Australia's National Science Agency

Small-scale solar PV batteries

Projection results

Paul Graham | 28 April 2021

Key differences to 2020

- Higher short term trend
  - COVID-19 proven immaterial
  - Strong historical growth across all categories feeds into stronger extended short term trend
- Modelling approach has reduced the sensitivity of projections to electricity prices
  - Deployment holds up better when retail price falls (near term) and does not increase as much when retail prices rises (second half of projection period)
- Greater clarity on impact of various state incentives
- Improved battery data on location of deployment and mix between residential and commercial (impacts distribution rather than levels)

Feedback

- Check all Victorian schemes included to their fullness
  - Renter-landlord scheme better integrated into projections
- Ensure methodology considers whether vehicle to grid and vehicle to home should limit battery uptake
- Check time of use profiles reflect peak periods
- Addressed some discontinuities between short and long term projections
- Inclusion of additional regional information in appendix

Key assumptions

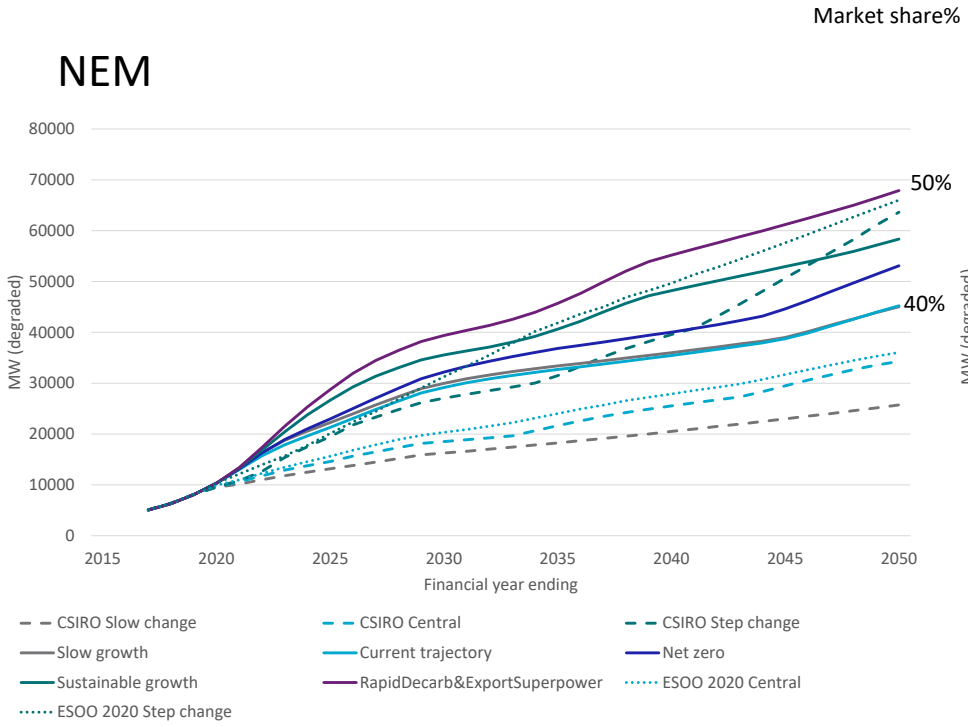
	Maximum market share(+/-25%)*		Battery operation (by 2050)					
	Residential	Business	Residential			Business		
ESOO 2021			Solar shift	TOU	VPP	Solar shift	TOU	VPP
Current trajectory	42%	17%	68%	2%	30%	12%	48%	40%
Slow growth	42%	17%	76%	2%	23%	14%	56%	30%
Net zero	45%	20%	44%	4%	53%	6%	24%	70%
Sustainable growth	50%	24%	36%	4%	60%	4%	16%	80%
Export superpower	61%	34%	32%	4%	64%	3%	12%	85%
Rapid decarbonisation	61%	34%	32%	4%	64%	3%	12%	85%
ESOO 2020								
Central	42%	17%	68%	2%	30%	12%	48%	40%
Slow change	34%	11%	84%	1%	15%	16%	64%	20%
Step change	61%	34%	36%	4%	60%	4%	16%	80%

*Average saturation point of the rooftop solar adoption curve logistic function which is allowed to vary by +/25% depending on demographic factors in each SA2 region

