
AUSTRALIAN INSTITUTE OF ENERGY

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THE FUTURE OF THE AUSTRALIAN ENERGY MARKET POSSIBLE SCENARIOS

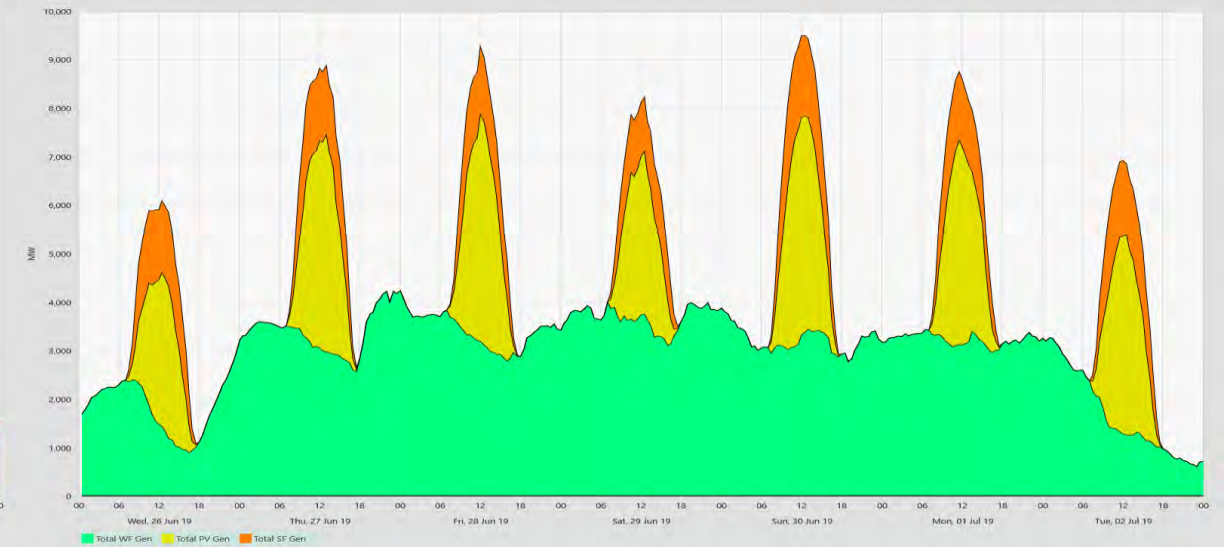
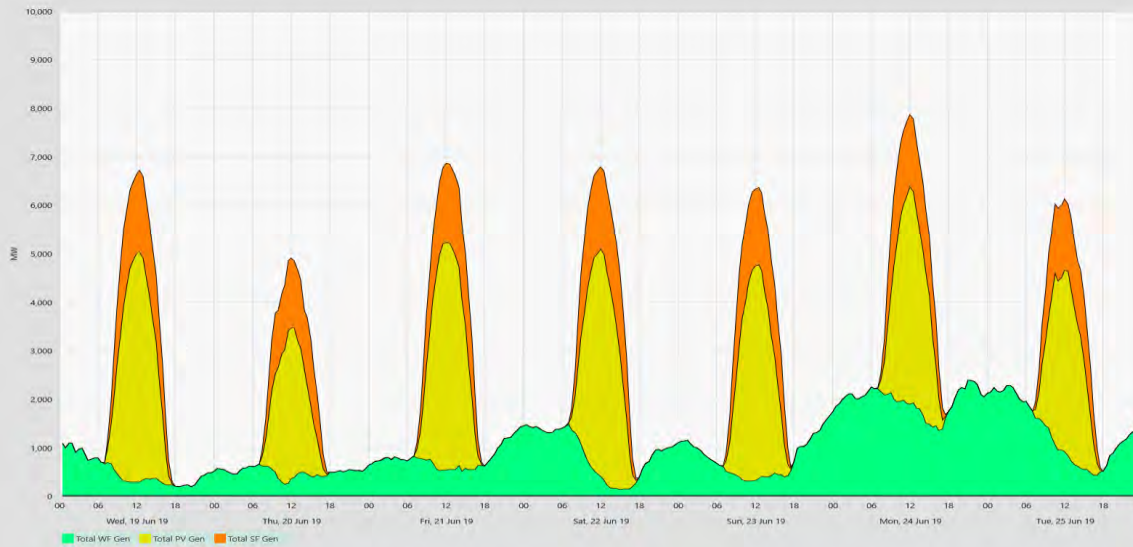
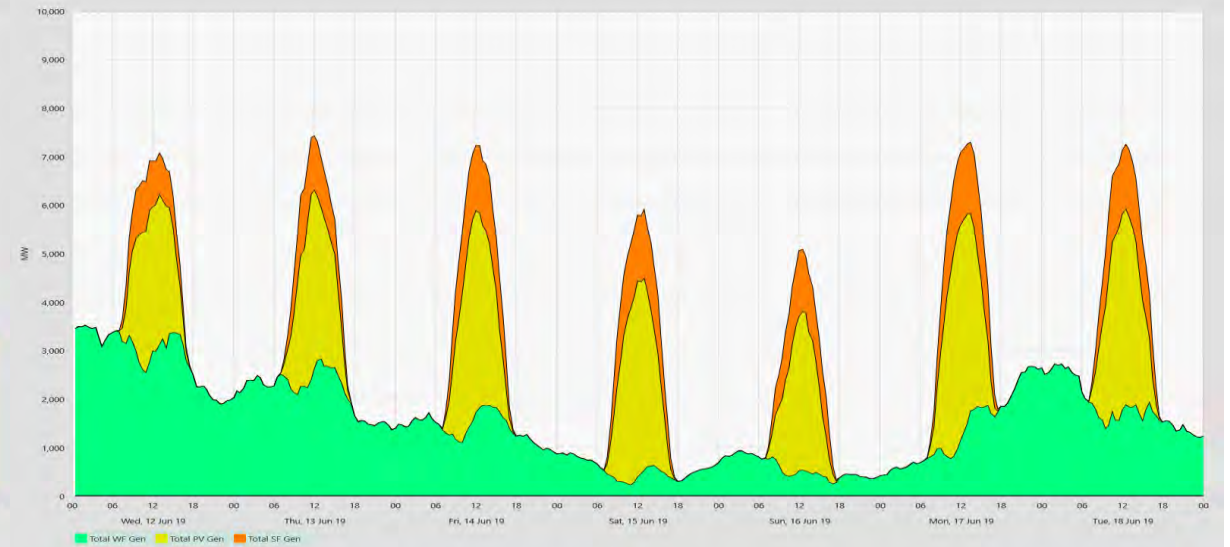
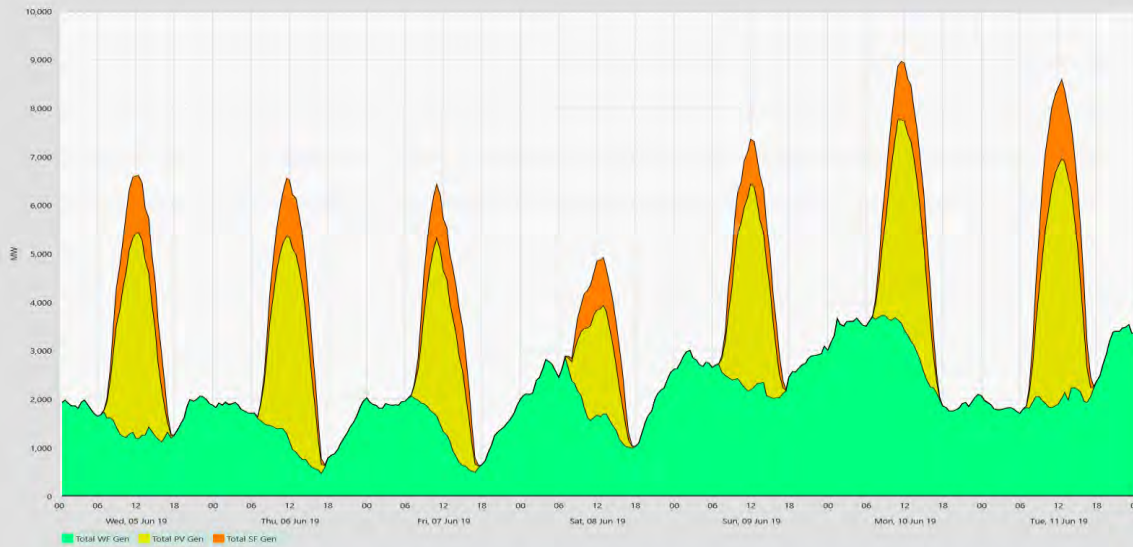
Hugh Bannister, CEO



