

The German Coalition Agreement's impact on the power sector

Policy Note

November 2021



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New Coalition Agreement: Germany strongly raises its RES ambition, likely to compensate for lower emissions reductions in other sectors until 2030

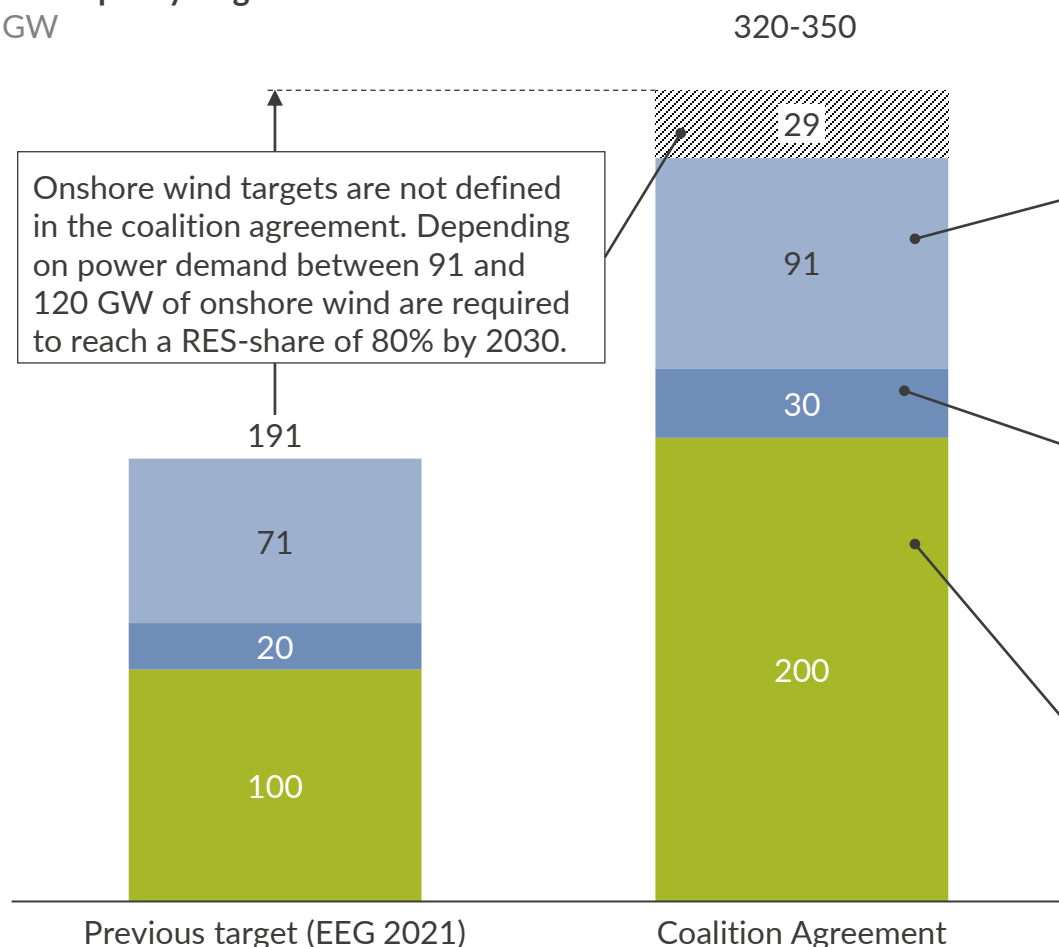
N Deep-dives in later slides (other sections will follow during public webinar on Tuesday 30 November, 2021)