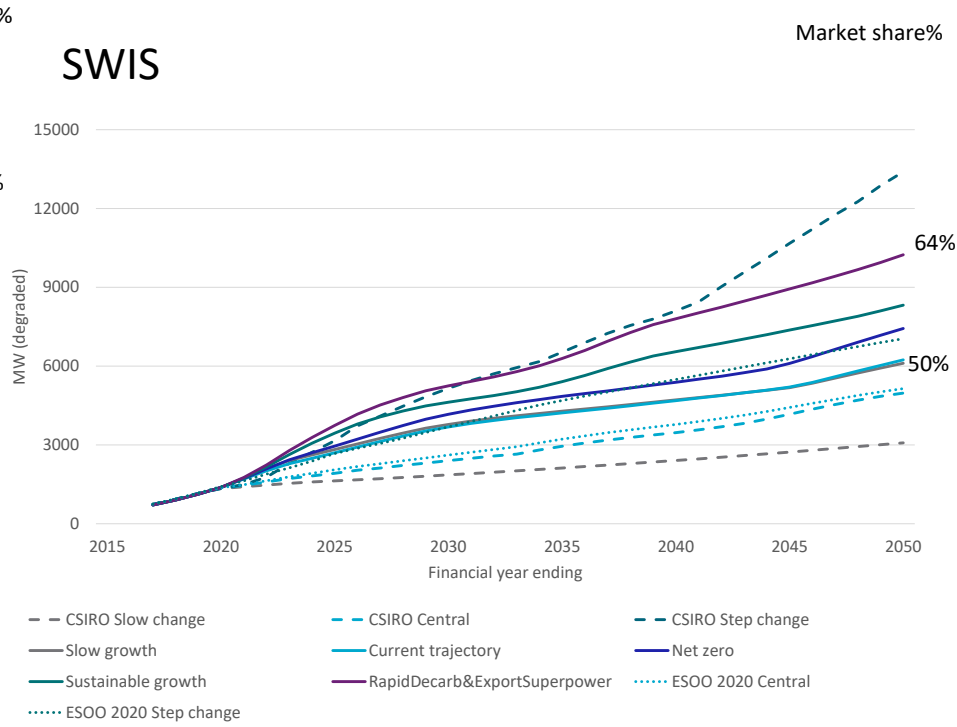
CSIRO

Solar PV capacity: capacity projections

NEM

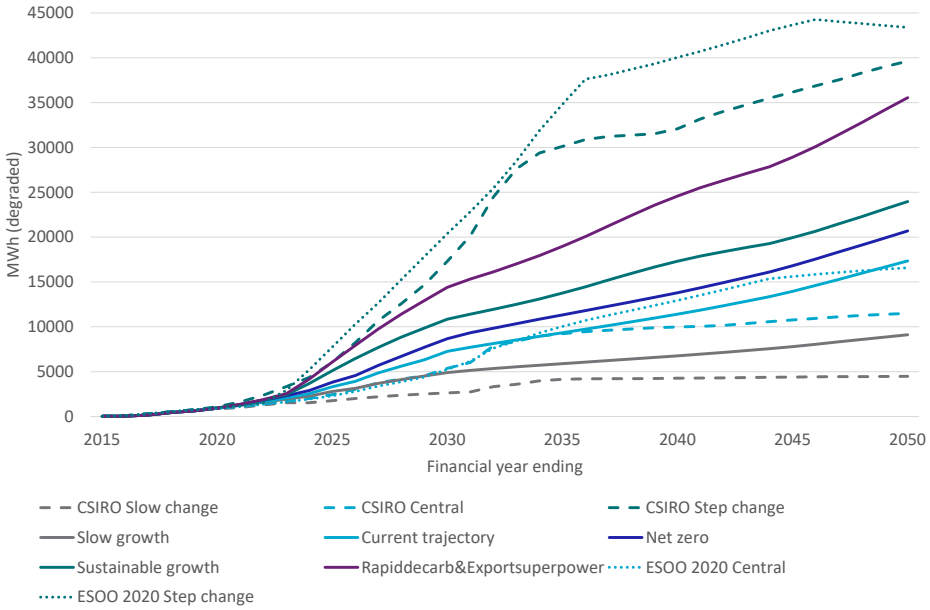


SWIS



