

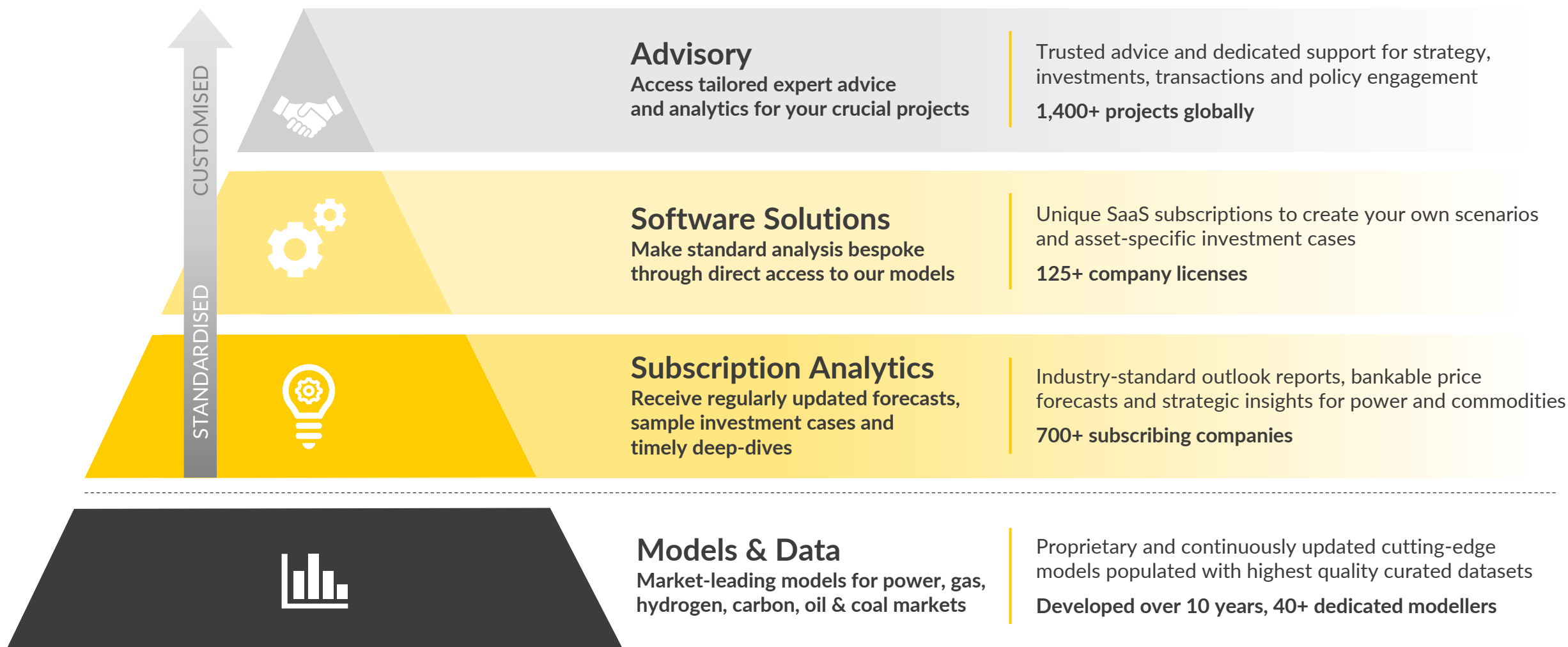
# Swiss Power Market: Key Trends and Challenges