I Renewables Targets + Deep Dive power sector impacts 1 2 3	<ul style="list-style-type: none"> Electricity demand of 680-750 TWh in 2030 expected, with 80% RES share. This should be achieved by: 1) Almost quadrupling solar capacity to 200 GW in 2030, 2) increasing offshore capacity from 20 GW to 30 GW in 2030, 40 GW in 2035, and 70 GW in 2050, 3) dedication of 2% of land surface area for onshore wind deployment
RES administrative reforms and renewables subsidies	<ul style="list-style-type: none"> Removal of bureaucratic barriers by accelerating grid connection and certification processes, and facilitating RES remuneration Planned revision of solar auction capacity limitations² as well as the obligation for large rooftop installations to compete in auctions EEG levy planned to be phased out by 1. Jan 2023. EEG cost should move from rate payers into federal budget The government plans to phase out EEG subsidies with the termination of the German coal exit (likely early 2030ies)
Power Market Design	<ul style="list-style-type: none"> Revision of power market design with no details on future outcome, but investigation into the impacts of technology-neutral capacity and flexibility mechanisms (i.e. capacity remuneration schemes) Financial architecture shall support sector coupling but no details mentioned (i.e. adjustment of grid fees to enable decarbonisation)
Coal and gas	<ul style="list-style-type: none"> Coal exit to be “ideally” completed until 2030, but no fixed mandate. Revision of coal exit scheduled for 2022 instead of 2026 Investments into new gas capacities to support grid reliability if plants can use climate neutral fuels (H2-readiness) No specific natural gas exit, but complete fossil fuel exit by 2045. Constructions encouraged to be built at site of retiring coal plants
II Electricity demand drivers - Hydrogen and electrification in other sectors	<ul style="list-style-type: none"> Electrolyser target raised from 5 GW to 10 GW in 2030. Focus on green H2 after initial technology neutrality to reduce costs H2 imports shall consider climate impacts and ensure competitive environment for German businesses Introduction of Climate Protection Contracts (CCfD) to decarbonise domestic industry (mainly steel and basic materials). Electric vehicle target of minimum 15 million in 2030 and 50% of heat supply planned to be climate neutral by 2030 Strong demand increase driven by increased sector coupling and electrification: higher electrolyser, industry, transport & heat targets
Climate Policy, domestic, EU, International	<ul style="list-style-type: none"> Revision of current climate protection plan in 2022, targets will be monitored through a multi-annual budget system with sector goals. No further details such as stricter emissions targets laid out Stated support for EU ETS 2 (heat and transport) to be merged with ETS 1 in 2030ies, CO2-minimum price of 60€ shall be ensured

1) Nationally determined contributions 2) Albeit no further details are mentioned in the agreement, this likely refers to the current “breathing lid” of PV deployment through a downward adjustment of EEG remunerations based on the development of PV deployment

Wind and solar rise to 320-350 GW in 2030: While solar will be dominant, onshore and offshore also see significant additions

RES capacity targets in 2030
GW



Key measures to support build-out¹

Onshore:

- 2% of land dedicated to onshore development
- Simplified permitting for repowering projects
- Reduced minimum distances & technical solutions for species protection

Offshore:

- Prioritisation of offshore over other use cases
- Promotion of offshore cooperation projects

Solar:

- Rooftop PV obligation for new commercial buildings, and new rules for residential homes
- Renumeration adjustments, support for energy cooperatives and financial benefits for communities, agri- and floating PV, faster administrative processes & grid connections

Power Sector Changes

- RES share is targeted to rise to 80%, translating to 68-83% higher wind and solar capacities compared to EEG 2021
- Large EEG auction volumes can be expected in the next decade. If high RES buildout materialises, assets with merchant exposure will suffer from low capture prices due to high cannibalisation