Battery capacity: capacity projections

NEM



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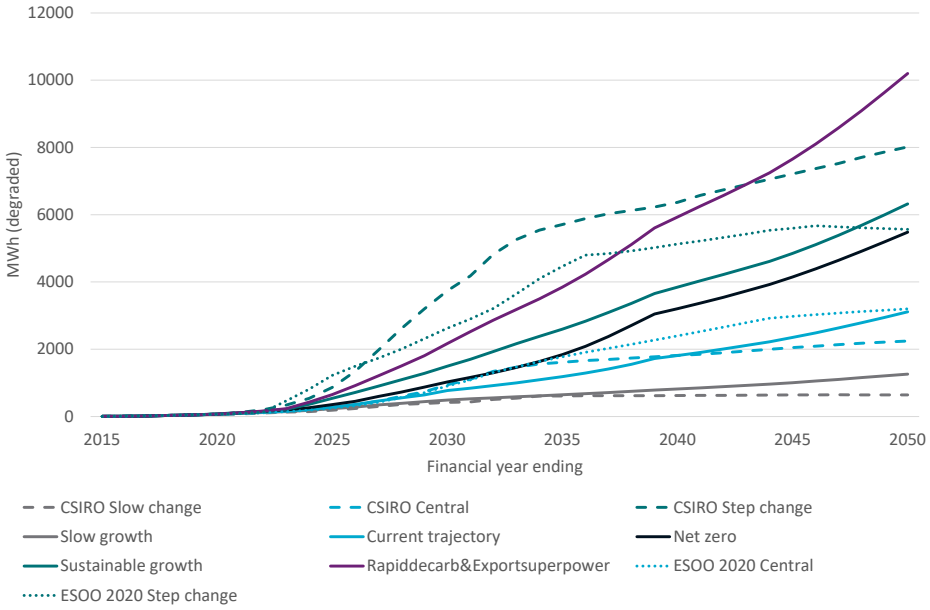
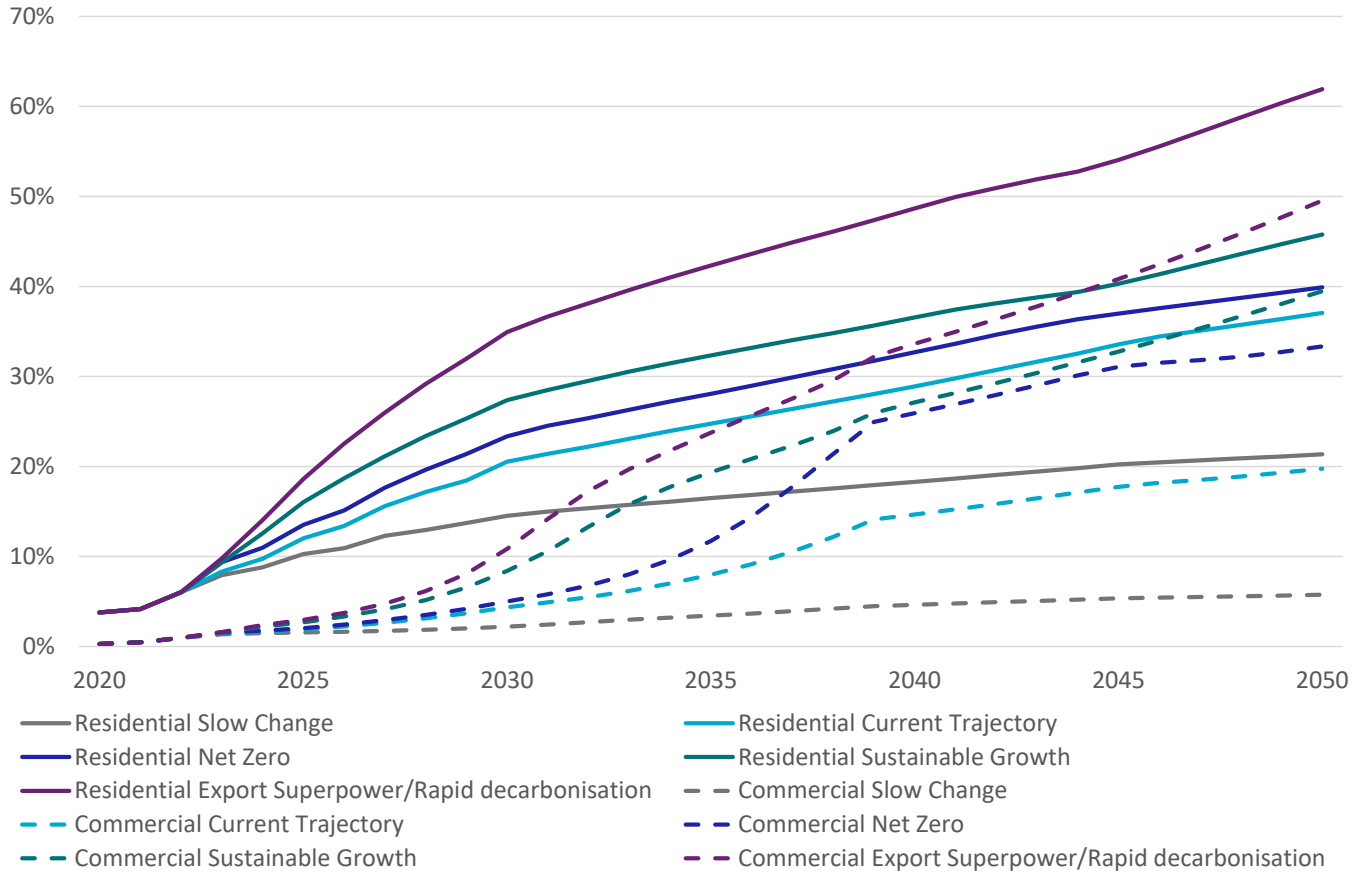