New Market Service  
coming soon





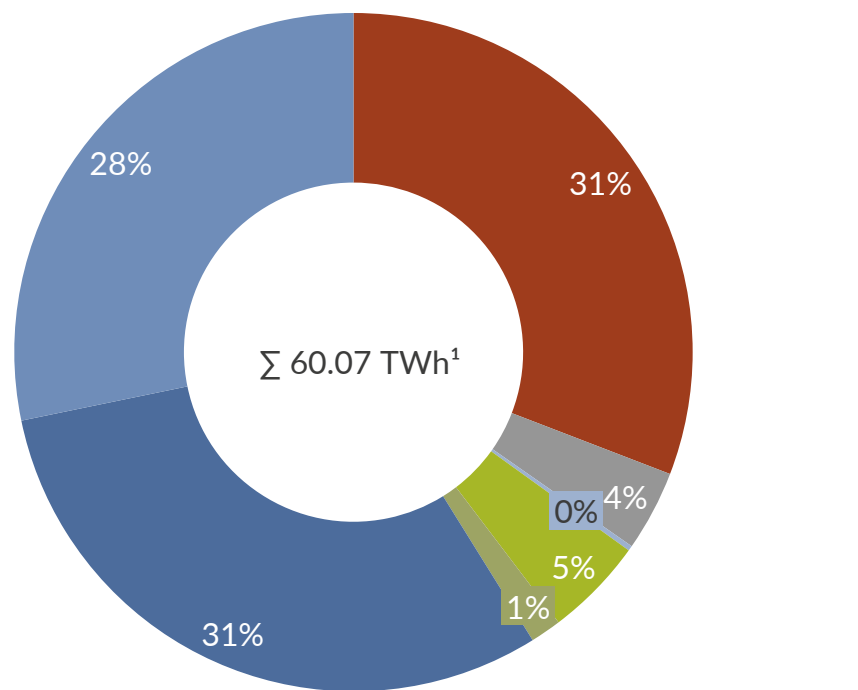
# Our market leading models underpin a comprehensive range of seamlessly integrated services to best suit your needs



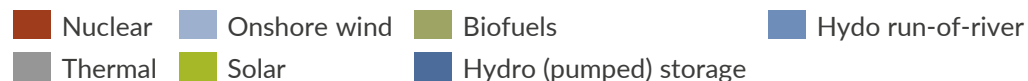
# Switzerland's power system is heavily dependent on hydro power, exposing it to seasonal fluctuation in generation and power prices

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.



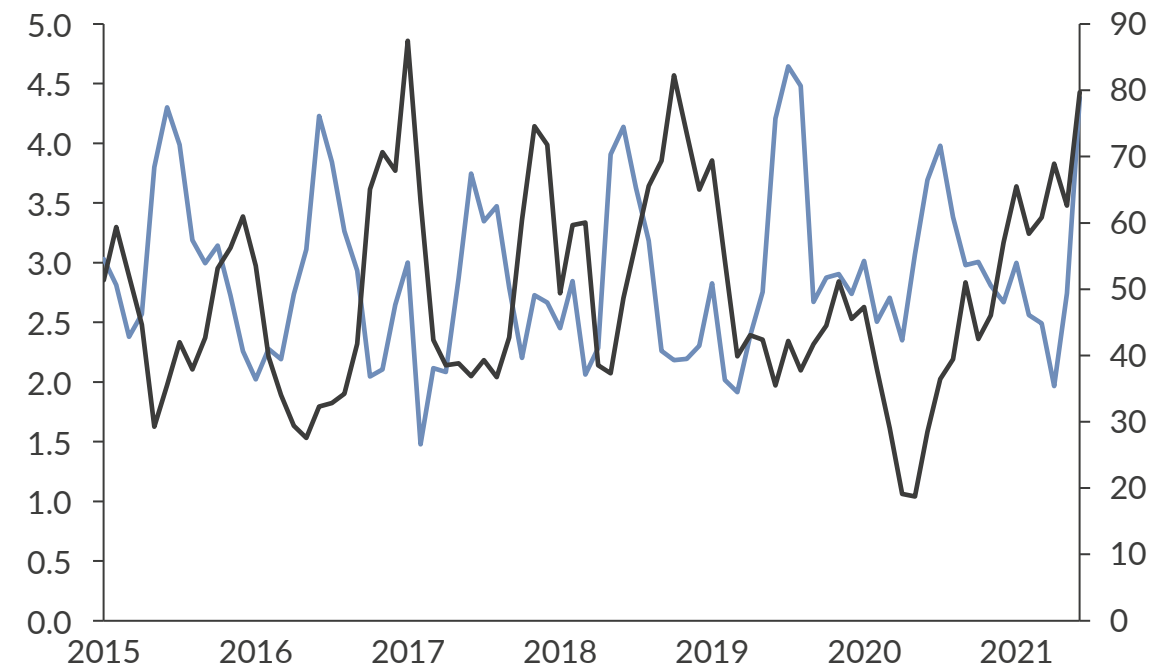
1) Net generation excluding storage pump consumption

