



# National Energy Market Forecasts

An accurate and transparent outlook of electricity consumption and prices are critical for key decision makers across private companies, regulators and government. With over 50+ years of independent economic forecasting experience, BIS Oxford Economics is uniquely placed to provide national energy market forecasts that consider all key dimensions of the economic landscape.

## Data-driven insights that can be trusted

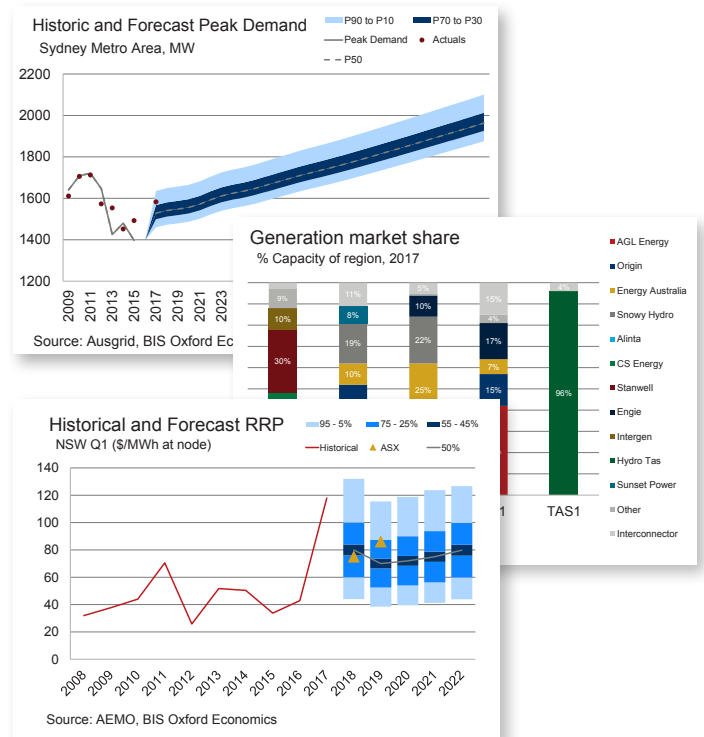
BIS Oxford Economics provides clients with short and long term forecasts of electricity consumption and wholesale electricity prices, leveraging our strength in understanding individual industries and their forecast outlook. We apply detailed econometric analysis to produce our consumption forecast, and advanced machine learning and optimisation techniques to produce our wholesale price forecast.

## Electricity consumption

BIS Oxford Economics electricity consumption forecasts leverage rich and detailed data sets to accurately identify the magnitude and directionality of key shifts in energy and peak demand.

Detailed end-use analysis is applied to forecast energy consumption for each economic sector. We have great confidence in this approach as it allows us to isolate the key drivers of change in electricity consumption which impact demand in different and distinct ways. This provides a more robust representation of the underlying relationships.

We use an econometric model to analyse and forecast peak demand, with seasonal variables capturing the variation.

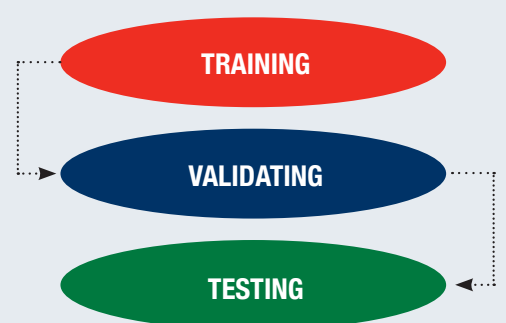


Our electricity consumption model considers all significant drivers of change, including structural changes in electricity consumption behaviour across industrial and commercial sectors, and residential consumption trends, such as energy efficiency, responses to temperature variations, price elasticity, solar PV, battery storage and electric vehicles.

## Validating our models

We follow strict guidelines to ensure the accuracy of our models, including:

- Benchmarking every significant market driver to ensure the model accurately represents each modular component of the underlying market.
- Cross-checking and quality assurance of modelling processes at every stage from model incubation to project delivery.
- Continual improvement, including consistent back-testing of modelling results against historical outcomes.
- Borrowing from world leading data scientists, we apply the training/validating/testing approach which captures underlying trends in the data traditional approaches would miss.





## Electricity prices

The BIS Oxford Economics model combines a high-speed optimisation engine with advanced machine learning practises to provide short and long term forecasts of wholesale prices in the Australian national energy market. By measuring the materiality of macroeconomic and market drivers, our approach focuses the modelling complexity on only the most important variables. This allows us to be uncompromising in modelling accuracy, as well as speed of delivery to clients.

### Key features/benefits:

- **Consistent macroeconomic inputs.** The model leverages the suite of macroeconomic datasets available to BISOE such that major economic drivers can be considered in detail.
- **Short delivery times.** The model is flexible and adaptable, such that changes to assumptions and policy environment can be modelled within a short time frame.
- **Distribution of results.** The model utilises a detailed probability weighted demand forecast such that an accurate distribution of price outcomes can be provided.
- **Transparent modelling methodology.** Forecast results are accompanied with detailed analysis of key model drivers and their impact coefficients.

### Services we offer:

- **Short term forecasting.** Monthly and quarterly resolution electricity price forecasts up to 3 years. Forecasts can be provided based on probabilistic weighted demand to provide a reliable benchmark for trading risk management.
- **Long term forecasting.** Annual electricity price forecasts up to 50 years. Long term wholesale forecasts can inform development projects, asset valuations, regulatory policy, and consumer price forecasts.

## Model capabilities

We have the capability to model significant drivers of short and long term prices outcomes, including:

- Intertemporal supply changes due to generation investment and retirement
- Dynamic policy environment impacted by federal and state governments, and market regulators
- Large vertically integrated generation and retail companies and resulting market structures
- Behaviour of pump hydro and battery storage
- Network constraints impacting generation plant dispatch

## Why you can rely on us

We apply best practice machine learning processes to electricity forecasting. Clients can be assured that our model has found the most accurate representation of the market. Combine this with superior demand forecasting and access to rich macroeconomic data, our forecasts can be relied on to make critical business decisions.

## About BIS Oxford Economics

Founded in 1964, Australia-based BIS Oxford Economics has a strong reputation for independence and quality. BIS Shrapnel was recently acquired by Oxford Economics to form a world leader in global forecasting and quantitative data analysis. With more than 1,200 clients worldwide, we are one of the world's foremost independent global advisory firms, providing reports, forecasts and analytical tools on over 200 countries, 100 industrial sectors, and 4,000 cities and locations. Our clients include leading multinational companies and financial institutions, key government bodies and trade associations, universities, consultancies, and think tanks.

## Contact us

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