# Energy Market Modelling

## National Electricity Market (NEM)

FTI Consulting's energy market model is a dispatch optimisation software based on a detailed representation of market supply and demand fundamentals. Reporting at a half-hour granularity, it helps businessesmake decisions with confidence, supported by detailed quantitative and qualitative analysis.

### WHY FTI CONSULTING?

**Definitive expertise**

Our multidisciplinary team can support you across the entire energy value chain.

**Comprehensive services**

We provide an array of services addressing the strategic, financial, operational, reputational, regulatory and capital needs of our energy clients.

**Industry specialists**

From major international projects in clean energy to new investments in Australia's NEM, we work at the forefront of issues driving commercial and regulatory changes in the industry.

**Global team**

We seamlessly combine our global resources to support our energy clients where they need us most. We have advised on most of the major transmission projects in development across the NEM, locally and globally.

Running on the commercial modelling platform PLEXOS®, FTI Consulting's NEM-Lab covers all jurisdictions across the NEM in Australia, utilising data and assumptions constructed by FTI Consulting and Compass Lexecon Energy.

PLEXOS® accounts for various characteristics, including:

- Power plant characteristics
- Minimum generation levels
- Variable OPEX
- Realistic bidding patterns by generators
- Market-driven basis for the endogenous building of new capacity
- Transmission and interconnectors
- Unit-commitment plant constraints.

### OUR DIFFERENCE

Our energy team uses AEMO's Integrated System Plan (ISP) as a neutral starting point before augmenting inputs and assumptions with our own market intelligence and commercial insights. This ensures our clients receive strong technical, economic, market and commercial advice.

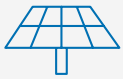
**Figure 1 – Geographic Scope of the Model**

## RENEWABLE GENERATION

FTI Consulting Energy's power market model is specifically designed to model renewable generation:

### Wind

Hourly profiles are derived from our in-house methodology that converts consolidated wind speeds into power output.



### Solar

Hourly profiles are derived from our in-house methodology that converts solar radiation into power output.

### Hydro

Weekly natural inflows are derived from our in-house methodology that converts rainfall, ice-melt and hydrological drainage basin into energy. Generation is derived from a state-of-the-art hydrothermal co-optimisation algorithm embedded at the heart of PLEXOS®.

## CASE STUDIES

### NSW Critical Infrastructure Roadmap

#### Our Role

FTI Consulting was appointed to develop and implement the framework for assessing tender bids in the Long-Term Energy Service Agreements (LTESA) program. The LTESA program is a key aspect of implementing the Electricity Infrastructure Roadmap in NSW, used to underwrite new energy generation and storage in the state.

#### Our Impact

We developed a bespoke valuation model to process significant amounts of data produced during the assessment process. This ensures that project evaluations can be conducted within a brief tender period, whilst accurately representing the long-term interests of NSW consumers.

### Marinus Link Interconnector Assessment

#### Our Role

FTI Consulting assessed the benefits of a proposed 1,500 MW High Voltage Direct Current interconnector between Tasmania and Victoria.

#### Our Impact

We conducted electricity market modelling to assess the impact of building the interconnector on wholesale electricity prices across the NEM. We also analysed the extent of this impact on consumers, the cost of the project and interconnector revenues across the NEM. The assessment was used to make the case in favour of the project and is currently within the scope of the 2022 Integrated System Plan as an actionable project.

**KUMAR PADISETTI**
Senior Managing Director
+61 412 199 065
kumar.padisetti@fticonsulting.com

**SAM FORREST**
Managing Director
+61 410 901 296
sam.forrest@fticonsulting.com

**AMIN MASOUMZADEH**
Senior Director
+61 478 189 513
amin.masoumzadeh@fticonsulting.com

**CHARLIE RYAN**
Consultant
+61 497 268 163
charlie.ryan@fticonsulting.com

*The views expressed herein are those of the author(s) and not necessarily the views of FTI Consulting, Inc., its management, its subsidiaries, its affiliates, or its other professionals. FTI Consulting, Inc., including its subsidiaries and affiliates, is a consulting firm and is not a certified public accounting firm or a law firm.*

FTI Consulting is an independent global business advisory firm dedicated to helping organisations manage change, mitigate risk and resolve disputes: financial, legal, operational, political & regulatory, reputational and transactional. FTI Consulting professionals, located in all major business centres throughout the world, work closely with clients to anticipate, illuminate and overcome complex business challenges and opportunities. © 2025 FTI Consulting, Inc. All rights reserved. **fticonsulting.com**