

Swiss Power Market: Key Trends and Challenges

New Market Service



Aurora provides market leading forecasts & data-driven intelligence for the global energy transition

A U R  R A

Power markets



Renewables



Storage



Electric vehicles



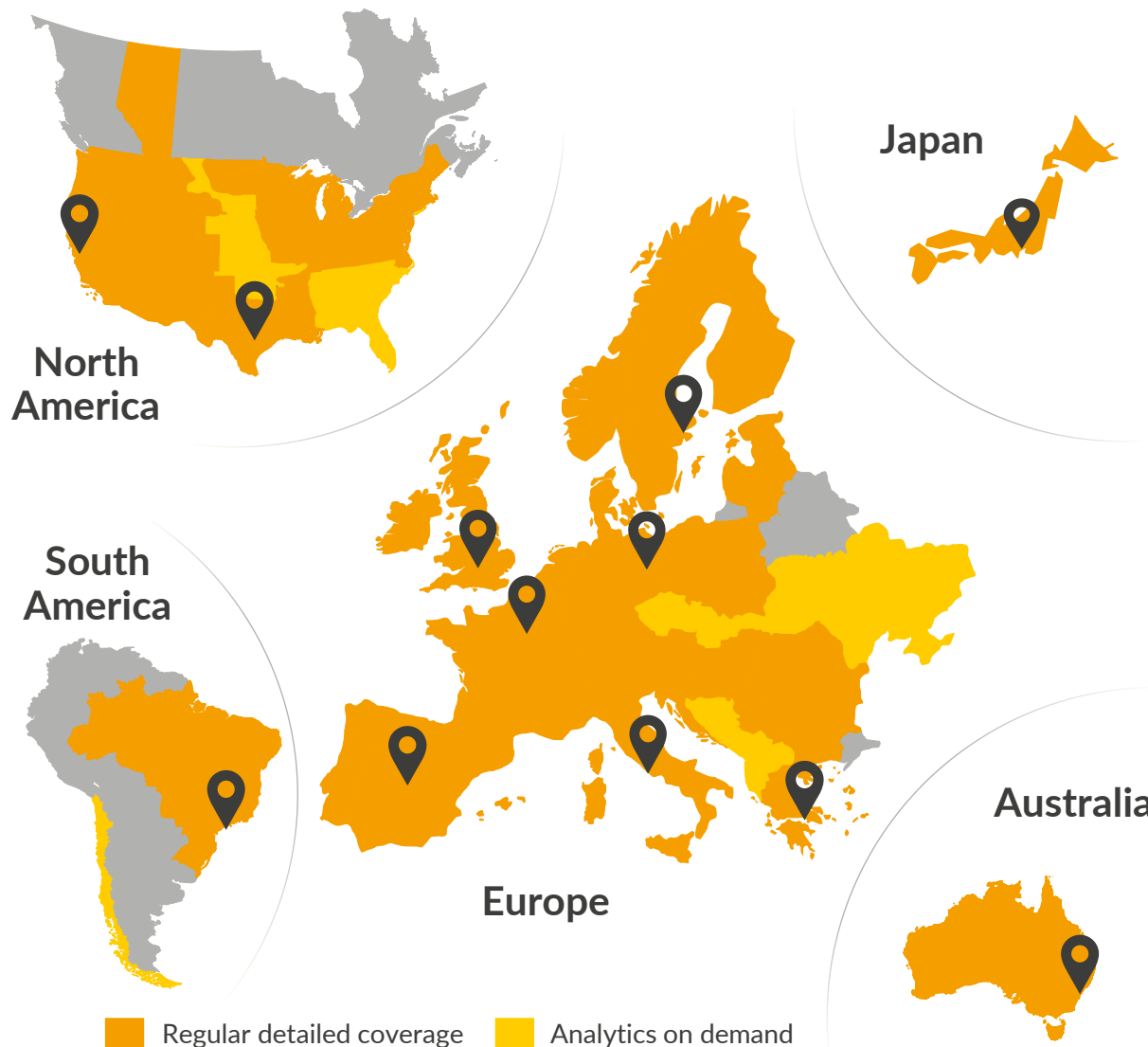
Hydrogen



Carbon



Natural gas



12 Offices

Oxford | Berlin | Madrid | Athens
Paris | Sydney | Austin | Oakland
Rome | Stockholm | Tokyo
São Paulo