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.

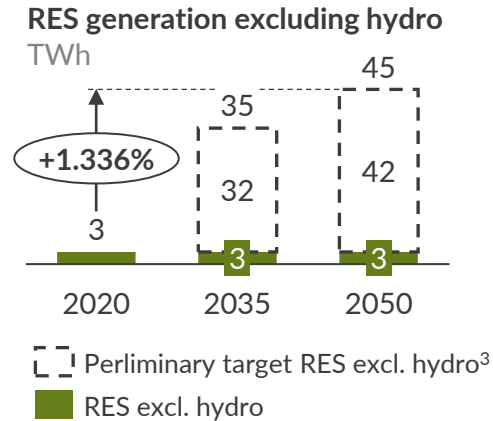
— Monthly hydro generation — Average monthly baseload price

# 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?

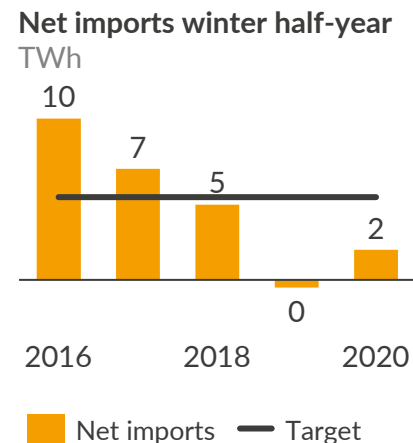
- Excluding hydro, RES<sup>1</sup> generation shall be increased by 42 TWh by 2050<sup>2</sup>, with the largest capacity increase expected for solar PV. What role will subsidies play to achieve this goal?
- What are the prospects for merchant solar buildout?
- How strongly will power prices be affected 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 TWh<sup>4</sup> without nuclear generation?



## System flexibility

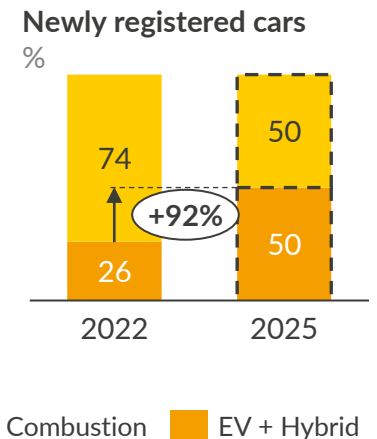
What measures can be taken to drive the flexibilisation of a power system increasingly relying on intermittent energy sources?

- 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 2050<sup>5</sup> have for the power sector?

