Our vision

To deliver affordable energy security for all Australians, and meet the changing needs of the market by involving multiple jurisdictions, participants, and communities.

We operate Australia’s National Electricity Market in Australia’s eastern and south-eastern seaboard, and the Wholesale Electricity Market and power system in WA.

We also operate the retail and wholesale gas markets across south-eastern Australia.

In July 2016, AEMO became the independent system operator for WA.

Ownership

40% Market participants

60% Government
Biggest wind farm set for Victoria

Nick Leaughan

German-backed WestWind Energy has submitted plans for a $1.7 billion wind farm in south-west Victoria, making it the largest such facility potentially in the southern hemisphere.

If approved, the massive Golden Plains wind farm of 238 turbines will generate 3,000GWh of power annually enough to power 500,000 homes.

Some 39 landholders around Rokeby, south of Ballarat, can expect to earn at least $3 million in annual income calculated for bonding the turbines.

The Golden Plains project is among the next generation of wind farms in the pipeline as the state government legislates its own state-based renewable energy target.

The state planning authority is now considering four wind farm projects, along with applications to amend three existing permits.

Adding momentum to the sector two years ago, Victoria limited the setbacks around wind farms to one kilometre, reducing the two-kilometre zone within which landholders could previously veto a proposal.

For WestWind, the Victorian initiatives are helpful but they are not core to the project’s business case.

Indeed, for chief executive Tobias Geiger, the Golden Plains project must stand on its own merits, particularly when energy policy is at the mercy of politicians.

“Renewable energy needs to be an adult now in the energy sector,” Mr Geiger told The Australian Financial Review.

“That means the less we rely on any government support schemes, the less the risk is of an adverse impact on the investors long-term from a change in regulations.”

What makes the massive Golden Plains stack up for WestWind, which has developed other Victorian projects, is the rising cost of traditional energy.

In its business case for the project, WestWind did not ascribe a value for the large-scale generation certificates—a form of renewable energy certificate—that the project will generate. “At that moment our cost of energy is closer to half the market price, because the market price has finally gone to levels that are actually reflective of the true cost of generation at a mix of generation,” Mr Geiger said.

Until more recently, wholesale energy prices were relatively subdued, as costs reflected old, fully-written-off, coal-fired power stations without taking into account the cost of their replacement, he said.

“Now that some of them get mothballed because they are just too old to keep them running commercially viable, the market price has bounced up,” he said. “It is now at levels where investment in new generation capacity actually makes sense again.”

Even so, Mr Geiger is keeping a watching brief on the energy debate, as uncertainty lingers over the future of the Finkel Review’s clean energy targets, and debate rumbles on over extending the life of coal-fired plants such as AGL Energy’s Liddell plant.

“What we are more afraid of is government doing really stupid things by popping up old coal-fired power stations for them to operate longer,” he said.

“That may dilute the market price to a point where investment for the private sector becomes unattractive.

“That would then leave potentially stranded assets, but more importantly would actually lock Australia out from the energy transition for a bit longer.”
The changing generation mix

- Wind: 1172.25
- Hydro: 7558
- Coal: 27864
- Gas: 7235
- Liquid fuel: 616
- Solar: 70
- Utility: 0

Two-way power grid evolution

Huge growth in customers providing energy back to the grid.

By 2050 customer-owned generators will supply 30-45% Australia’s electricity needs

Source: CSIRO
The rise of renewable generation

Small wind units
- 43 → 412
  - Near 10x increase

Large scale wind
- 4035 MW → 10,678 MW
  - More than doubled
  - (2016 - 2020)

Small solar PV units
- 14,064 → 1,691,840
  - Over 100x increase

Large scale solar
- 233 MW → 11,043 MW
  - Over 47x increase
  - (2016 - 2020)
This is a global trend

With an installed photovoltaic capacity of 5,440 megawatts by the end of 2016, Australia ranks among the world's top solar countries.
California as a case study

- Renewable energy makes up 41% of California’s energy generation capacity, with 48% of that provided by solar energy.

- It is projected that 50% of California’s load will be served by renewable generation by 2030.

- The state is working towards 12,000MW of distributed generation by 2030.

- The state is working towards having 1.5 million electric vehicles on Californian roads by 2025.
Australia’s changing load profile

South Australia daily demand for grid electricity

Average Annual SA1 Operational Demand as Generated (MW)
Managing intermittency in the grid

SA on 19 September 2017 (drop in wind replaced with GPG)
Managing a transforming system

- Regulatory Markets
- Investment
- Systems and standards
Maintaining essential services

Moving forward

- Finkel Report
- Implementing the NEG
- Setting the path forward