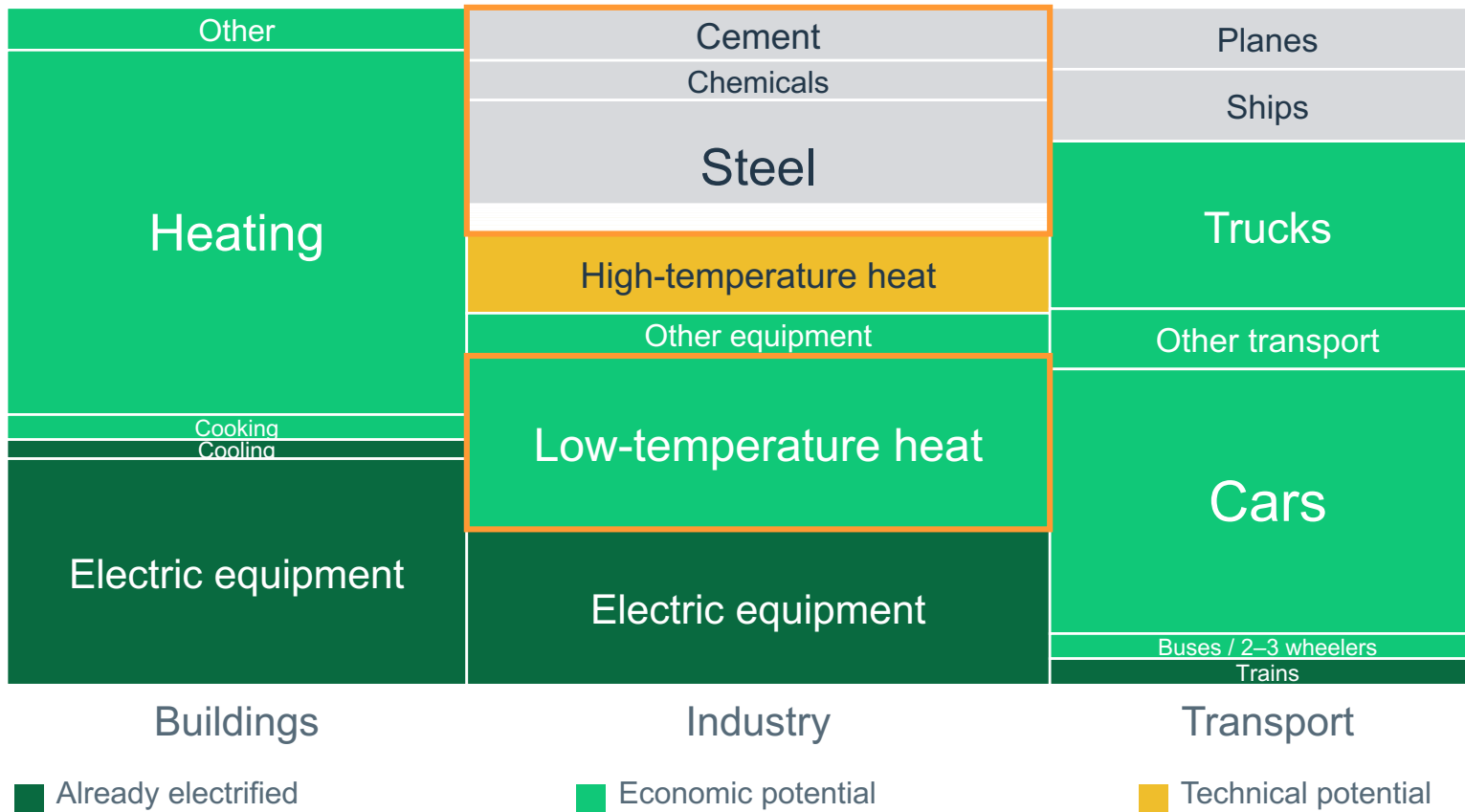


2025: €36 / €11

Europe / US wholesale
A ratio of approximately 3.4

Electrification potential

Adapted from **Ember**



Electrifying transport and low-temp heat is much more efficient than fossil fuel use

→ start with this low-hanging fruit:

- transport
- low-temperature heat

Gas use in hard-to-abate industry: estimate

Heavy industry with constant emissions: 2% of 1990 EU27 emission levels

Selected sector groups: 50 bcm/year



- Chemicals & plastics: 29 bcm
- Cement, glass & ceramics: 13 bcm
- Steel: 8 bcm

≈100 Mt CO₂/year

Full-oxidation equivalent of 50 bcm natural gas

≈2% of 1990

Compared with EU27 gross GHG emissions of 4,87 MtCO₂e

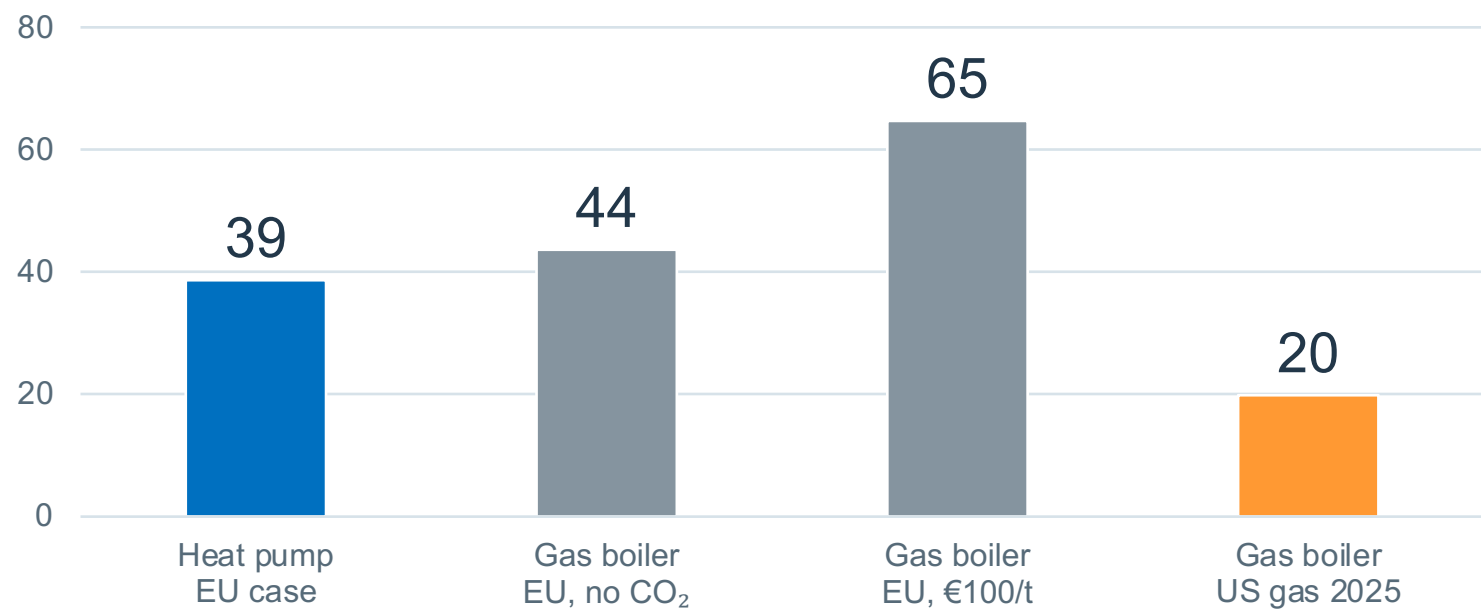
Norway can easily supply the hard-to-abate sectors with gas → price volatility ↓ and SoS ↑



Not low or high, but **competitive** energy prices

150°C heat delivery • Markussen–Rosenow cases + US 2025 gas-based comparator • €/MWh heat

Levelised heat cost



The ≈€39 case

€70/MWh electricity
8,000 hours/year • COP ≈2.8
Free 80→60°C heat source



Support for European industry is feasible

Illustrative annual gas / electricity price support

$$\begin{array}{ccccccc} \mathbf{500\ TWh} & \times & \mathbf{€30/MWh} & = & \mathbf{€15bn} & \approx & \mathbf{<0.1\%} \\ \text{eligible electricity/gas} & & \text{price reduction} & & \text{annual budget} & & \text{of 2025 EU GDP} \\ \text{per year} & & & & & & \end{array}$$

$$€15bn / €18.800bn\ GDP = 0.08\%$$



What energy supply mix?

How to decide on **the future electricity supply mix**?

