

RE PENETRATION POLICY OPTIONS

THOMAS LONGDEN

CRAWFORD SCHOOL OF PUBLIC POLICY

ANU INSTITUTE FOR CLIMATE, ENERGY &
DISASTER SOLUTIONS



Australian
National
University

Policy options

Many policies can be brought into play to meet a RET:

Feed-in tariffs

Public grants and investments

Removal of fossil fuel subsidies

Renewable portfolio standard

Carbon price

Facilitating phase-out of fossil fuels

Reverse auctions

Regulations

Renewable energy zone planning

Alleviating cost barriers

Policies to facilitate energy storage

Tax credits and breaks

Plus others



Public grants



Australian Government
Australian Renewable
Energy Agency

ARENA

Example grant:
Wind energy for
telecommunication sites



[Read more](#)

ARENA invests in projects to accelerate Australia's shift to affordable reliable renewable energy

Funds projects that drive innovation & commercialisation of renewable energy technologies

Priorities:

- Integrating renewables into the electricity system
- Accelerating hydrogen
- Supporting industry to reduce emissions

<https://arena.gov.au>



Public investments



Example investment:
Virtual power plant,
South Australia



[Read more](#)

CEFC invests in clean energy technologies, projects and businesses to accelerate Australia's transition to a low emissions economy

Leverages investment commitments to attract additional investment from the private sector

<https://www.cefc.com.au>



Power purchase agreement (PPA)



Image: <https://www.pxfuel.com/en/search?q=resource>

An electricity supply agreement between two parties, with an agreed price

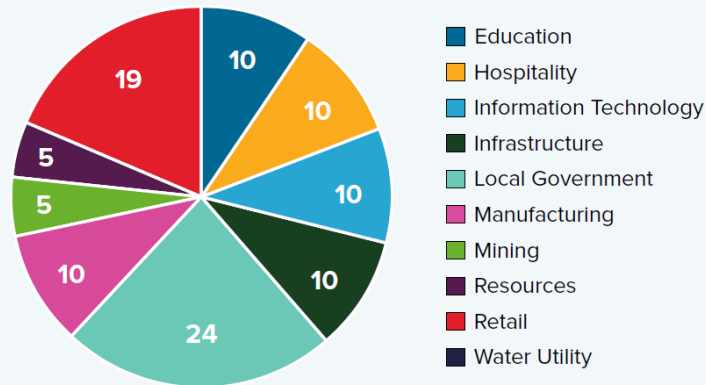
Typically extends for ~20 years

A key mechanism for public procurement of new renewables projects in many countries

In Australia, various entities have been signing PPAs for renewables

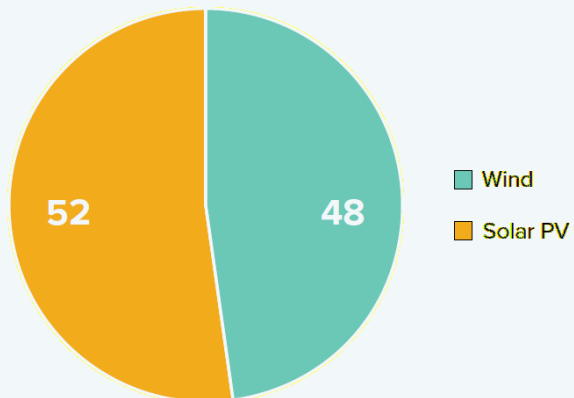
Helps project developers access low-cost finance

Figure 10: Number of Corporate PPAs by sector (%)