500+

market experts



750+

subscribing companies

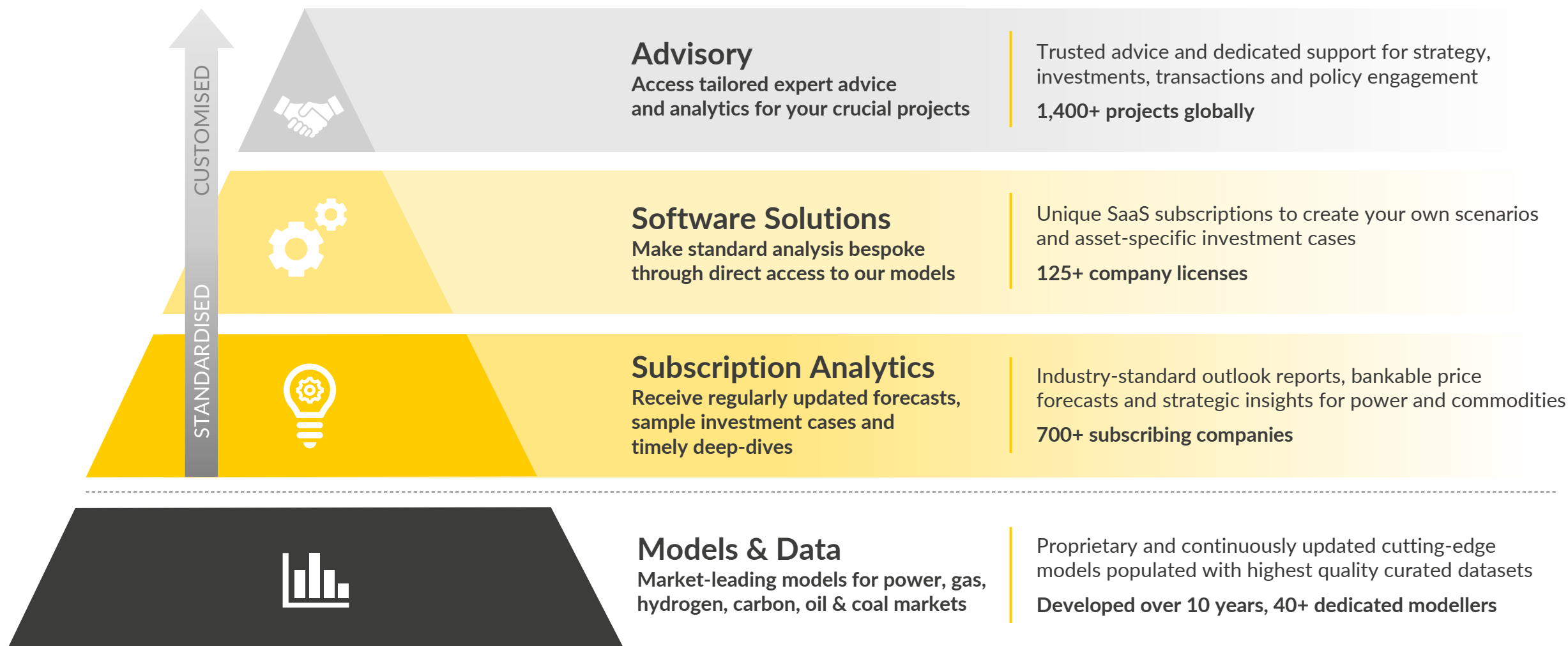


150+

transactions supported in 2022



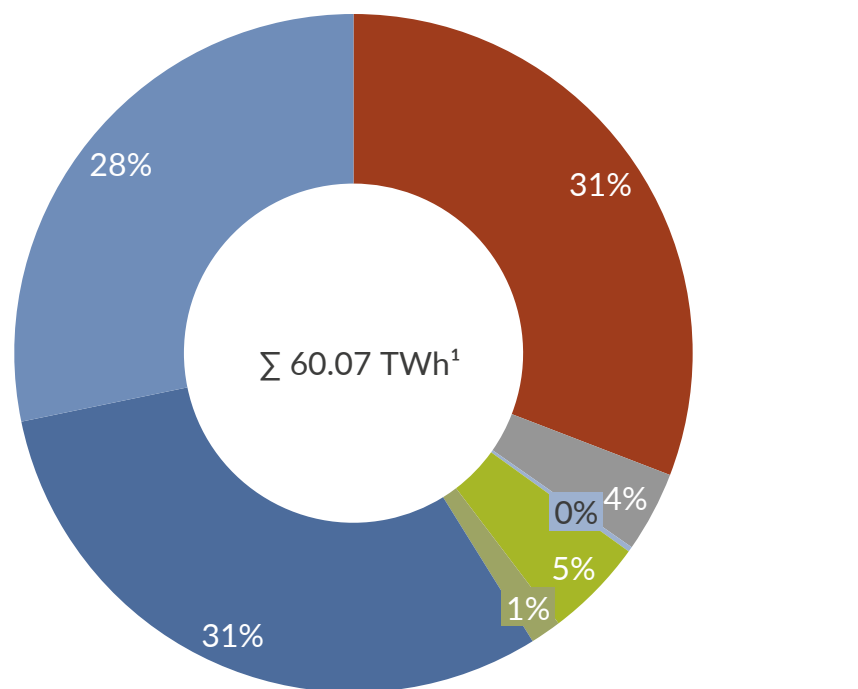
Our market leading models underpin a comprehensive range of seamlessly integrated services to best suit your needs