Febeliec position paper (October 2026): comparing far-offshore wind with new nuclear

➔ system planning for the optimal clean electricity supply mix needs to take into account

1. Total system costs
2. Appropriate discount rate

What must be compared

LCOE is not system cost

**Generation
wind farm / reactor**

Grid
connection +
reinforcement

Backup
firm capacity for low-
wind periods

Market value
capture rate /
cannibalisation

Costs should not disappear because they are paid through the grid tariff or socialised

Use a 3% real social discount rate (SDR) when informing policymakers about the optimal energy mix



Energy mix

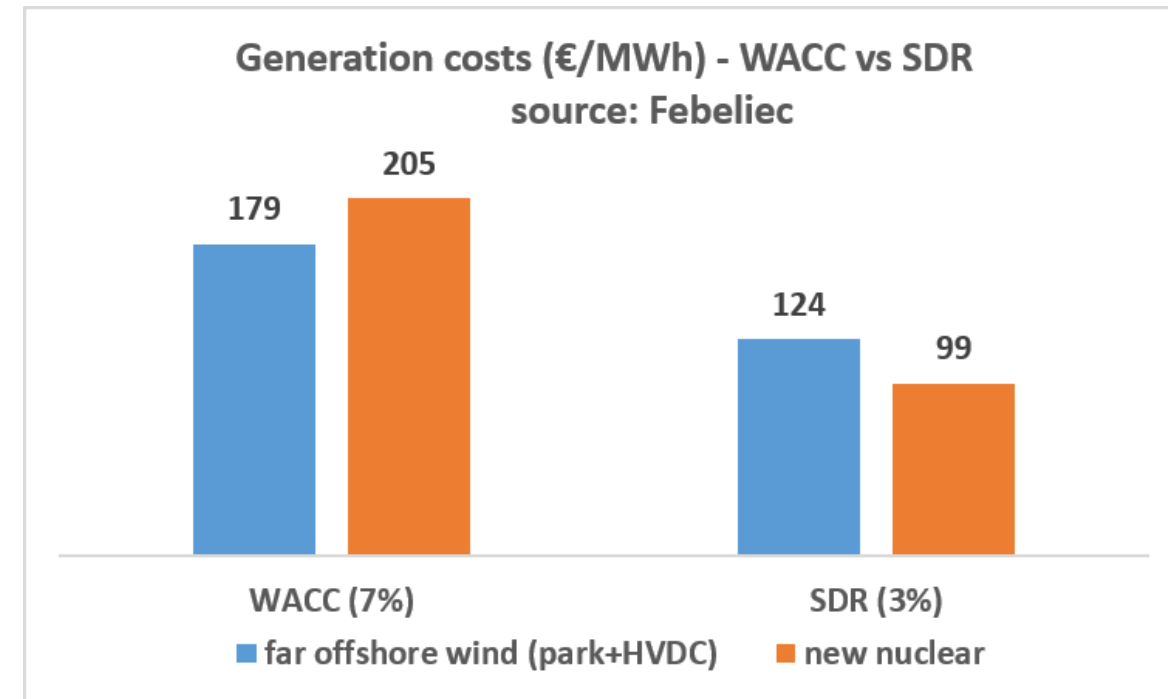
3% SDR: huge impact

60–80 year asset life → discount rate of 3% has an enormous impact

- At 7% (private): far-offshore wind wins
- At 3% (society): new nuclear cheaper

Society cares about the next generations => costs/benefits far into the future still have a weight in our decision process => low discount rate needed when discounting the future

[EC: 3% recommended]



Far-offshore wind: cost stack

Central case: 2 GW HVDC export system, 350 km, 45% net delivered CF

Roughly half of the value-adjusted total is outside the wind farm itself



≈ €124/MWh central value-adjusted system cost



Component	Central value
Wind park generation	€61.5/MWh
HVDC converters + 350 km cable	€35/MWh
Dispatchable backup capacity	€6.5/MWh
Market-value adjustment	€21/MWh

New nuclear: break-even

Cost model: 3% SDR, 60y life, 75–85% CF, 10–15y build

Against central value-adjusted far-offshore: break-even €12,900–16,200/kW overnight CAPEX