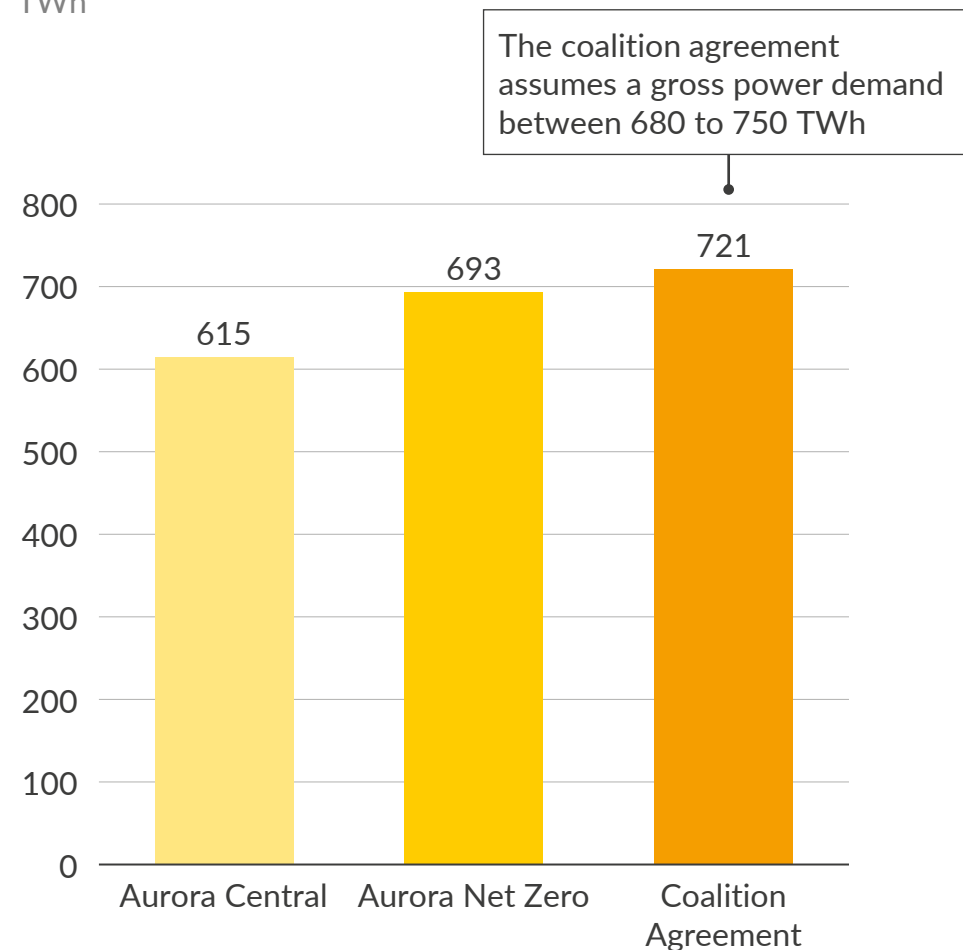
Open Questions

- How will government enforce the 2 % land dedication rule for onshore wind?
- What additional sea areas will be dedicated to offshore wind deployment?
- How can the massive solar buildout be achieved and what policies are planned?

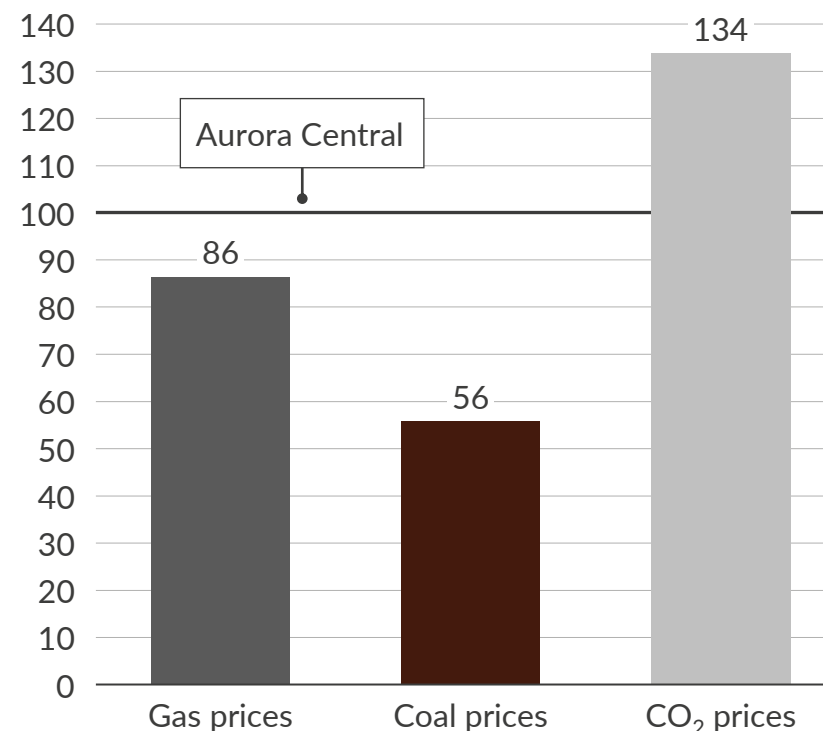
1) Beyond to be determined adjustments to EEG remunerations and auctioned capacities.