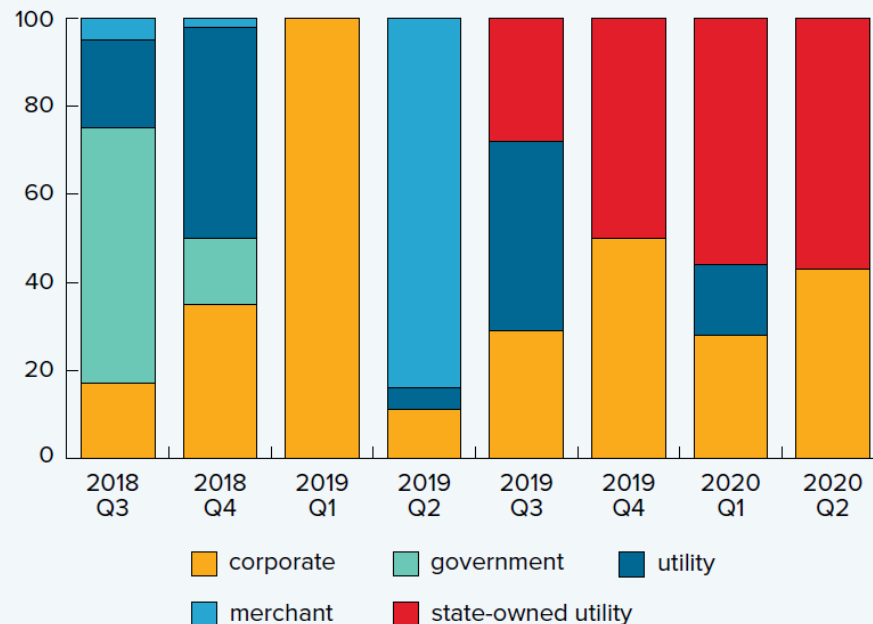
Source: PPA Database 2019-20, BRC-A.

Figure 11: Corporate PPAs, Solar and Wind Farms, 2019-20 (MW, %)



Source: PPA Database 2019-20, BRC-A.

Figure 4: PPA Market Segments, 2018-20



Source: PPA Database 2019-20, BRC-A.

<https://climate-kic.org.au/wp-content/uploads/2020/11/2020-State-of-the-market.pdf>



Reverse auctions

A reverse auction involves bidders making offers to **supply** a good/service

The lowest offers are accepted

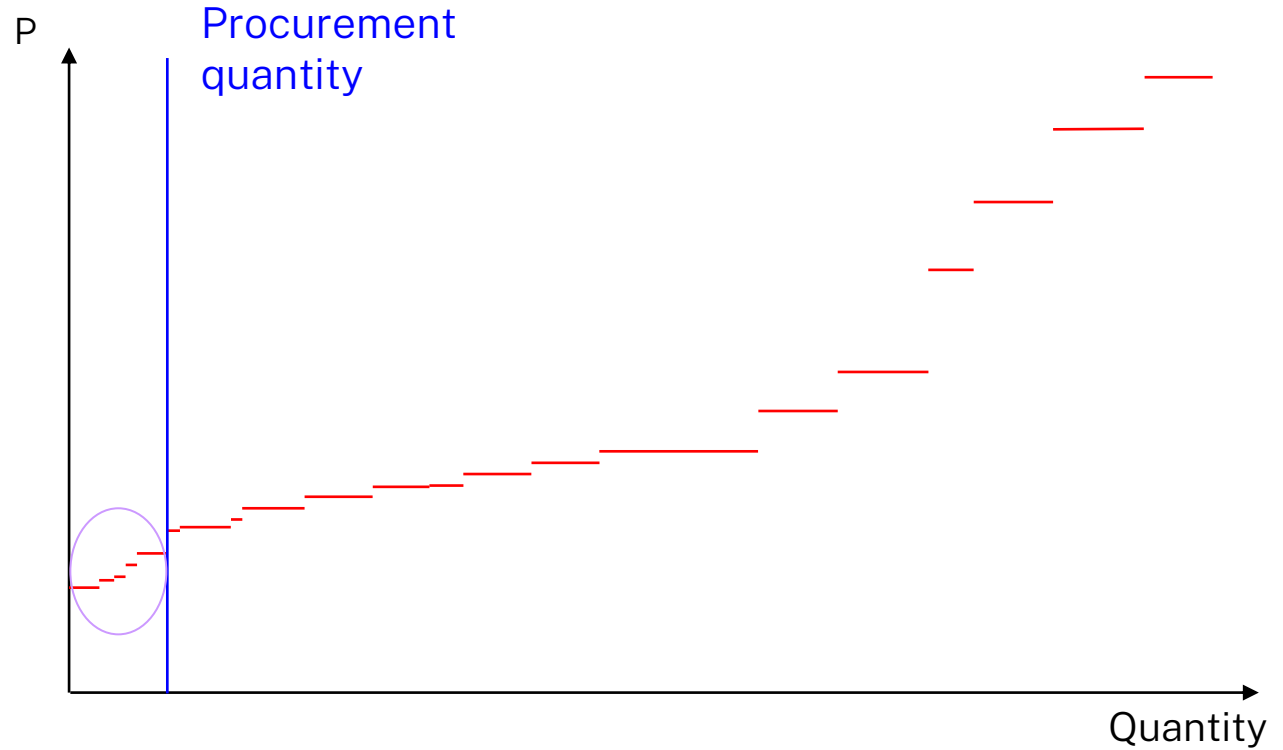
Pay-as-bid: Projects are paid the price they offered

