

Key price drivers in the Austrian power market to 2030

Lars Jerrentrup, lars.jerrentrup@auroraer.com

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Vienna, 26 September 2024

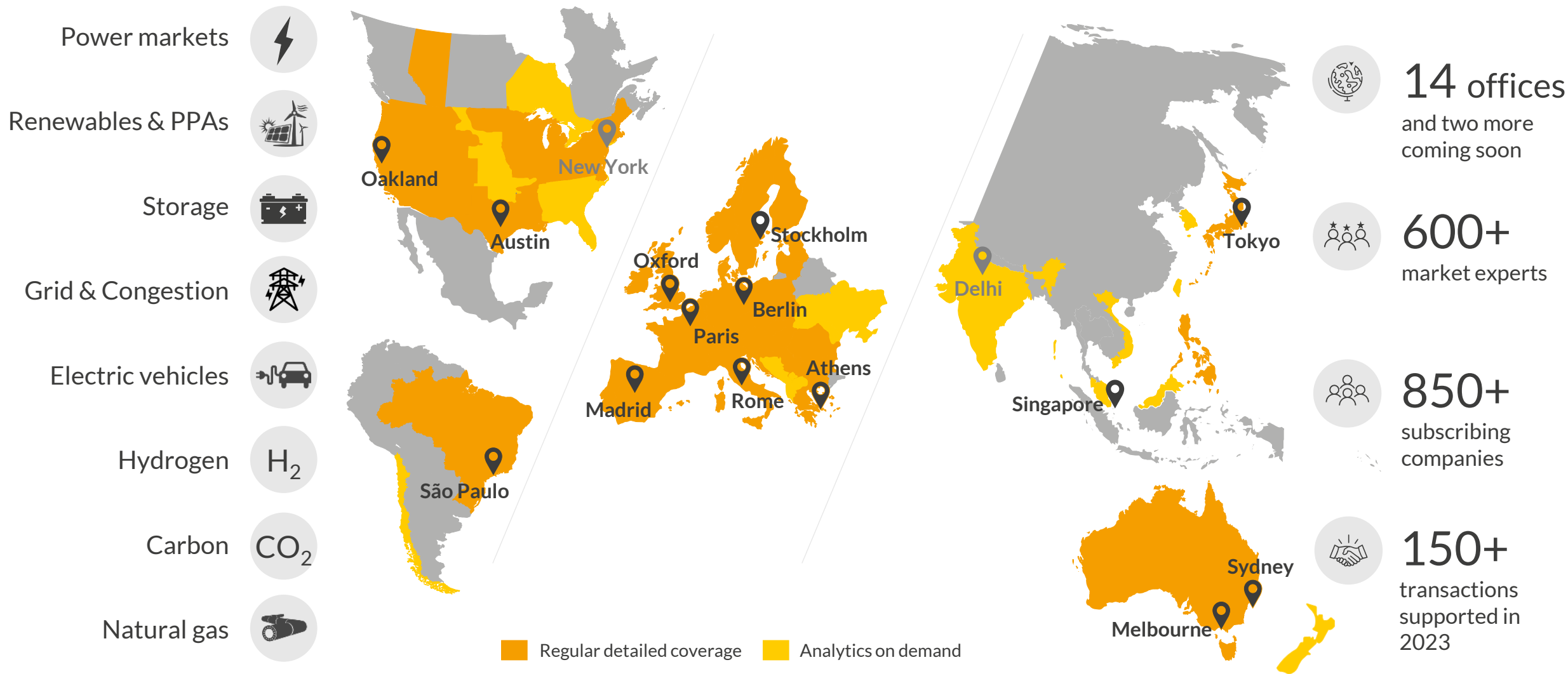




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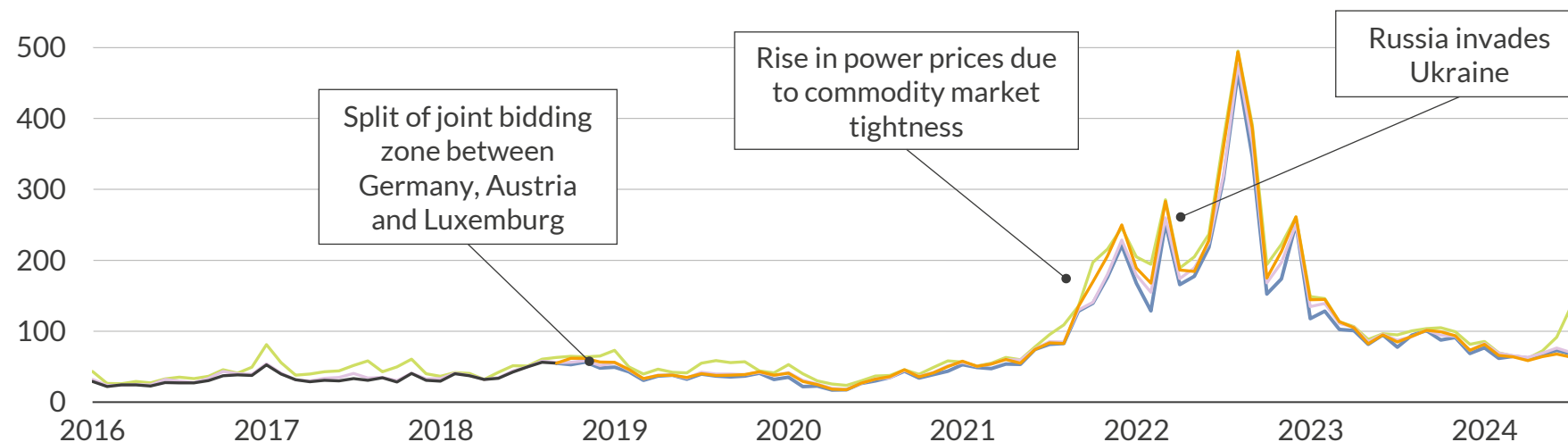
