Chart 1: SA has a different generation mix

- **Chart Description**: This chart illustrates the generation mix in different states: QLD, NSW, SA, Victoria, and Tasmania. The generation sources include:
  - Biomass ($119/MWh)
  - Water
  - Wind ($99/MWh)
  - Solar (Fixed $149/MWh, Tracking $183/MWh)
  - Gas Other
  - OCGT ($205/MWh)
  - CCGT ($82/MWh)
  - Coal (Black $72/MWh, Brown $91/MWh)

- **Source**: Australian Energy Market Operator
Chart 2: SA has peakier demand

This figure represents the percentage of the time that demand is at or above a given level.

In 2014/15 maximum demand was 2872MW and minimum demand 790MW.
Chart 3: Solar PV behind the meter is a driver

Fig 1. 2011-12 summer 90% POE minimum demand load profile for South Australia

Fig 2. 2014-15 Summer 90% POE minimum demand load profile for South Australia

Fig 3. 2024-25 summer 90% POE minimum demand load profile for South Australia

Source: Australian Energy Market Operator
Chart 4: The system is becoming more difficult to manage

Rate of Change of Frequency is determined by the contingency size at separation, and the inertia of the SA Power System.

AEMO continues to manage the security of the system effectively but there is a trend decline in inertia.

Source: Australian Energy Market Operator
Chart 5: SA market is concentrated & vertically integrated

The interconnector is important

GDF Suez is not making its full capacity available to the market at this time.

AGL Energy and Origin Energy have the most capacity available but also use this capacity to manage their large electricity retail positions.

Inter-regional management of a position is difficult because the risk management product over the interconnector is not firm.
Retailers can enter into financial contracts with generators or other parties to manage the risk of unanticipated wholesale prices.

Over-the-counter markets, comprise direct contracting between counterparties, often assisted by a broker.

The exchange traded market, comprises electricity futures products traded on the Australian Securities Exchange.

In 2014-15 SA accounted for:
2% of traded volumes of futures on the ASX
4% of traded volumes of over-the-counter contracts

Source: Australian Energy Regulator
Chart 7: The NEM market structure is daunting

Source: Australian Energy Regulator
Residue = 460 * ($100-$50) = $23,000

Each quarter’s revenue auctioned in 12 tranches of 700 one MW instruments

Recent Vic→SA auctions selling at very high price - Indicative of major separation of the two markets

Source: Australian Energy Market Operator
Chart 9: NEM processes are unhelpfully complex

COAG Energy Council
Comprising State and Federal Energy and Resource Ministers

- Energy Consumers Australia (ECA)
  - Consumer advocacy
- Australian Energy Regulator (AER)
  - Economic regulation and Rule enforcement
- Australian Energy Market Commission (AEMC)
  - Rule changes and market development
- Australian Energy Market Operator (AEMO)
  - Market and system operation