Have been used to acquire new renewables, with auction winners receiving a PPA

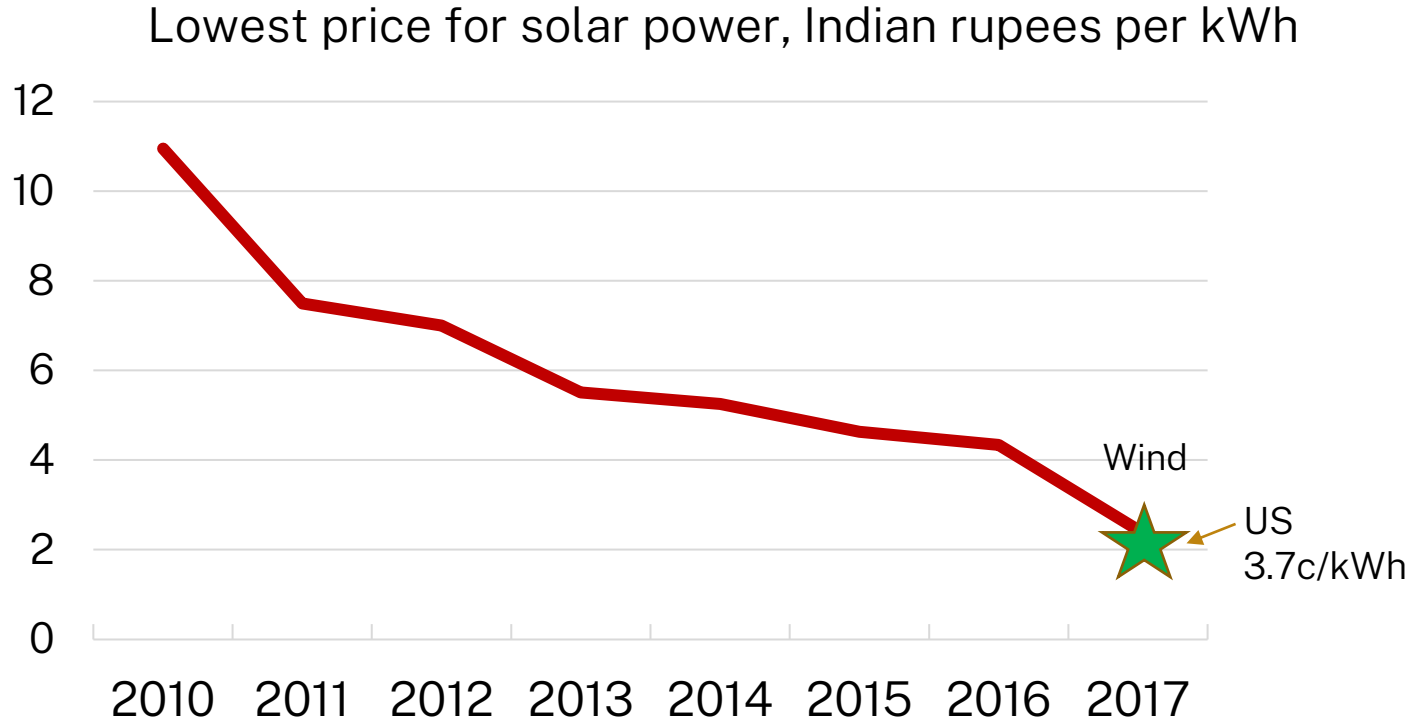
Competition in these auctions has helped to drive down prices