Modelling insight: Compared to Central scenario, Net Zero and Coalition Agreement Scenario see higher demand and CO₂-prices

Gross power demand, 2030
TWh



Commodity prices Net Zero & Coalition Agreement
% of Aurora Central

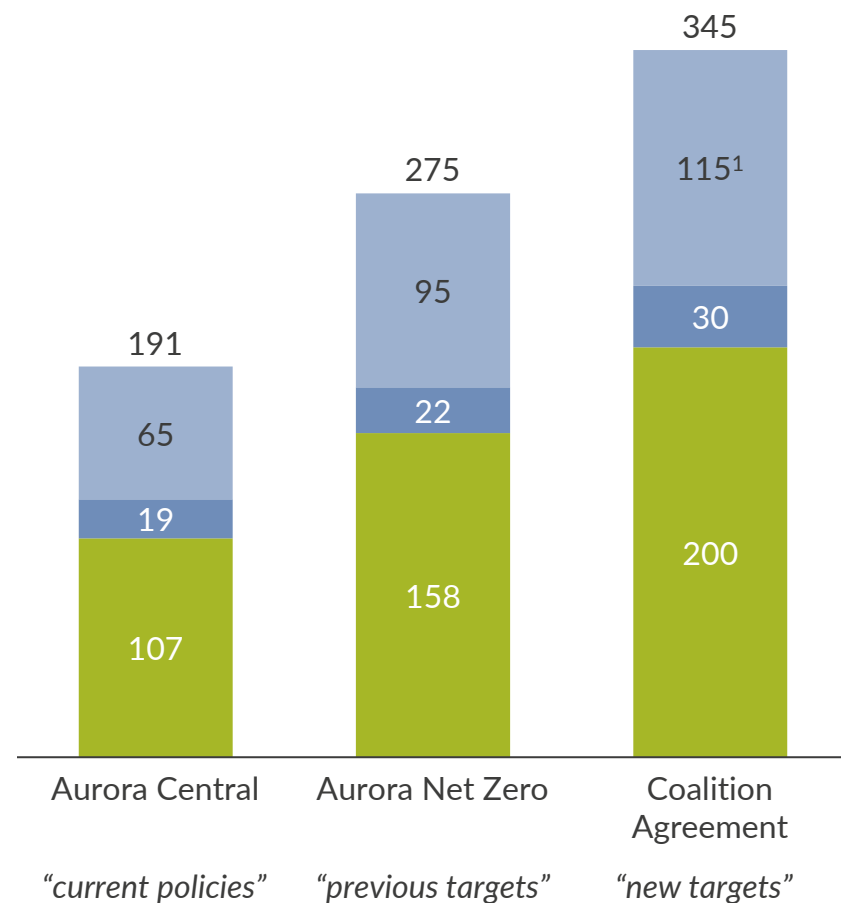


Background on scenarios

- Lowest demand in Aurora Central due to lower decarbonisation efforts of other sectors
- Due to higher number of electric vehicles and electrolyser capacity, power demand in Coalition Agreement scenario is 28 TWh higher than in Net Zero scenario
- Same commodity prices in Net Zero and Coalition Agreement scenario assumed
 - Higher CO₂-prices than in Central scenario
 - Lower gas and coal prices than in Central scenario
- The coalition agreement may also contribute to higher carbon pricing across Europe (e.g. through increasing the likelihood of merging ETS1 and ETS2), which is not reflected here

Modelling insight: With 115 GW onshore wind, new RES target of 80% is achieved in 2030 for a power demand of 720 TWh