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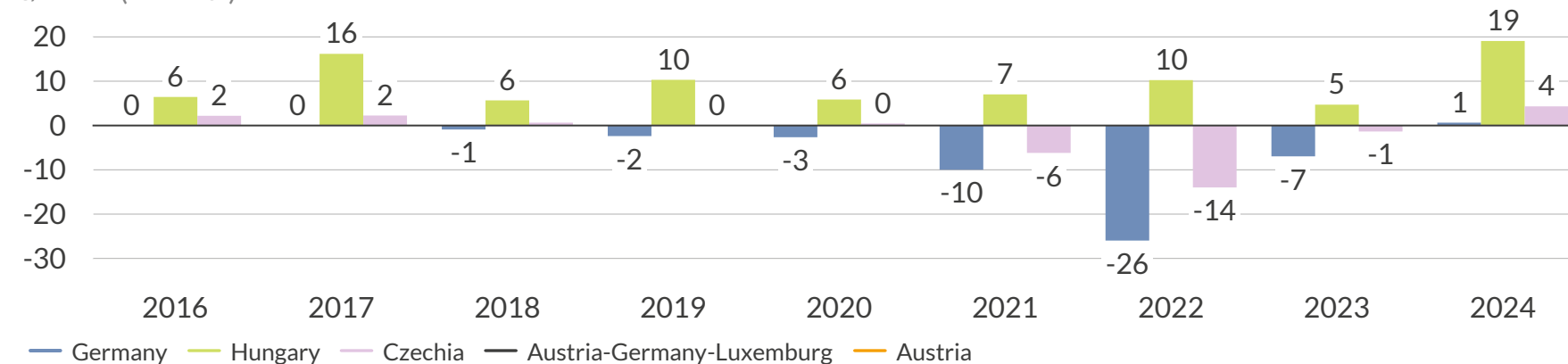


Power prices showed similar trends to neighbouring countries, but were mostly higher than in Germany and lower than in Hungary

Historical baseload electricity prices¹
€/MWh (nominal)