Share of PV with battery installed

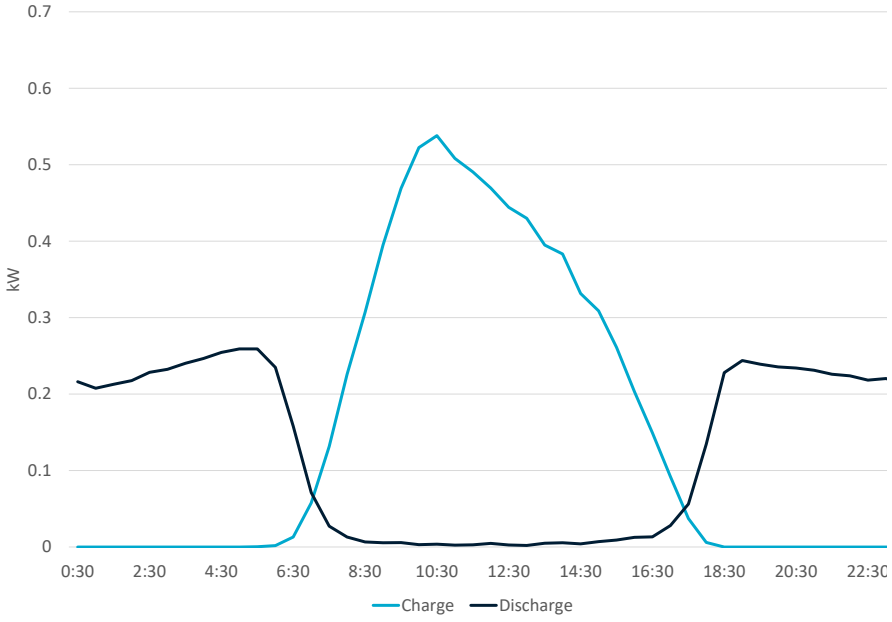


Batteries are less popular than solar in Slow Growth

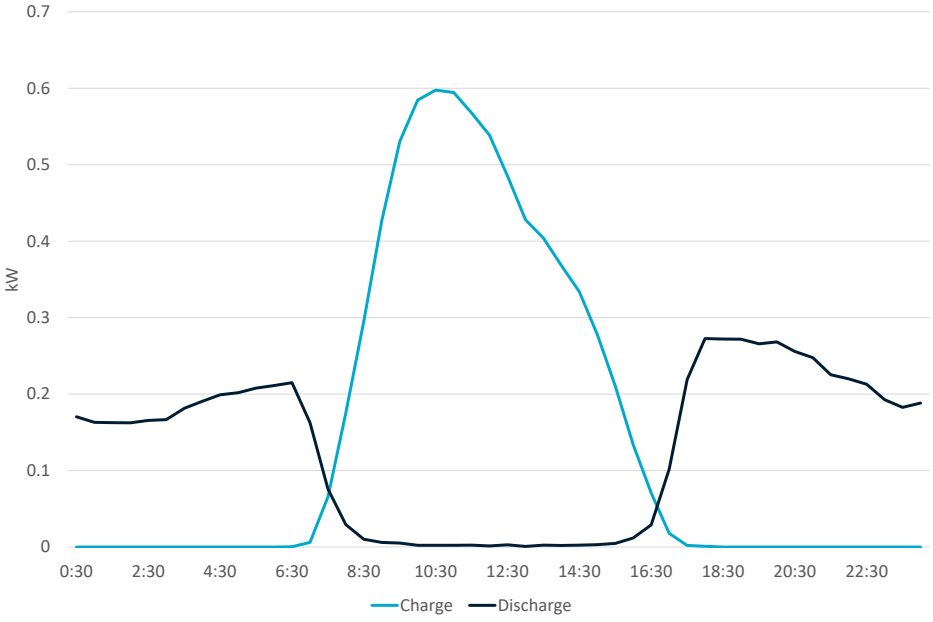
Projected stationary battery ownership is a maximum of 60% PV owners or 30% of households. This is not expected to crowd out use of vehicle batteries.

