

Dutch Power Market Service

Market analyses and forecasts for all participants in the Dutch power market

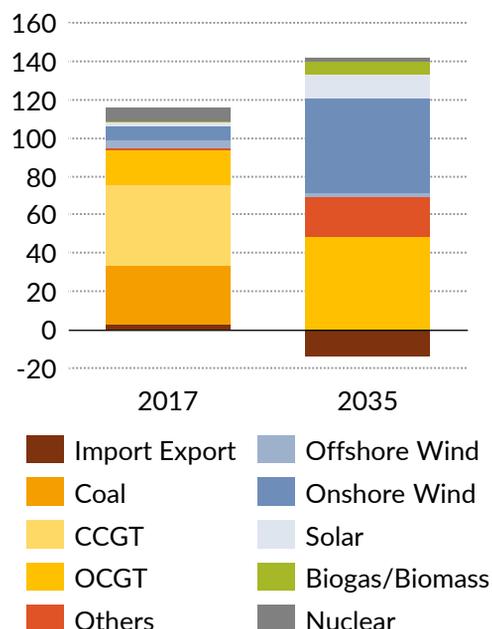
The Dutch power market is changing

The new Climate Act of the 2017 coalition agreement marks the beginning of a change in the Dutch electricity system, in which the generation mix faces a radical realignment. More ambitious emission targets, including the introduction of an **unilateral Dutch carbon price floor**, a **coal-phase out**, **further renewables and interconnector buildouts**, as well as **the electrification of transportation**, will shift value from thermal to renewable assets. This will create opportunities for the last remaining thermal generators, in particular gas.

These reforms inevitably give rise to critical uncertainties – from big picture questions to details:

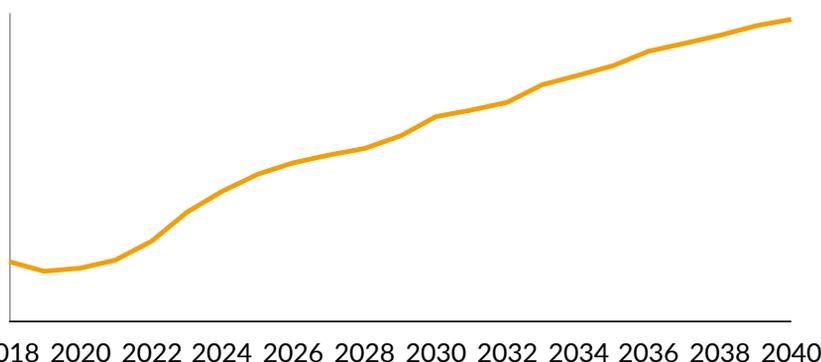
- How likely is a unilateral **carbon price floor** and what would be the impact on the modern **gas fleet**?
- What are potential pathways and policy levers to close one of Europe's most modern **coal fleets**?
- How is the Netherlands impacted by decisions of its **neighbouring countries** i.e. coal and nuclear exit?
- What business models arise around electric vehicles, and will they support or risk security of supply?
- Will the government stick to its high **renewable buildout targets** even if interest rates start rising?
- How and when will **subsidy-free renewables** enter the markets? What are the system implications?
- What is the **flexibility** need of the future system and which balancing markets remain lucrative?

Generation Mix, TWh



Aurora can help you support your investment decisions

Dutch Electricity Baseload Price, EUR (real 2017)/MWh



Aurora provides market and price forecasts that help market participants to:

- Value existing assets
- Evaluate investment opportunities
- Guide divestment decisions

Core Power Market Offering for company-wide access

1 Power Market Forecast Report, published twice a year



- Comprehensive market report that reviews all key issues of the Dutch power market and provides wholesale electricity market projections until 2040
- Consistent forecasts of market prices, price distributions, spark and dark spreads, capacity development, generation mix, capacity margin developments, load factors and interconnector capacities
- Forecasts of capture prices of renewables technologies, auction volume outlook as well as a summary of SDE+ reforms.
- Forecasts of the EU ETS carbon price, in-depth discussion of ETS reforms as well as a comparison of a Dutch unilateral vs regional carbon price floor
- Detailed review of the regulatory framework of new and historic energy acts (*Energieakkoord*), industrial emission directives (*ELV*) and balancing reforms
- Review of balancing markets including prices and participating technologies
- Detailed granular descriptions of underlying assumptions, incorporating unique levels of transparency. Our forecasts include coal and gas

➔ Aurora forecasts are bankable and regarded as industry standard and have been used for major Dutch power transactions, e.g. offshore wind farm *Borssele 3/4* and gas plant *Enecogen*

2 Comprehensive forecast data twice yearly in Excel



- Provision of all annual forecast data of all market results and key assumptions in Excel
- As an add-on, we can provide half-hourly price and revenue stream forecasts

3 Bilateral meetings, calls & analyst support



- Bilateral workshops or calls with senior members and subject experts of the Aurora team to discuss Aurora's analyses and views on the market
- Short-notice support by our analysts on questions arising from our research

4 Invitation to Aurora's annual Spring Forum



- In our by-invitation-only annual Spring Forum in Oxford industry leaders discuss the challenges of the energy industry of tomorrow
- Key note speakers of our 2018 Forum include Magnus Hall (CEO, Vattenfall), Hans Bünting (COO, innogy) and Steven Fries (Chief Economist, Shell)

Renewables add-on



Report plus
all data in Excel

Aurora will provide RES-specific forecasts and analysis to address the needs of developers and investors in wind and solar

- Capture prices for all technologies under various market scenarios, including downside scenarios for debt financing cases
- Capture prices, load factors and profits in P10/P90 weather years, accounting for the negative correlation between load factors and capture prices
- Forecast of imbalance costs for each technology
- Forecast of negative prices and curtailment mechanisms, e.g. six-hour rule
- Investment cases for various subsidy-free business models
- In-depth review of policy and regulatory frameworks and uncertainties relevant to renewables
- Planned to be added: capture price by region, e.g. per province and per offshore cluster

Flexibility and balancing add-on



Report plus
all data in Excel

Aurora's market leading analysis for flexible technologies is adapted and refined for the Dutch market

- Detailed forecasts of outcomes in balancing (FCR, aFRR, mFRR), ancillary markets, and embedded benefits available to flexible technologies
 - Prices
 - Volumes
 - Price shape
- Business/investment case analysis for battery storage, peakers and DSR under the main business models, taking account of revenue-stacking opportunities
- Technology outlook with projections of cost and improvements in performance
- In-depth review of policy and regulatory frameworks and uncertainties relevant to battery storage, peakers and DSR
- Analysis of co-location models of wind/solar + battery storage