Average annual delta in baseload electricity prices between Austria and neighbouring countries
€/MWh (nominal)



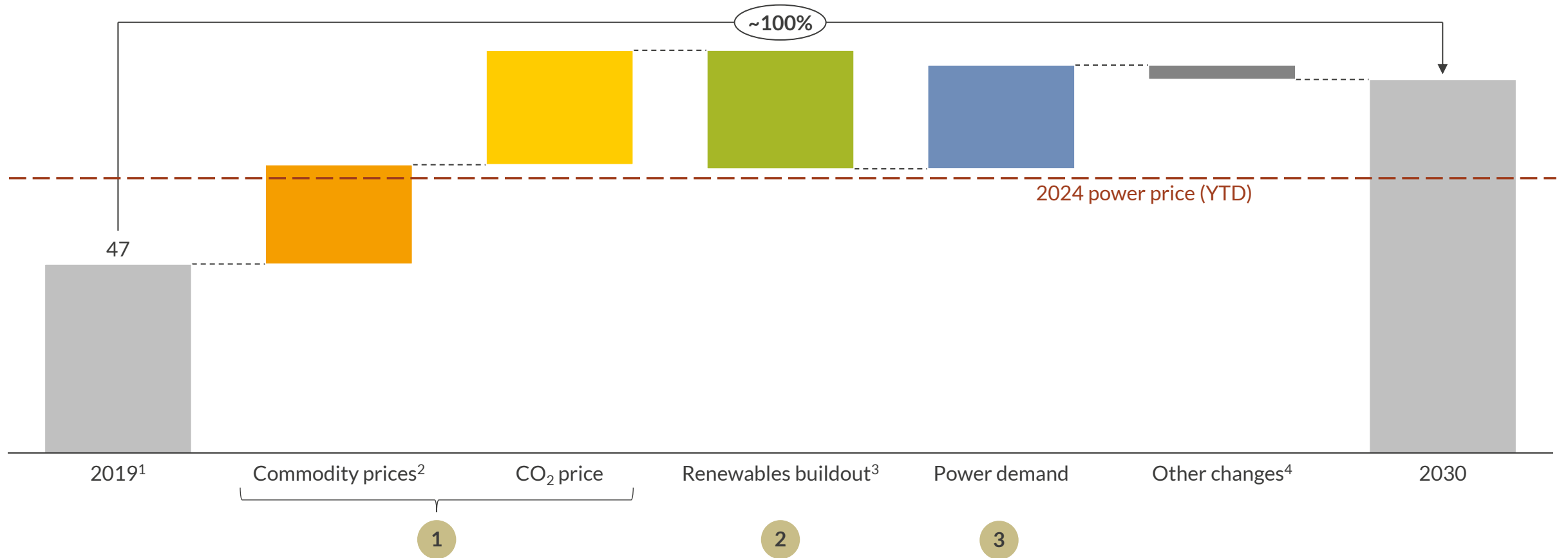
1) Monthly average.

- The single bidding zone between Austria, Germany and Luxemburg was split in October 2018 to avoid grid congestion.
- Consequently, Austria benefited less from cheap renewables generation in Germany and prices rose on average 7 €/MWh above German levels between 2018 and September 2024.
- As in other EU countries, Austrian power prices rose post-Sept 2021 due to rising commodity prices, which was massively amplified by the outbreak of the Ukraine war in early 2022.
- Accelerated build-up of LNG import capacity, mild winters and slower economic dynamic have been driving down power prices since late 2022. Prices continued to drop strongly up until 2024.