Residential shift solar profile

Summer average

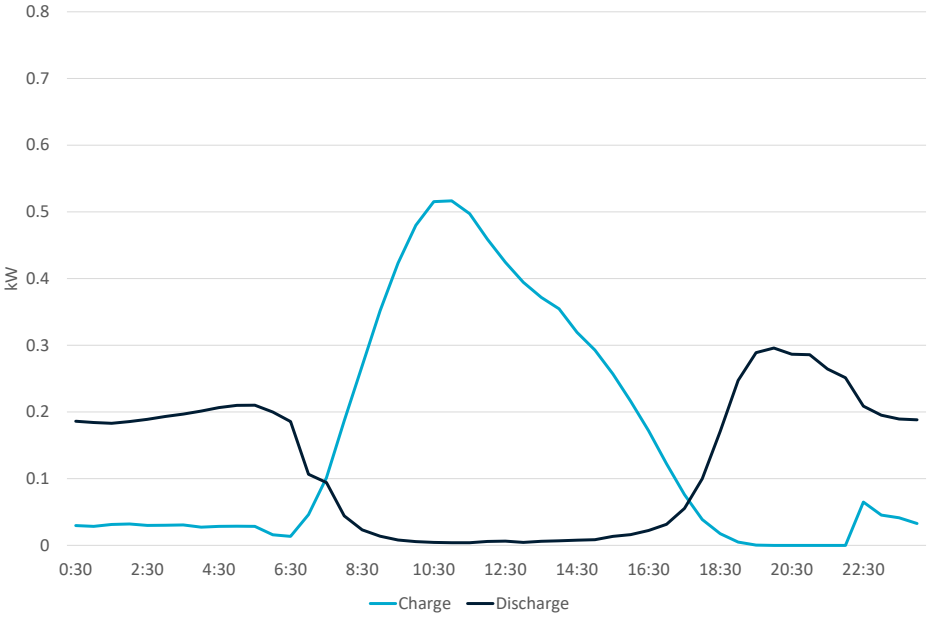


Winter average

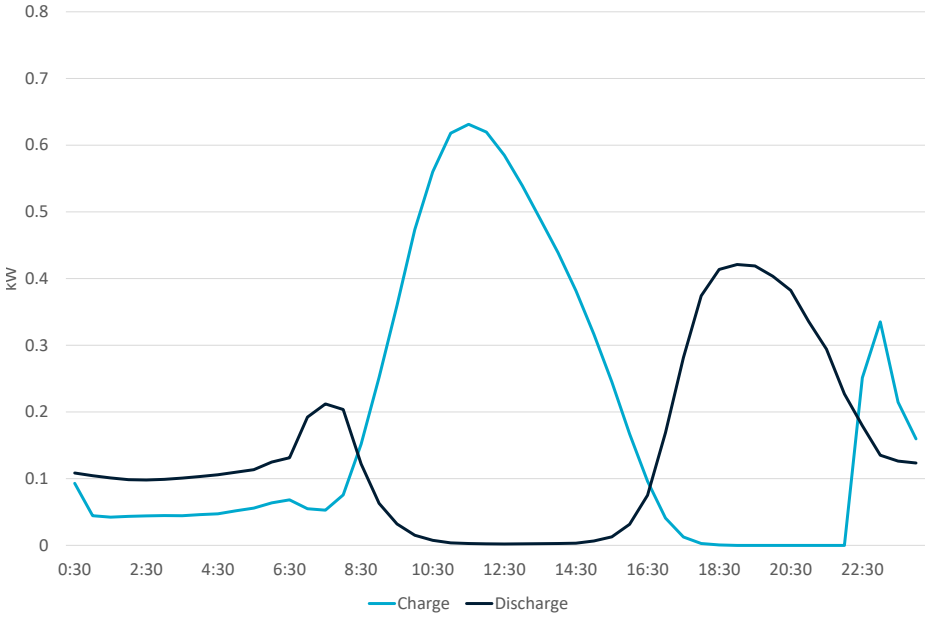


Residential TOU profile