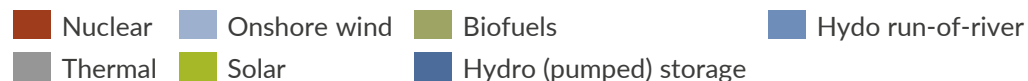
Switzerland's power system is heavily dependent on hydro power, exposing it to seasonal fluctuation in generation and power prices

Swiss power generation mix in 2021

%



- Switzerland's power system is largely decarbonised already:
 - With a 59% share, hydro is the most important generation technology.
 - While solar plays a minor role, nuclear contributed 31% to the power mix.



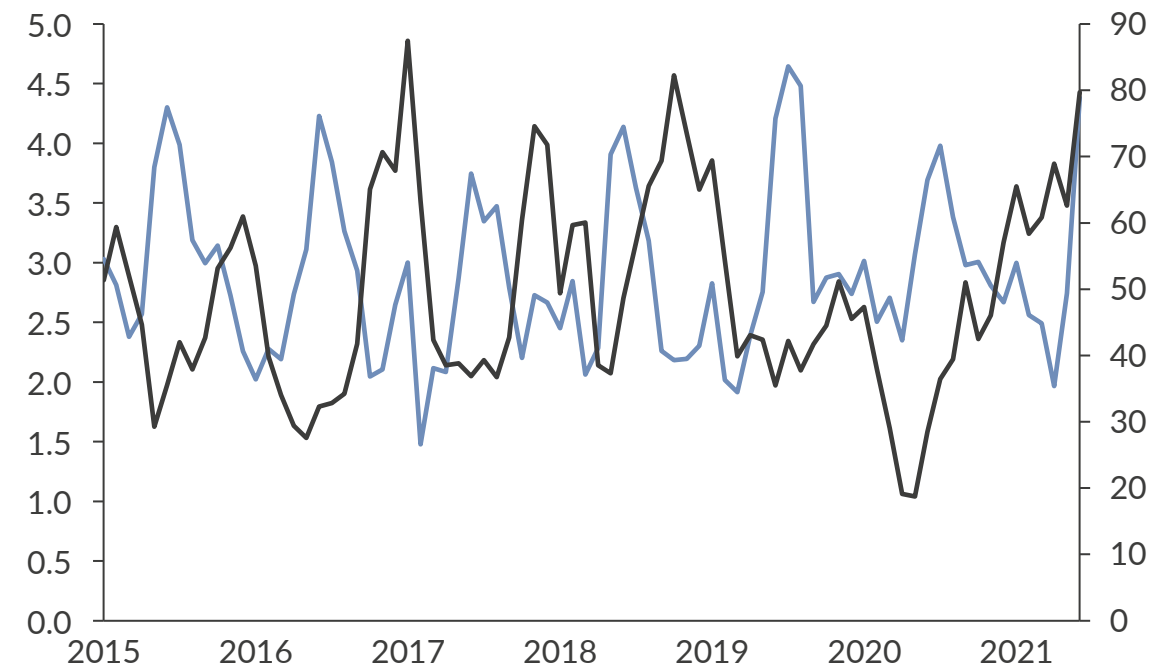
1) Net generation excluding storage pump consumption

Monthly hydro power generation

TWh

Monthly average baseload wholesale price

€/MWh (nominal)



- Strong hydro reliance exposes Switzerland's power system to seasonal volatility:
 - Hydro generation in winter is on average 33% lower than in summer.
 - System tightness induces upward pressure on baseload prices which are on average 48% higher in winter compared to summer.