By 2030, power prices double relative to 2019 due to higher commodity and CO₂ prices while renewables buildout is largely offset by rising demand

Estimated decomposition of drivers for Austrian baseload power price (Aurora Central scenario)
€/MWh (real 2023)

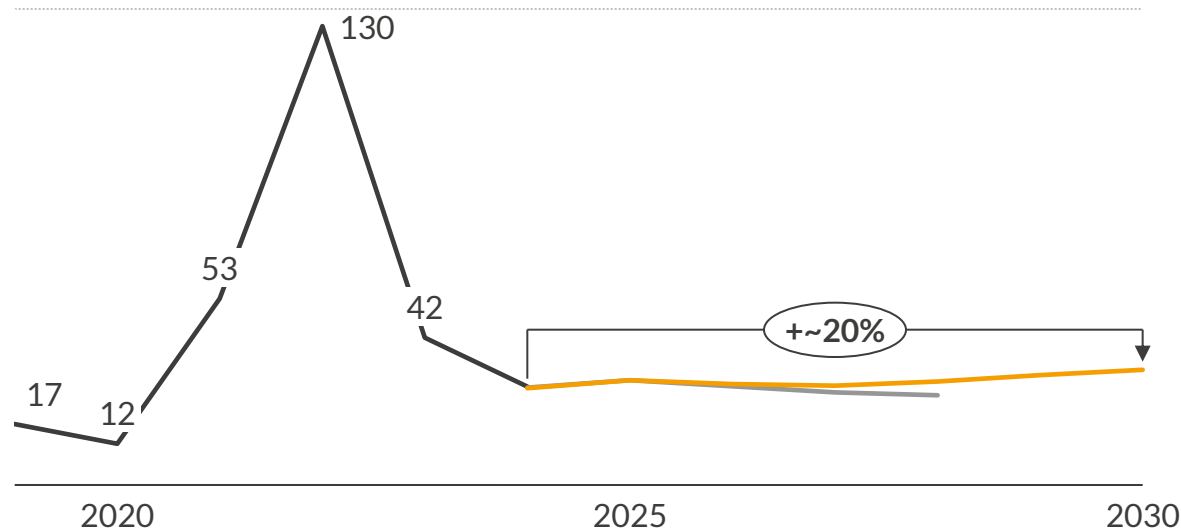
Deep-dive on following slides



1) Price for 2019 represents historical baseload price, while power price for 2030 reflects model results for the specific scenario. 2) Including gas and coal. 3) Buildout indicates the effect of total future buildout of solar and wind, including subsidised, merchant-risk, and behind-the-meter capacity. 4) Examples include weather year effects, as well as interaction effects.

While gas prices see a ~20% increase by 2030 compared to 2024, carbon prices are expected to double in this period