Summer average



Winter average



Thank you

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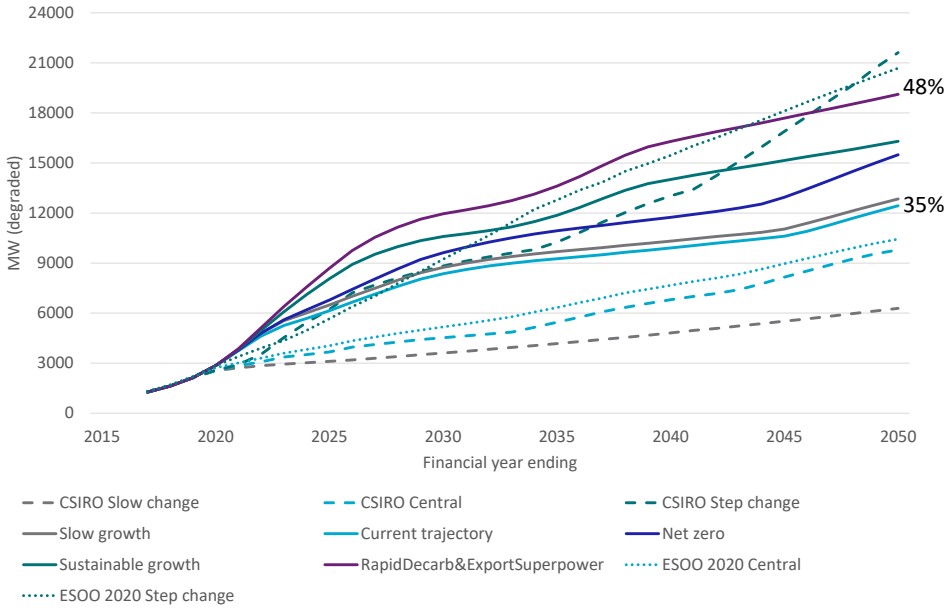
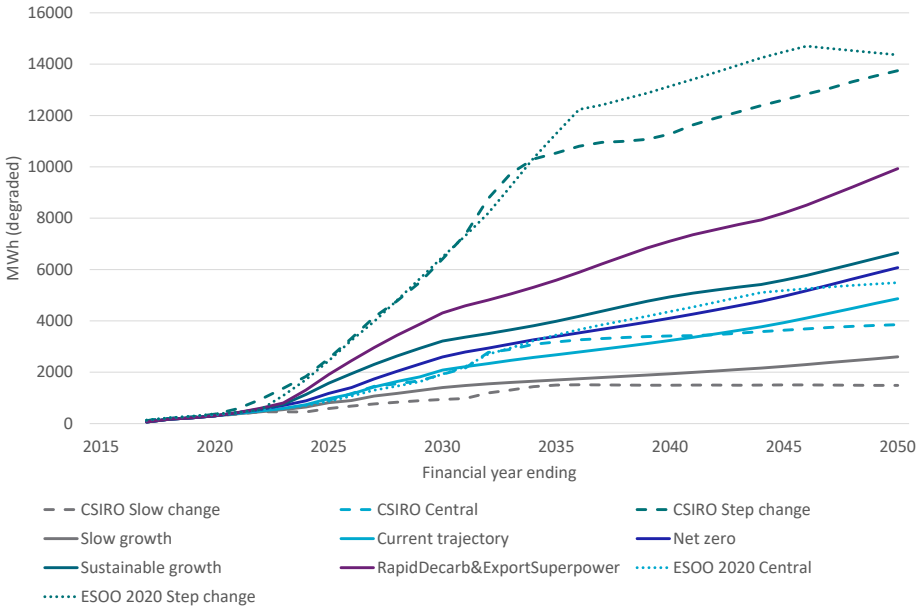
NSW

