Exploring opportunities for Australian renewable energy

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6 February 2018
The state of play

- 2017 a significant year for clean energy investment
- Reflections
- Federal Government support
- Scarce PPAs
- State Government support
- Projects without government support
- Corporate PPA market

State based support includes

<table>
<thead>
<tr>
<th>Policies for Renewable generation capacity</th>
<th>Policies for Market / technology development</th>
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<tbody>
<tr>
<td>Victorian Renewable Energy Auction Scheme (VREAS) (650MW)</td>
<td>SA Renewable Technology Fund (inc. Neoen/Tesla battery)</td>
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<tr>
<td>Queensland ‘Renewables 400’ reverse auction (400MW)</td>
<td>VIC Energy Storage Initiative (100MWh)</td>
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<tr>
<td>South Australia new renewable generation procurement</td>
<td>NT battery tender (45MW)</td>
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Where does Federal support fit in?

- ARENA and RET paved the way for commercialisation of wind and solar
- Success of RET in stimulating investment (once target achieved bipartisan support)
- CEFC continues to invest and bridge the commercial funding gap

**National Energy Guarantee (NEG)**

- **Reliability guarantee (from 2019)**
  - ‘...to ensure energy is always available’

- **Emissions guarantee (from 2020)**
  - ‘...to contribute to Australia’s international obligations’

- Not a certificate-based regime
- Favours existing coal and gas generation?
- Thresholds for guarantees will drive retailer behaviour
- Interaction of State incentives with RET
**Battery opportunities**

**Government supported batteries**
- South Australia - Hornsdale Power Reserve (100MW) (Neoen / Tesla)
- Victoria - Energy Storage Initiative (100MWh) (tender)
- Northern Territory – Territory Generation (45MW) (EOI)
- Different drivers

**Battery uses**
- Storage / time-shift
- Reliability
- Security
- Arbitrage
- Standby / backup power

**Commerciality without Government support?**
- Debt financing challenge with uncertain future markets
- What is the real value / opportunity?

*Source: Australian Council of Learned Academies (ACOLA)*
## Other opportunities

<table>
<thead>
<tr>
<th>Other storage</th>
<th>Energy security</th>
<th>Transport</th>
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<tbody>
<tr>
<td>• Mechanical (e.g. pumped hydro / compressed air / flywheel)</td>
<td>• Defence or natural disasters</td>
<td>Opportunities:</td>
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<tr>
<td>• Thermal (e.g. molten salt)</td>
<td>• Supply chain vulnerability, net importer of petrol</td>
<td>• Integrate with utility sector: Grow overall demand, load shift, bundling demand</td>
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<tr>
<td>• Chemical (e.g. biomass / hydrogen / power-to-gas)</td>
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<td>• Integrate with mining sector (lithium and others)</td>
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### Challenges:
- Regulatory uncertainty
- Potential for competing/overlapping government standards
- Lack of financial incentives (e.g. free parking, FBT, removing luxury vehicle tax, stamp duty)
- Lack of fuel emissions standards
- Changes to car ownership (shared mobility, autonomous)
Emergence of corporate PPAs

What is a renewable corporate Power Purchase Agreement (PPA)?
- Financial hedge or contract for difference (CFD) allowing a Corporate to procure electricity from a renewable generator
- Underpins project development with long term contract
- Project size can vary as corporate opts for a full or partial offtakes, or even form consortiums to aggregate loads

Behind the meter
Generator and Corporate are connected 'behind the meter', usually co-located, without connection to the NEM.

Synthetic / sleeved
Corporate receives energy from a retailer, but enters a contract for difference with the generator.

- Strong appetite from corporates driven by rising prices, sustainability targets
- Alternative long term contract to 'scarce' PPAs. Relies on corporate’s balance sheet rather than retailer’s.
- First contracts and procurement models just reaching the market (e.g. Telstra, universities, buyer groups)

Immediate challenges:
- Understanding price risks – including forward wholesale price curves and price drivers
- Understanding and managing volume risk
- Negotiating acceptable risk allocation for project, corporate(s), and retailers No one size fits all (multiple ‘precedents’)
  ...Not easy
- May be opportunities for governments to assist develop this market...
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