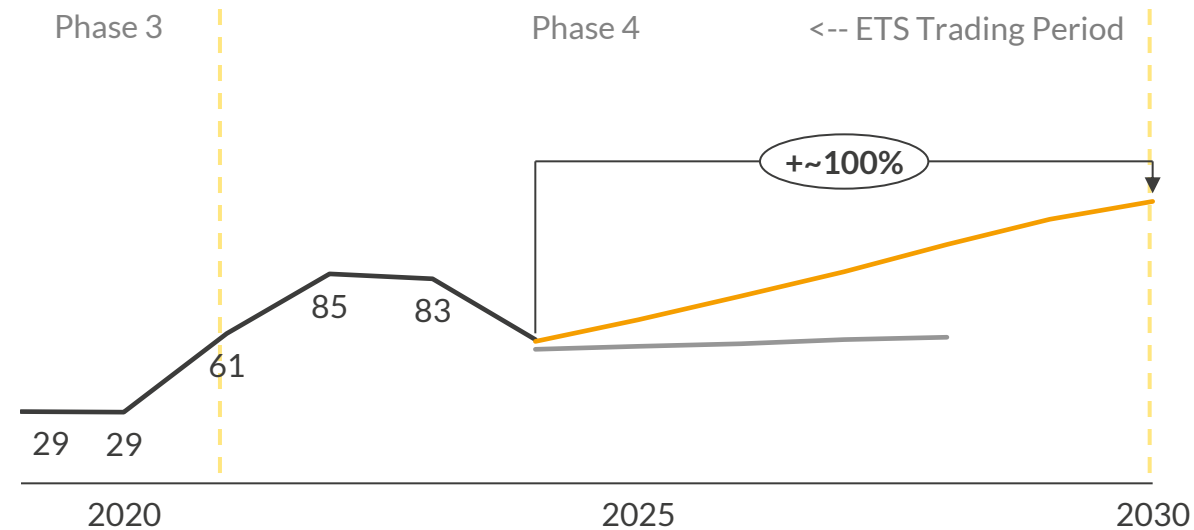
Natural gas prices¹
€/MWh (real 2023)²



- The rise in gas prices is sustained by Europe's increasing reliance on LNG imports, which remain highly demanded in light of global competition.
- Specifically, key drivers behind the gas price include:
 - Decline in domestic gas production (and still low availability of Russian gas)
 - Limited LNG import capacity additions, especially post-2027
 - Rising global demand for LNG, particularly from Asia

— Historical — Futures — Aurora Central

Carbon prices
€/tCO₂ (real 2023)²



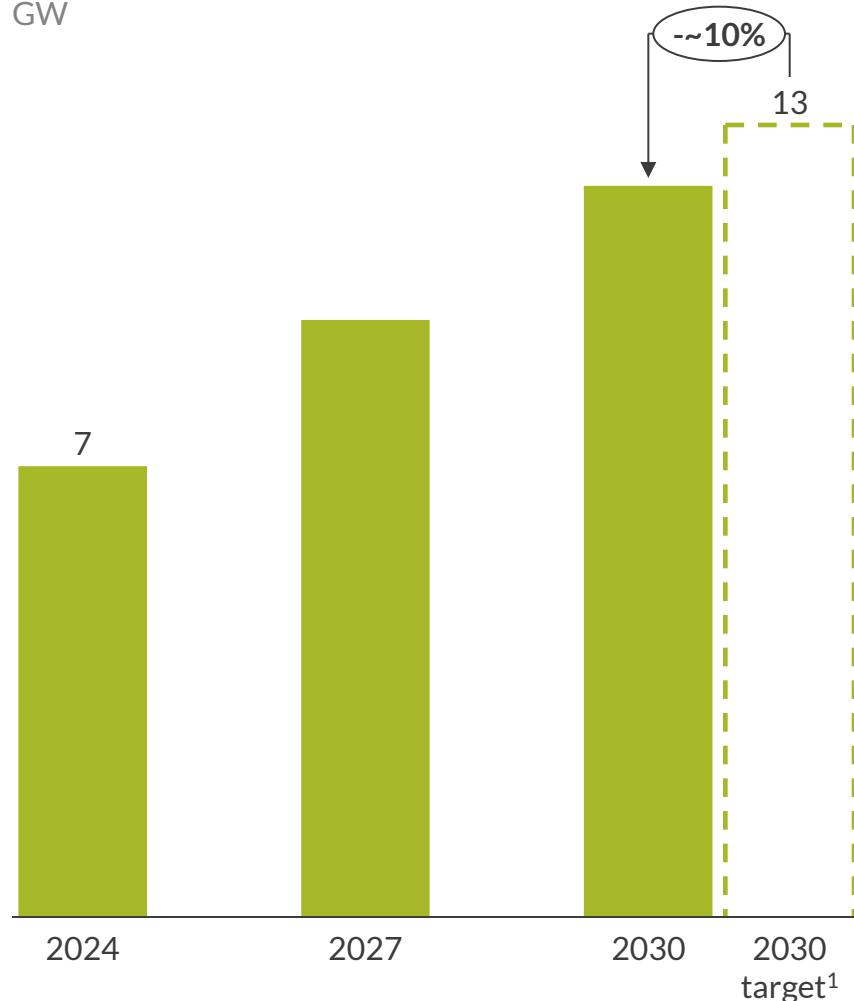
- Increasing carbon prices primarily reflect the EU's high climate ambition, with ETS sectors³ mandated to cut emissions by 62% until 2030 relative to 2005.
- Deep cuts in certificate supply, combined with significant (hedging) demand for certificates from market actors, result in strong upward price pressure.
- These upward drivers clearly overcompensate mitigating effects, such as mandated climate policy measures (e.g. coal exit) or subsidies for carbon abatement options (e.g. renewables buildout).