Market share%

Solar PV capacity



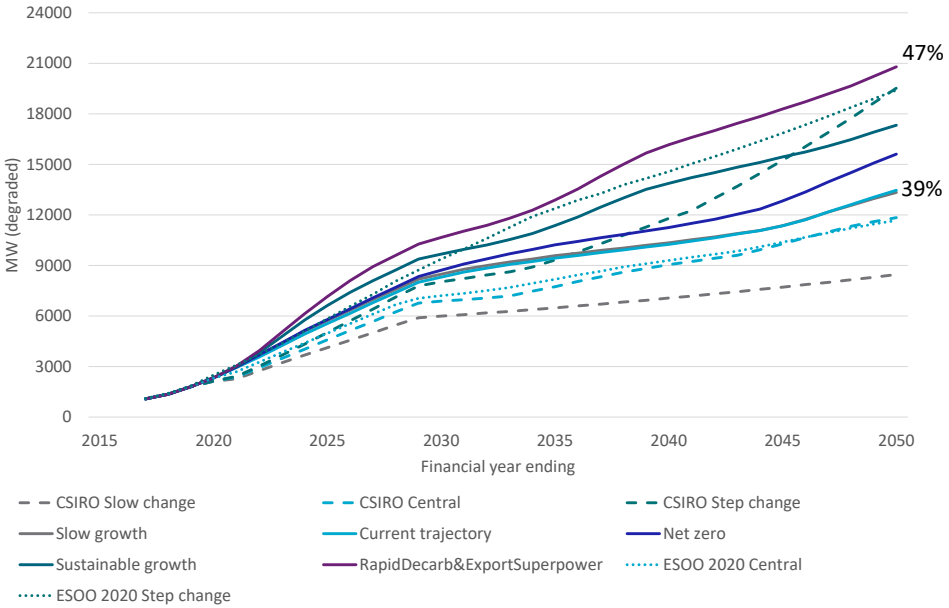
Battery capacity



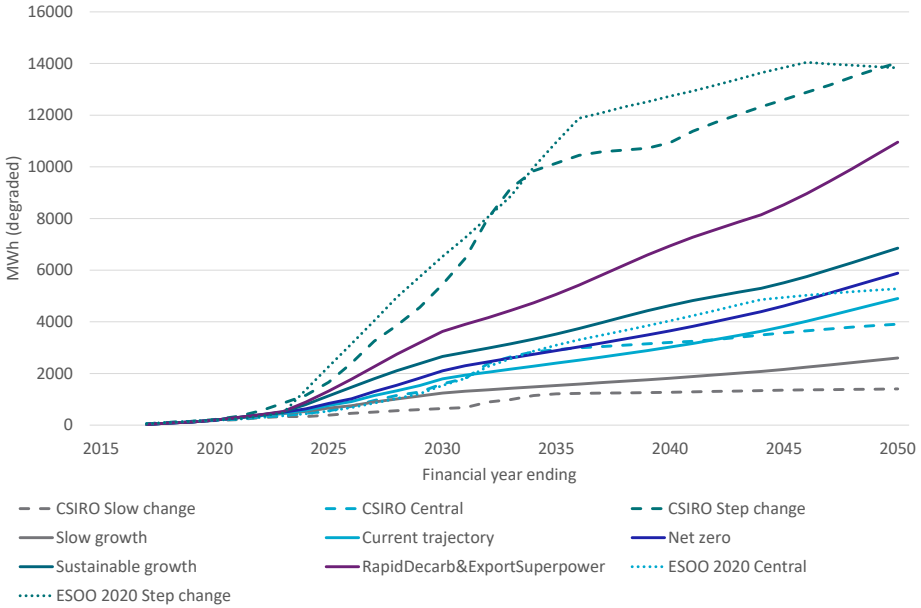
VIC

Market share%