Reverse auction offers



India's reverse auction prices



Exchange rate: 75 Indian rupees \approx 1 USD



Tips for successful reverse auctions



Solar park with capacity procured through a reverse auction, India

1. Encourage a large number of participants
2. Limit the quantity being procured at auction
3. Take steps to place downward pressure on project costs
 - Offer secure PPAs
 - Guaranteed transmission connections
 - Government-established **solar parks** can help to avoid cost replication via:
 - Provision of data on local solar/wind conditions
 - Provision of environmental impact assessments
4. Strike a balance between penalising delivery failures (e.g. through loss of bond) and fostering competition

[Read more](#)

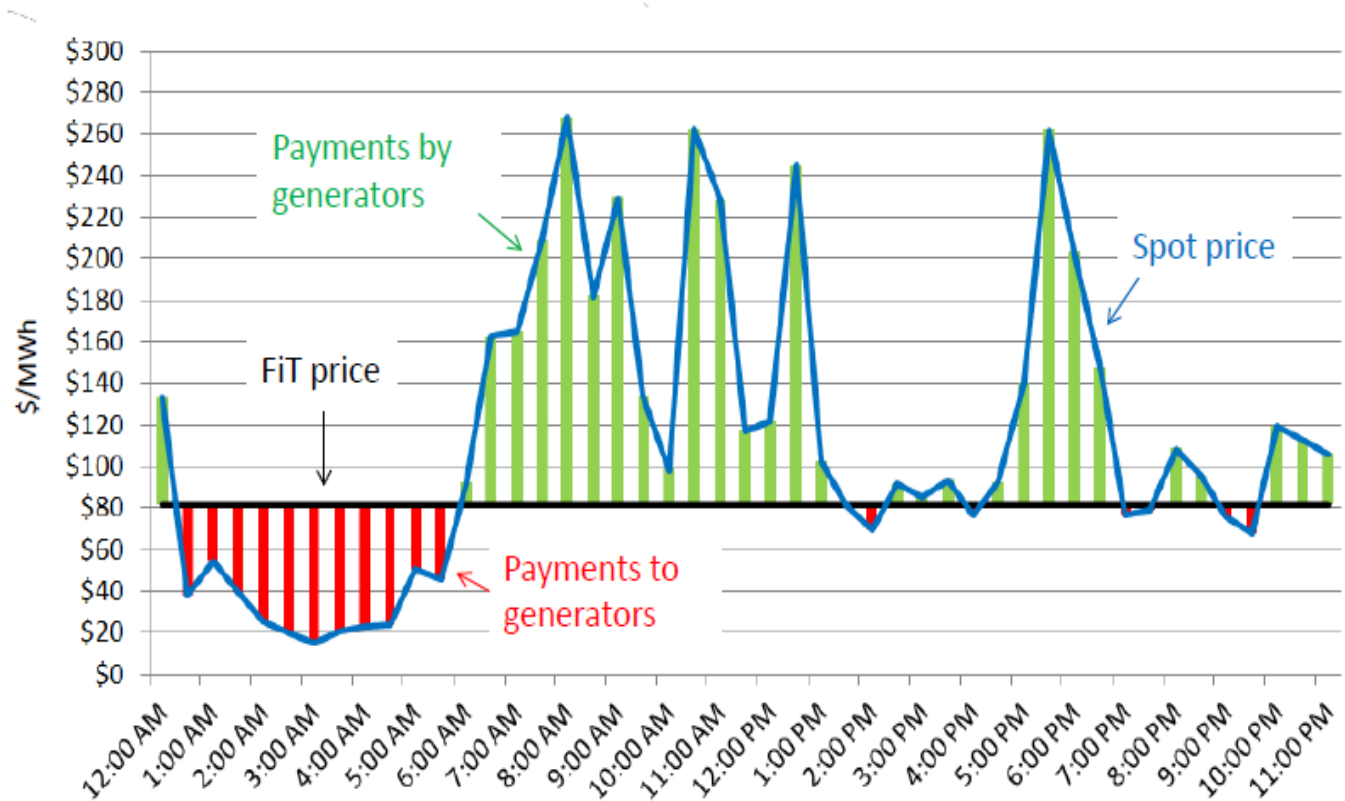
Contracts for difference (Cfd)

In the ACT scheme, projects receive a PPA on a **contract for difference** basis

- When the wholesale market price is below the FiT price, ACT will pay the generator a top up amount
- When the wholesale market price is higher than the FiT amount, ACT will be paid the difference
- For the generator, the price risk is removed



Contract for difference payments



Source: [Buckman](#)