- »
- **Moderate direct price impacts**, as we project an average share of gas in the Austrian power mix of only 17% between 2024 and 2030.
 - Rising gas and carbon prices will **primarily affect Austria through imports**, as it remains a **net importer of ~4TWh (5% of demand)** until 2030.

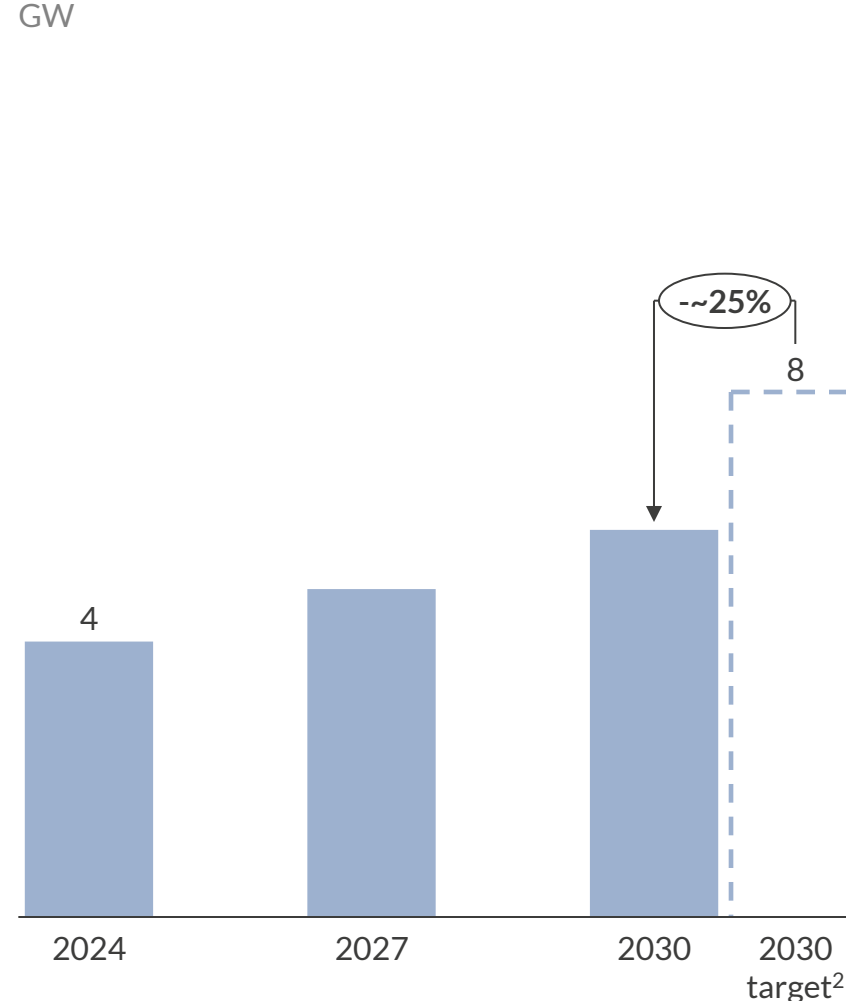
1) Gas price reflecting hub price at CEGH VTP. 2) For years 2024-2028, the prices shown take into account current futures prices for the years in question, with declining weights. In 2024, forecast prices include historical prices. 3) Including energy, industry, aviation and shipping.