— Monthly hydro generation — Average monthly baseload price

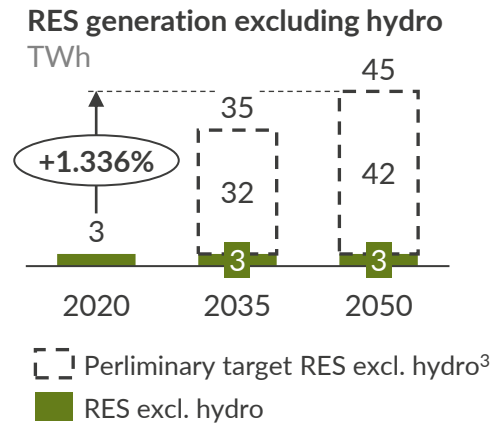
Key challenges for the Swiss power market include decarbonisation, system flexibility, security of supply and sector-coupling

Decarbonisation



How can the 2050 Net Zero target be achieved?

- Excluding hydro, RES¹ generation shall be increased by 42 TWh by 2050², with the largest capacity increase expected for solar PV. What role will subsidies play to achieve this goal?
- What are the prospects for merchant solar buildout?
- How strongly will power prices be affected by renewables buildout?

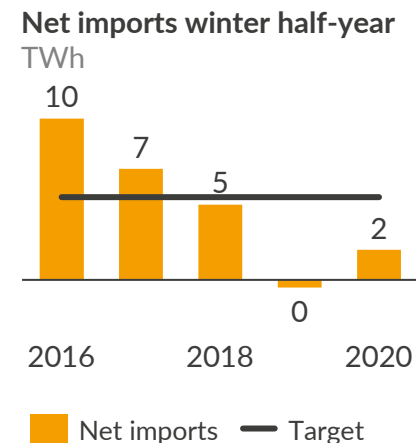


Security of supply



How can a stable power supply be ensured without increasing dependence on imports?

- In 2011, the gradual phase-out of nuclear power was decided. How can this goal be achieved while maintaining a stable supply?
- How can net imports of electricity in the winter half-year be limited to 5 TWh⁴ without nuclear generation?



System flexibility



What measures can be taken to drive the flexibilisation of a power system increasingly relying on intermittent energy sources?

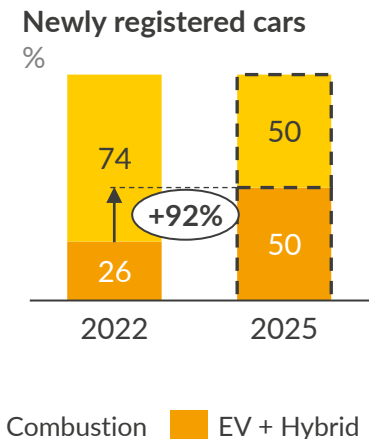
- What challenges and opportunities does hydro-driven power generation pose to system flexibility?
- What role will batteries play to ensure short-term flexibility?
- Could electrolyser buildout play a role in the Swiss power system to provide seasonal flexibility?

Sector-coupling and power demand



To what degree will other sectors be coupled with the power sector, and how will this affect the power market?

- From 2025 onwards, 50% of newly registered vehicles should be (partially) electricity-driven. How will this impact power demand?
- How much power demand will heat pumps add to the system?
- What implications will the Hydrogen Roadmap 2050⁵ have for the power sector?

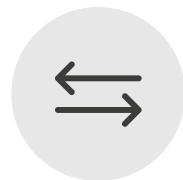
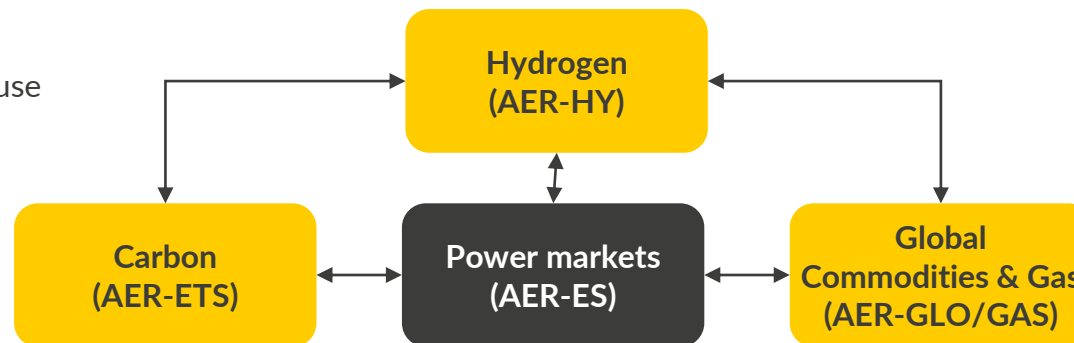