RES capacities 2030
GW

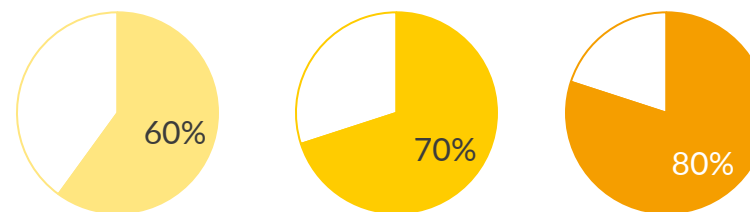


■ Onshore Wind ■ Offshore Wind ■ Solar PV

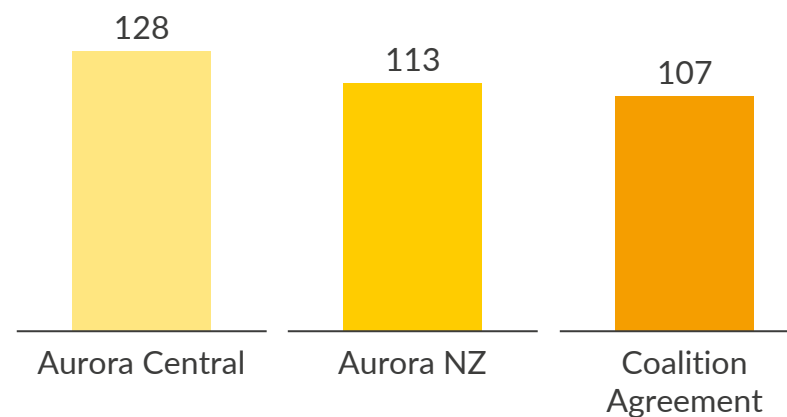
1) An onshore wind target is not defined in the coalition agreement, but 115 GW are required to reach an 80% RES-share with a gross power demand of 720 TWh. 2) Including hydrogen and biomass. 3) Not all emissions in the energy sector under the KSG are covered in the power sector model, while some industry emissions are included.

Sources: Aurora Energy Research, German Coalition Agreement 2021 “Mehr Fortschritt wagen”

RES share 2030²
%



Power sector emissions 2030³
MtCO₂

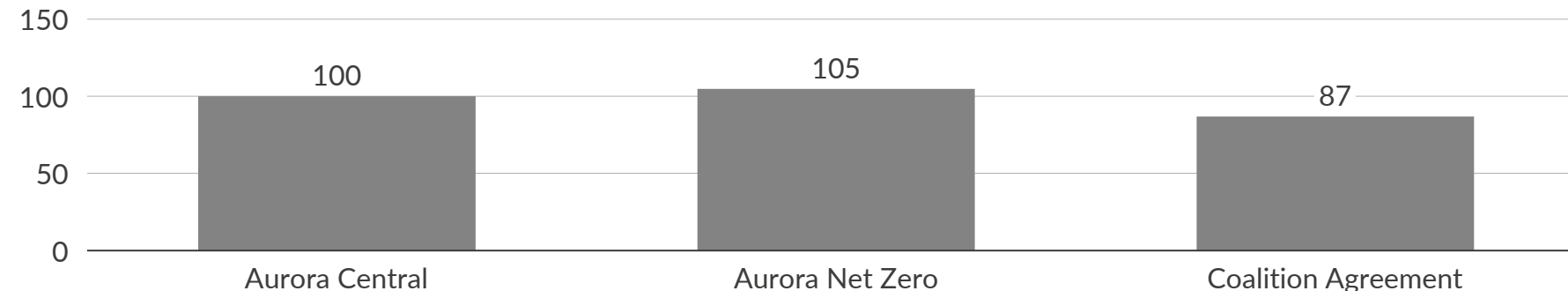


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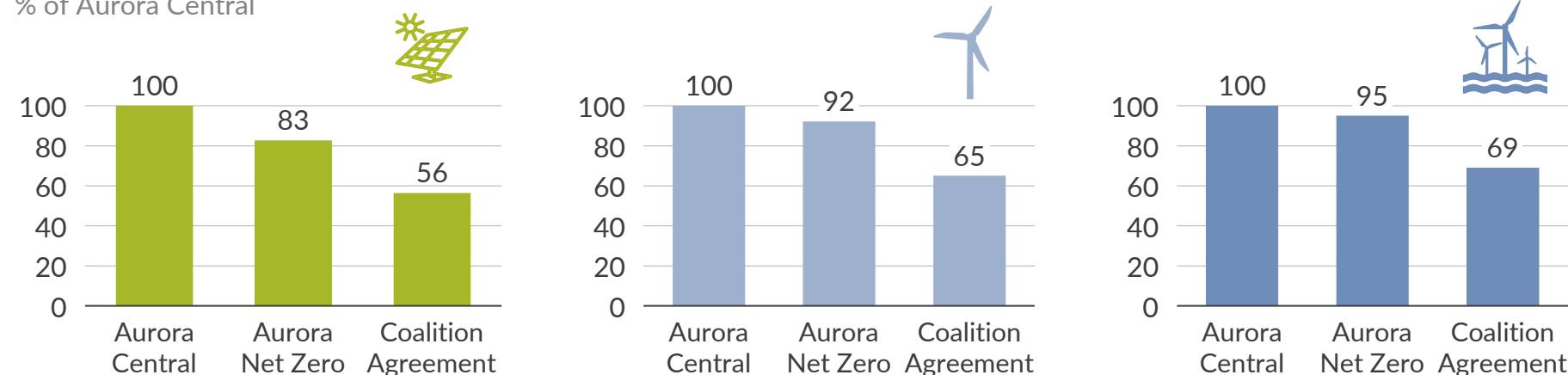
- In Aurora Central, former onshore wind target is missed by 6 GW due to slow approval processes and other hurdles
 - Low build-out of onshore wind and higher demand than anticipated by previous government lead to RES-share of 60%
- Under Coalition Agreement Scenario, power sector emissions in 2030 are 6 Mt CO₂ lower compared to Net Zero, while RES-share is 10% higher
 - Higher expected power demand offsets some of the emissions savings from higher renewables share
- With 115 GW onshore capacity, RES-target of 80% achieved in 2030 in Coalition Agreement scenario