While solar and wind capacity continues to grow fast until 2030, we expect buildout targets to be missed, particularly for onshore wind

Installed solar capacity
GW



Installed onshore wind capacity
GW



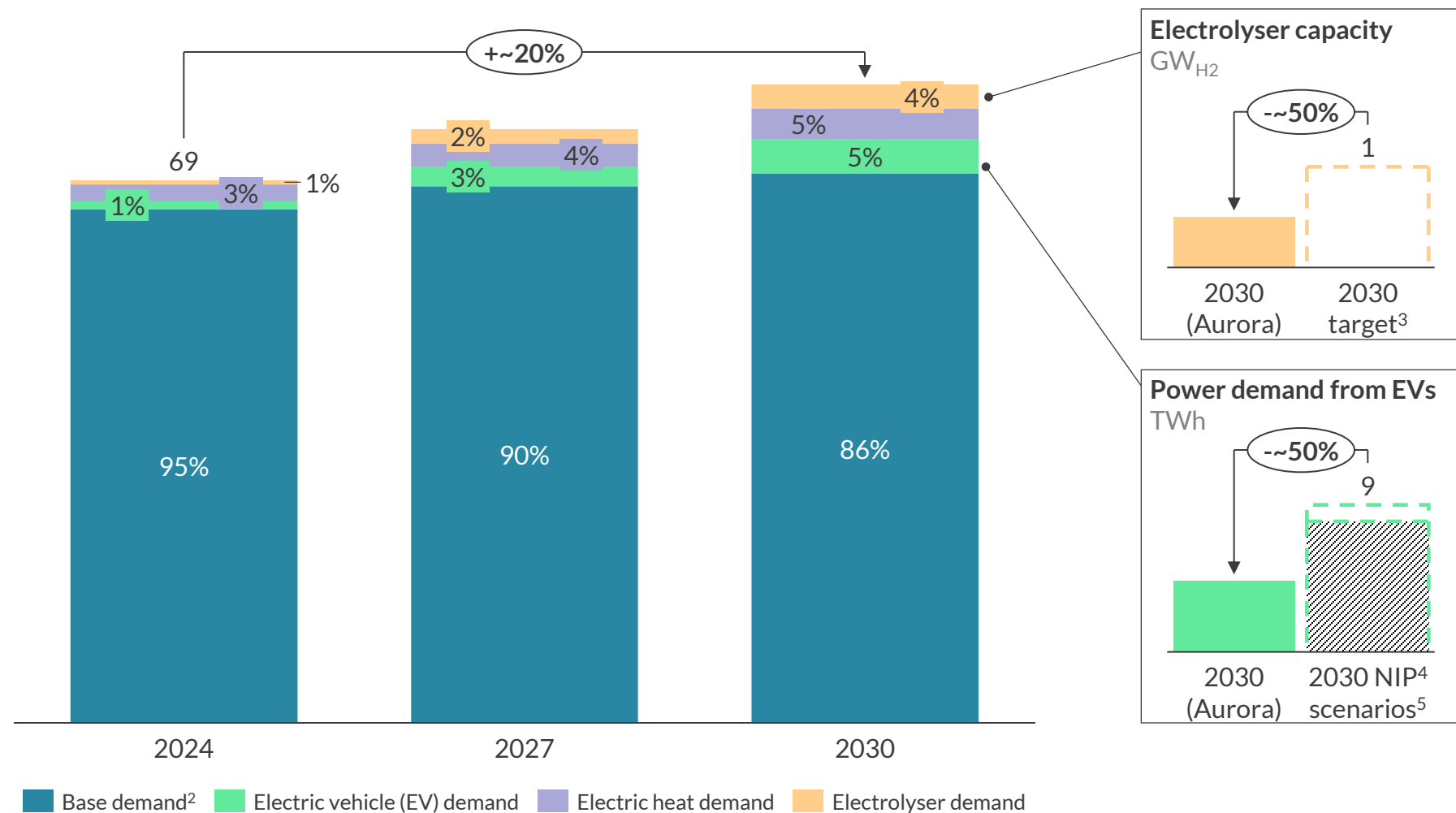
Outlook on renewables capacity

- The strong buildout of renewables towards 2030 is driven by the government providing support through investment grants and a market premium under the EAG. Additionally, the current VAT³ exemption until 2025 for small solar assets⁴ drives rooftop solar PV buildout in the short term.
- However, several key barriers still need to be overcome to ensure EAG targets are reached:
 - **Solar:** grid connection lagging behind; complex bureaucracy with different spatial planning, building and electricity acts in every federal state; shortage of skilled workers.
 - **Onshore wind:** too low buildout ambitions at state level, impeding buildout as states oversee zoning and permitting; shortage of environmental protection workforce causing prolonged planning procedures.