1) RES = Renewable energy sources 2) Targets for 2050: 39.2 TWh Hydro, 45 TWh other RES. 3) Targets set by the Council of States in discussion on the Federal Act on a Secure Electricity Supply with Renewable Energies. 4) Non-binding target proposed by the Council of States in discussion on the Federal Act on a Secure Electricity Supply with Renewable Energies. 5) The Hydrogen-Roadmap 2050 currently being developed by the Bundesamt für Energie

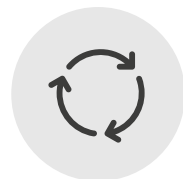
Aurora's unique, proprietary, in-house modelling capabilities allow to assess challenges for the Swiss power market in a holistic manner



Integration of Aurora's four inhouse models



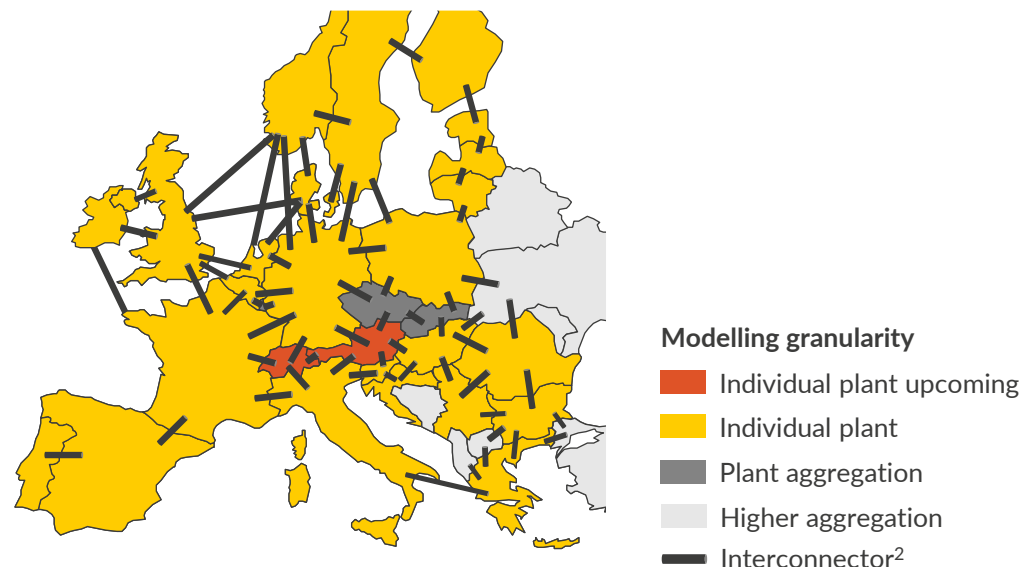
Endogenous interconnector flows based on price differentials



Interdependence of prices and capacities in different regions



High granularity right down to individual plant level



Advantages of Aurora approach

- Aurora have invested heavily in developing our dispatch models since 2013 and believe they are the most sophisticated available
- Our models have been rigorously tested and refined in a wide range of client contexts
- Flexible and nimble because we own the code
- Zero dependence on black-box third-party software (e.g. PLEXOS)
- Ability to model complex policy changes quickly
- Taking into consideration Europe wide developments through cross-border market modelling

1) Gas, coal, oil and carbon prices fundamentally modelled in-house with fully Integrated commodities and gas market model, 2) Sizes and lengths of interconnectors are for visual representation only, Illustrative and are not to scale

Swiss Power & Renewables Forecasts:

Dive into key market analysis and forecasts for the Swiss power and renewables markets

Power & Renewables Forecasts

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- Data under **three scenarios**: Central, Low and High
- **Policy outlook** detailing policy developments and their impacts
- **Capacity development**, generation mix and exports
- **Capture prices** of key technologies (onshore wind, solar)
- Power price distributions
- **EU-ETS carbon price** forecasts
- All forecast data easily downloadable in Excel format and available as **interactive dashboards** on our EOS platform

Strategic Insights



Analyst Support

- **Bi-annual workshops** to discuss specific issues on the Swiss market
- **Ongoing support** from our bank of analysts, including native speakers and on-the-ground experts

Interested in our offering for the Swiss market? Contact **Lucari Jordan, Commercial Associate**, to learn more on how it can help your business.

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