At €10,000–12,000/kW: nuclear cost $\approx$ €89–118/MWh

Key condition: replication and series effects, not a one-off FOAK project

Nuclear breaks even against	Overnight CAPEX
Low offshore, value-adjusted (€100/MWh)	€9,300–11,900/kW
Central offshore, generation cost (€103/MWh)	€9,800–12,400/kW
Central offshore, value-adjusted (€124/MWh)	€12,900–16,200/kW
High offshore, value-adjusted (€154/MWh)	€17,300–21,600/kW



Q&A

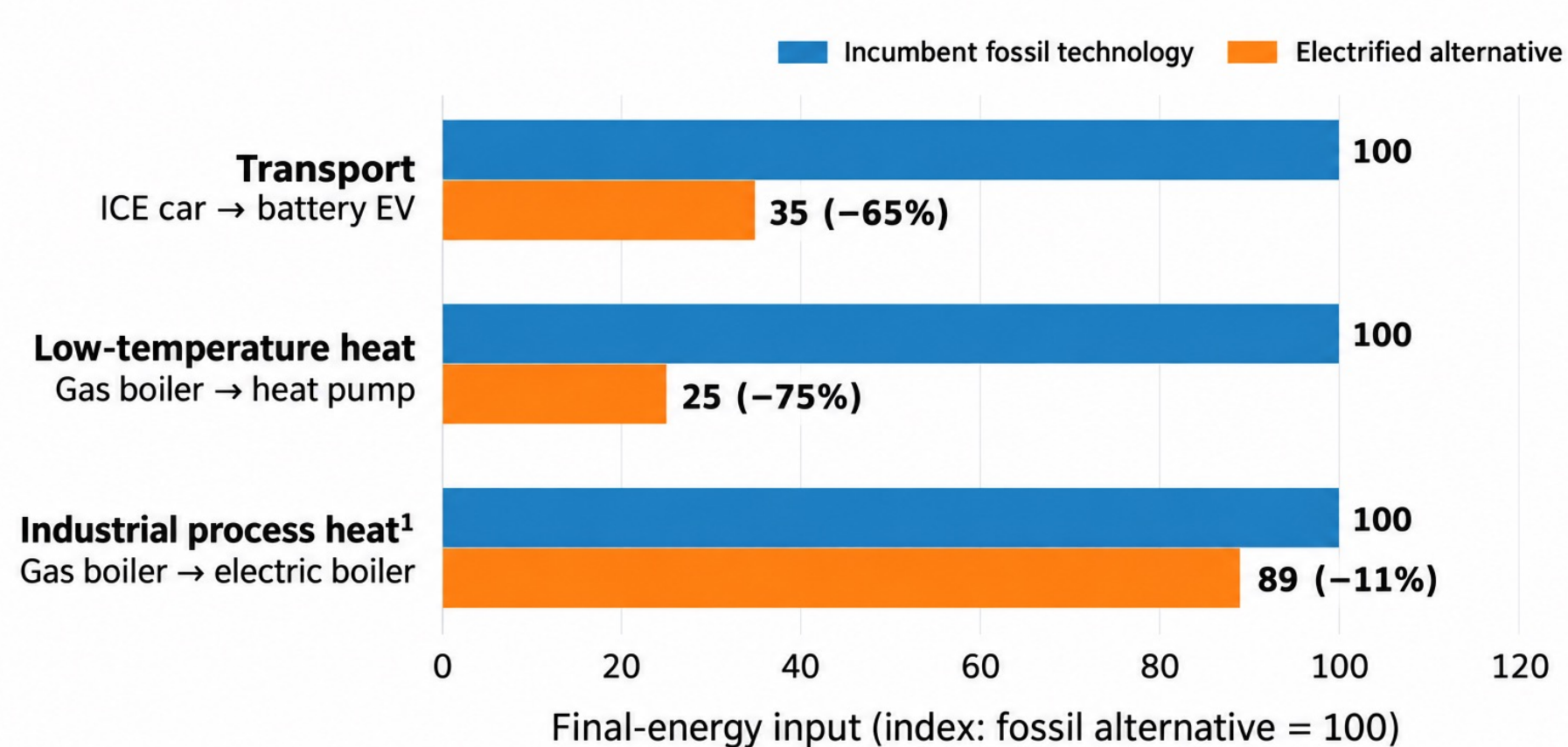
Q&A

Backup slides

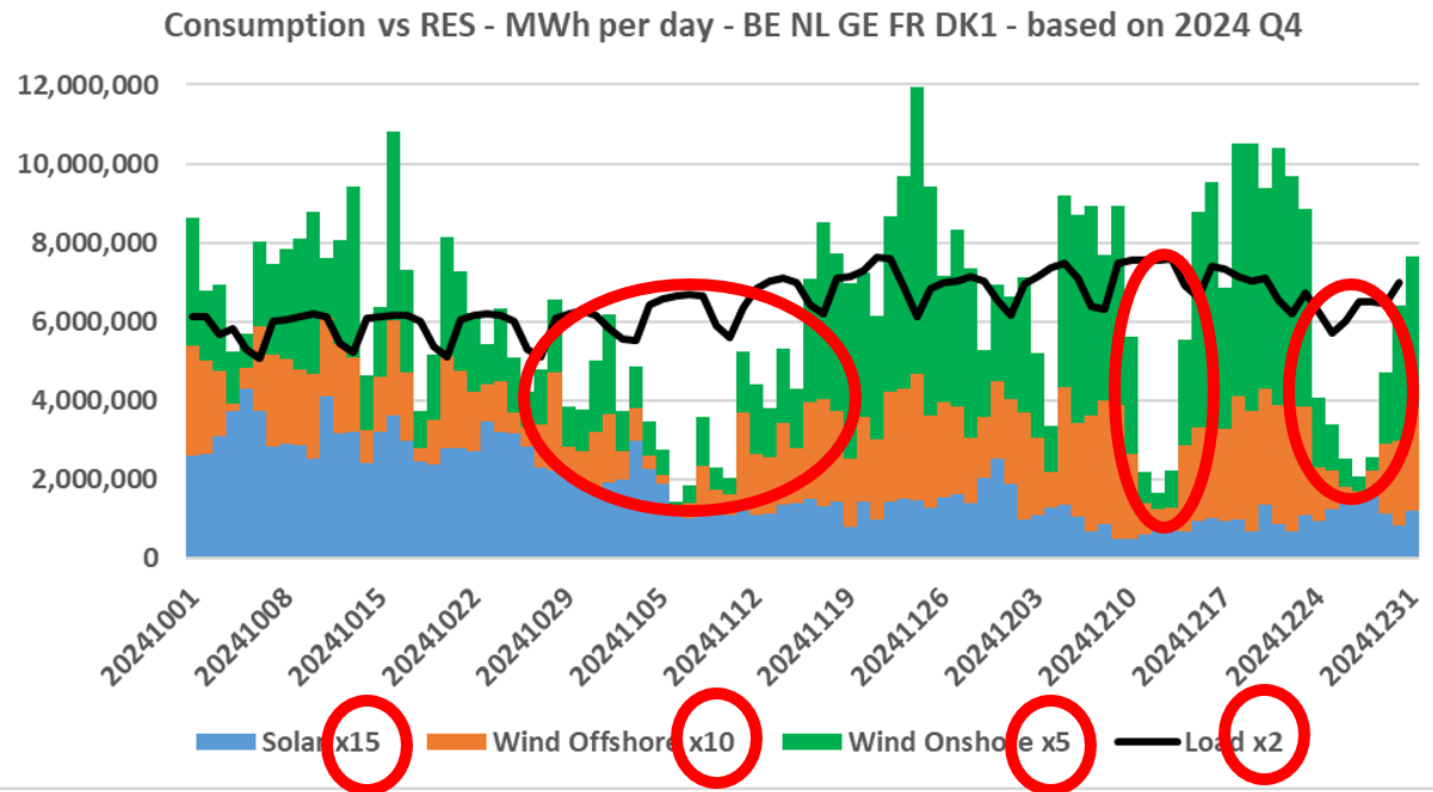
Electrification: low and not-so-low hanging fruit

Electrification does not deliver the same energy savings in every sector

Illustrative energy inputs for equal useful output; values are not system-wide averages.



RES+batteries: necessary, not sufficient



Solar, onshore wind, biomass and flexibility should grow where cost-effective

Batteries shift energy; they are not an energy source

Multi-day low-wind periods still require firm capacity

=> **Firm dispatchable backup needed**

=> **Molecules to stay in the energy mix**