1) The Renewable Energy Expansion Act (EAG) indicates a solar generation target of ~13TWh for 2030. Assuming a load factor of ~11%, the target translates into ~13GW installed capacity. 2) For onshore wind, the EAG indicates a generation target of ~17TWh for 2030. Assuming a load factor of ~23%, the target translates into ~8GW installed capacity. 3) Value Added Tax. 4) ≤35kW.

We expect power demand to increase by ~20% by 2030, mostly driven by transport electrification and the ramp-up of H₂ production

Net annual power demand by type¹ (Aurora Central scenario)
TWh



Outlook on power demand

- Supported by the ambitious national H₂ strategy, we expect ~0.5GW of electrolysers to come online by 2030, whose power demand account for 4% of total demand by 2030.
- Transport electrification is another key driver behind the demand growth, incentivised by the Mobility Masterplan 2030 and the EU ban of newly registered vehicles burning fossil fuels from 2035:
 - By 2030, demand from EVs more than quadruples.
 - In 2030, EV demand accounts for ~5% of total demand.
- Base demand sees a 7% increase until 2030, as rising power demand from economic growth and electrification of industry is partially counterbalanced by efficiency gains.

1) Net power demand includes sectoral demand as well as transmission losses. Power plant self-consumption and demand from efficiency losses of storage are excluded. 2) Sectoral base demand excl. heat pumps, EVs, and electrolysis. 3) According to Austria's national H₂ strategy. 4) *Integrierter österreichischer Netzinfrastukturplan*. 5) Reflecting scenarios "Transition" and "NIP".

This Sunday's federal election presents a key uncertainty for power sector decarbonisation, with key legislative changes postponed to after the election

Electricity Market Act (EIWG)



- Objective: Facilitate renewables (RES) buildout & increase demand flexibility.
- Measure: Electricity Market Act (EIWG) shall replace the EIWOG¹ and increase transparency in grid buildout, facilitate grid access for RES and lower hurdles for energy communities and aggregators.

Renewables Expansion Acceleration Act (EABG)



- Objective: Improve regulatory framework and accelerate RES, storage and H₂ infrastructure buildout.
- Measure: Implementation of a "one-stop-shop" public authority for approval procedures to accelerate RES, storage as well as heat and H₂ infrastructure buildout². Transposition of REPowerEU Directive to implement "Go-To"-areas for RES buildout.

Renewable Gas Act (EGG)



- Objective: Higher renewable gas share in gas mix.
- Measure: Minimum target of 7.5TWh of domestically produced renewable gas, including H₂, biogas and synthetic gas, by 2030.
- Implementation of a mandatory green-gas quota.



✓ Occurred ? Delayed

1) Elektrizitätswirtschafts- und -organisationsgesetz 2010. 2) Plants subject to environmental impact assessments under the Environmental Impact Assessment Act (UVP-G) or Water Rights Act (WRG) shall be exempted.

Key takeaways

- 1** By 2030, Austrian baseload prices are expected to reach almost double the level of the pre-crisis year 2019. **The increase is driven by rising commodity and carbon prices across Europe, while the impacts from renewables buildout and a surge in power demand largely cancel each other out.**
- 2** Despite a widely decarbonised power mix, Austrian power prices are **considerably affected by rising commodity and carbon prices through power imports** from less decarbonised neighbouring countries. Until 2030, Austria remains a net importer of ~4TWh of power (5% of demand).
- 3** **Renewables capacity grows fast** until 2030, but falls short of the ambitious EAG targets by 10% (solar) to 25% (wind). Driven by transport electrification and H₂ production, **demand rises by ~20% by 2030**. For both factors, the outcome of the **federal election presents a key uncertainty** – with the significant **risk of a slow-down in decarbonisation** efforts under a new government.

Details and disclaimer

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lars.jerrentrup@auroraer.com

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