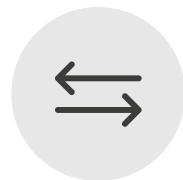
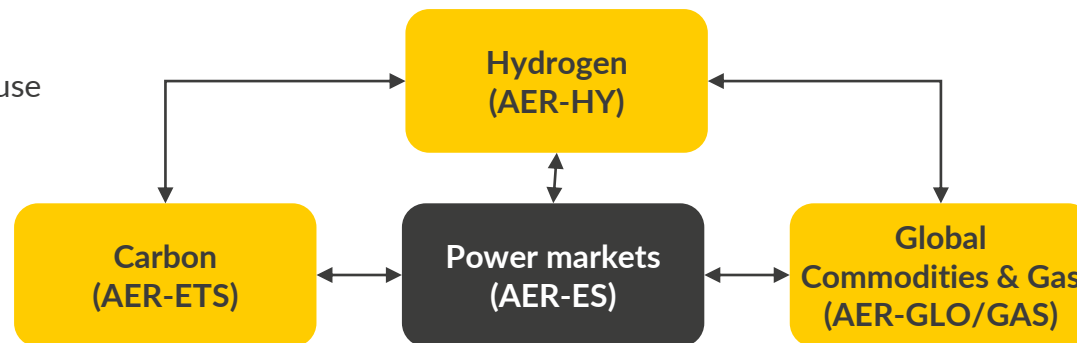


1) RES = Renewable energy sources 2) Targets for 2050: 39.2 TWh Hydro, 45 TWh other RES. 3) Targets set by the Council of States in discussion on the Federal Act on a Secure Electricity Supply with Renewable Energies. 4) Non-binding target proposed by the Council of States in discussion on the Federal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

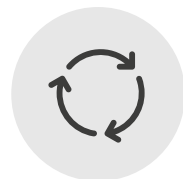
# Aurora's unique, proprietary, in-house modelling capabilities allow to assess challenges for the Swiss power market in a holistic manner



**Integration** of Aurora's four inhouse models



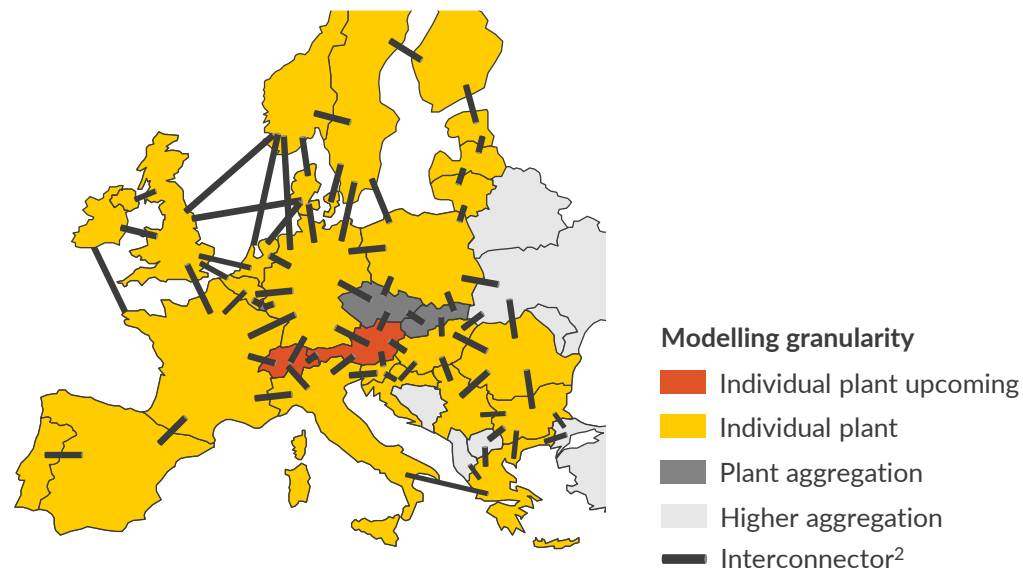
**Endogenous** interconnector flows based on price differentials



**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 Market Forecasts service:

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

### Power & Renewables Market Forecasts Service

#### Forecast Reports & Data



##### Biannual forecast reports with biannual data updates

- Forecast of **wholesale prices** to 2060
- 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 (hydro, 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 Romanian market
- **Ongoing support** from our bank of analysts, including native speakers and on-the-ground experts



##### Strategic Insight Reports



##### Group Meetings



##### Policy Updates

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

✉ [augustin.levassort@auroraer.com](mailto:augustin.levassort@auroraer.com)

AURORA



ENERGY RESEARCH