SCOPE OF PRESENTATION

- Focus is Electricity over next 10 years
 - Passing reference to gas
- Physical Outcomes
- Key Decision Points
- Are Our Market Institutions up for the Challenge?

THE CHALLENGE OF RENEWABLE ENERGY: NEM-WIDE PLOTS



WHAT THIS MEANS FOR THE EVOLUTION OF NEM PLANT MIX

- Batteries and renewables together cannot ever support the system over extended low wind or low insolation periods though lack of energy
 - We must expect gas turbines and gas combined cycled to be significant in the mix to maintain reliability, despite high fuel cost (but low capacity factor)
 - LNG terminals adjacent to major loads seem to make sense for this duty cycle
- Renewables in the NEM are approaching a natural limit (capacity factor of the technology) where spillage (and lower prices) will occur much more frequently
 - At system wide level, not just when caused by network limits
 - Lowering cost of storage technology can and will extend this, but
 - At times, insufficient practical (low cost) storage could constrain renewable installation
 - Giving a window of opportunity for coal plant life extension or even new coal plant

KEY DECISION POINTS

- Emission Pricing
 - Do nothing OR: Price emissions and apply proceed to reducing distribution network charges
 - Quid pro quo is that there would be no more federal or state subsidies for renewables
- CoGATI
 - A belated but good move which still might flounder on the process and implementation detail
- Decentralised and market-oriented V. centralised and mandated
 - Frequency control – review recent history
 - Wholesale demand response – review process and current outcome
- Ensuring appropriate investment
 - Difficult to see how we can get off the government teat for new investment
 - If support must be offered, it should be pro-competition

OUR NEM INSTITUTIONS

- COAG - COAG Energy Council
- ESB - Energy Security Board
- AEMC – Australian Energy Market Commission
- AER – Australian Energy Regulator
- AEMO – Australian Energy Market Operator
- CEFC – Clean Energy Finance Corporation
- ARENA – Australian Renewable Energy Agency
- State Energy Departments

HOW ARE OUR INSTITUTIONS PERFORMING?

■ AEMO

- Frequency control example: AEMO seemed slow to recognise problem and slow to react appropriately
- Little evolution/improvement of NEMDE (Dispatch Engine)
- Does AEMO's joint responsibility for electricity and gas dilute its management focus?

■ AEMC

- Processes are slow and seem to favour slow, lumbering incumbents
- AEMC seems beholden to AEMO on market issues with a technical component
- No capacity to promote research into issues well in advance of need – ARENA remit is limited

■ ESB

- Not clear what its role is; appears as a mechanism for AEMO to bypass AEMC
- Despite protestations of co-operation, the relationship between the AEMC work program and the ESB Post 2025 Market Design Project is opaque.
- The process around the Post 2025 Market Design project is itself opaque, but apparently AEMO dominated

SCORECARD : HOW WELL IS THE NEM FACING THE FUTURE?

- My assessment: Could and should do a LOT better!
- Some Areas of Focus
 - Fix the emissions pricing/distribution pricing problem
 - Resolve rule changes in favour of market-based solutions
 - Promote new entry and competition in rule changes by refusing to be limited by incumbent inertia
 - Bring ESB's 2025 market design project under the AEMC umbrella where it belongs and resource it with dynamic leadership and a suitable range of skills
 - Give the AEMC a capability to initiate market research projects well in advance, perhaps by extending the remit of ARENA to include market-based (not necessarily renewable) research and allowing AEMC to initiate projects, subject to COAG or ESB approval