Modelling insight: Under coalition agreement targets, power prices in 2030 would be up to 13% lower than in Aurora Central

Baseload prices 2030
% of Aurora Central



Renewables capture prices 2030
% of Aurora Central

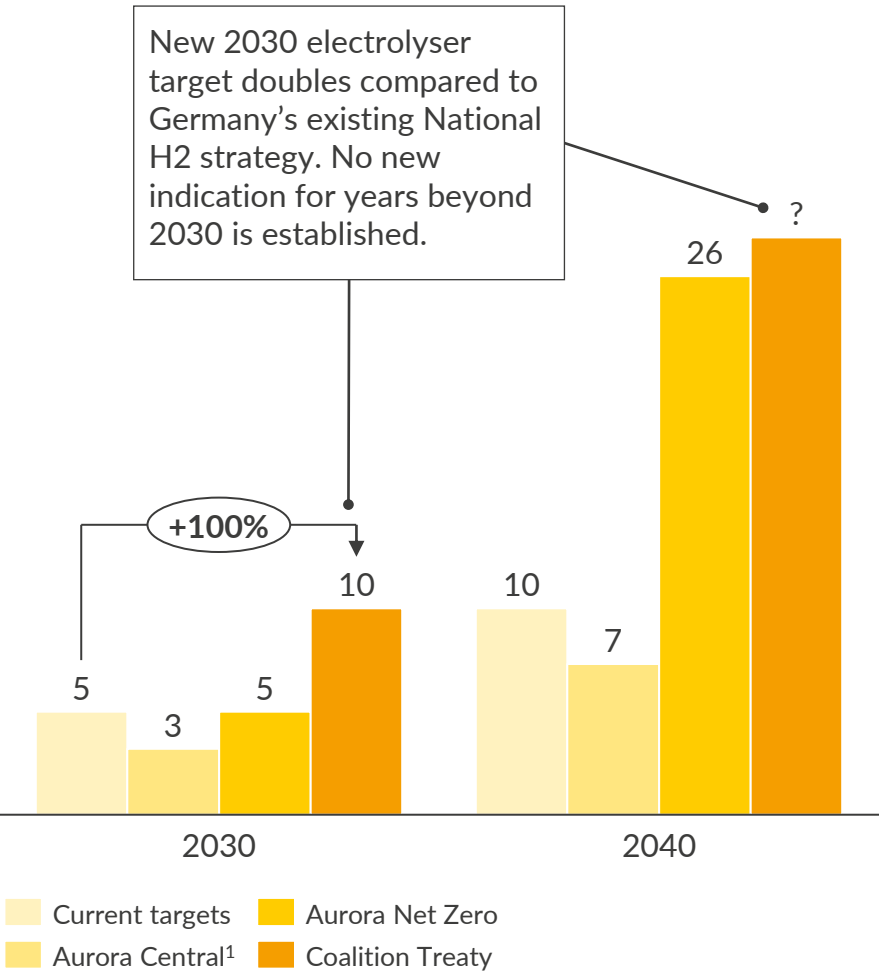


Impact on power market

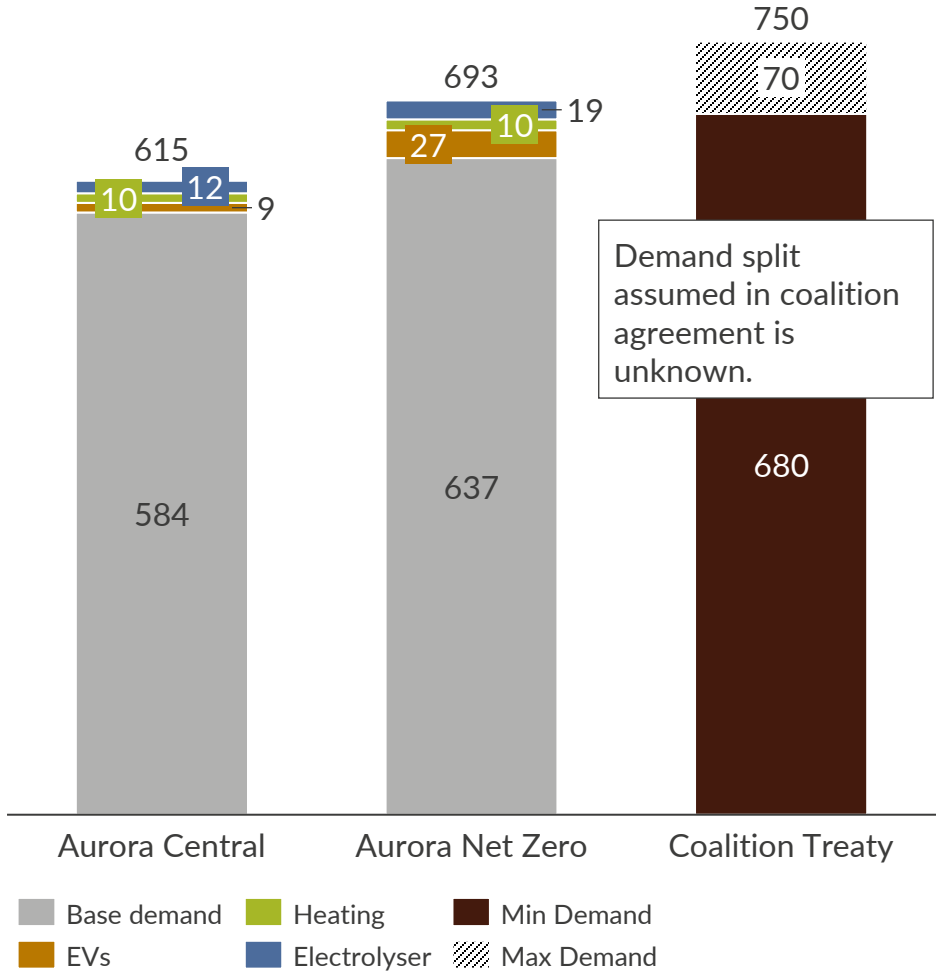
- Baseload prices fall under Coalition Agreement scenario: High RES build-out compensates for price pressure from higher demand and carbon prices
- Renewable capture prices fall up to 44% under the coalition agreement due to significant price cannibalisation
- This assumes no change in carbon prices in the Coalition Agreement scenario, which, as outlined on the previous slide, is conservative and could offset some of the decreases in capture prices

Demand is expected to rise to 680-750 TWh, driven by 10 GW electrolyser capacity, electrification in industry, heat and transport

Comparison of German electrolyser capacity targets
GW



German gross power demand forecast for 2030
TWh



Proposed demand changes

- New electrolyser target for 2030 is 10 GW. National Hydrogen strategy is planned to be revised in 2022. Blue H2 is not mentioned but the phrase 'technology neutral regulation' suggests it might be used until green H2 is cost competitive.
- Gross demand in coalition agreement is assumed to be 680-750 TWh, above Aurora Net Zero of 693 TWh. Key drivers are rising electrification of transport (15 mio EVs), industry (CCfDs²) and heat (>50% climate neutral) until 2030

Open Questions

- What will be the role of blue hydrogen?
- What will the future H2 import strategy look like, beyond "consideration of climate impacts"?
- How can the >50% climate neutral share for heat be reached by 2030?

1) Aurora Central Hydrogen Capacity is based on National Hydrogen Strategy but lower, as it considers a lack of existing financial and infrastructure commitments required to achieve 2030 and 2040 capacity targets 2) Carbon Contracts for Difference also referred to as Climate Protection Contracts in the coalition agreement which shall mainly cover steel and basic materials industries
Sources: National Hydrogen Strategy, Aurora Energy Research, German Coalition Agreement 2021 "Mehr Fortschritt wagen"



Further details will be discussed in our upcoming webinar on Tuesday, 30 November, 10-11am CET.

[Click here to register!](#)

Details and disclaimer

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