Solar PV capacity



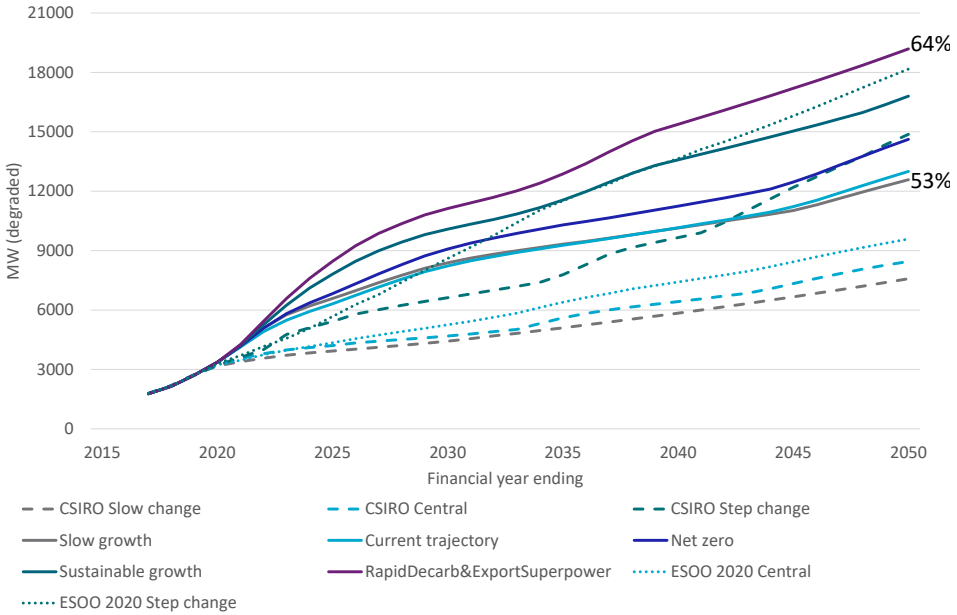
Battery capacity



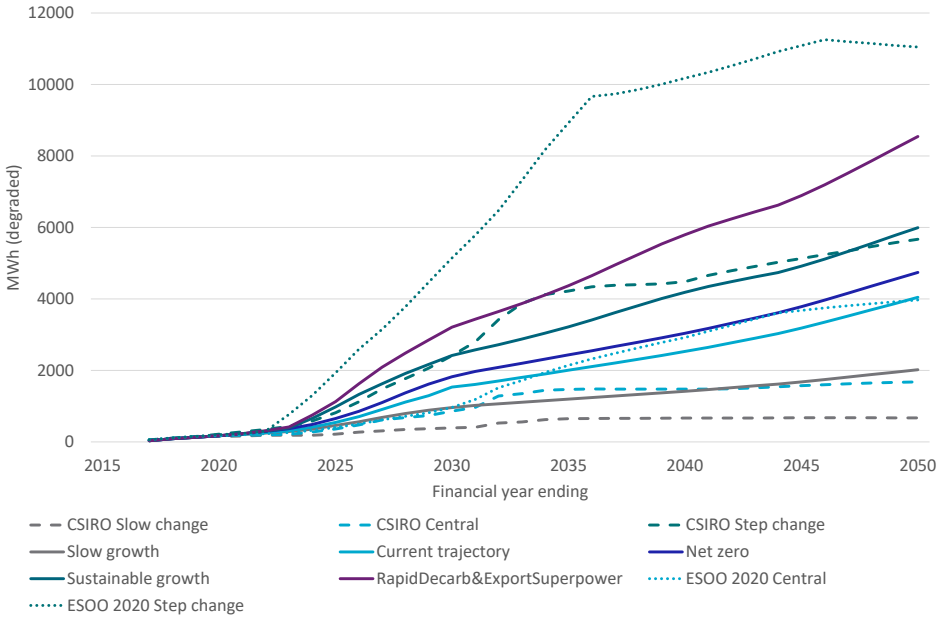
QLD

Market share%

Solar PV capacity



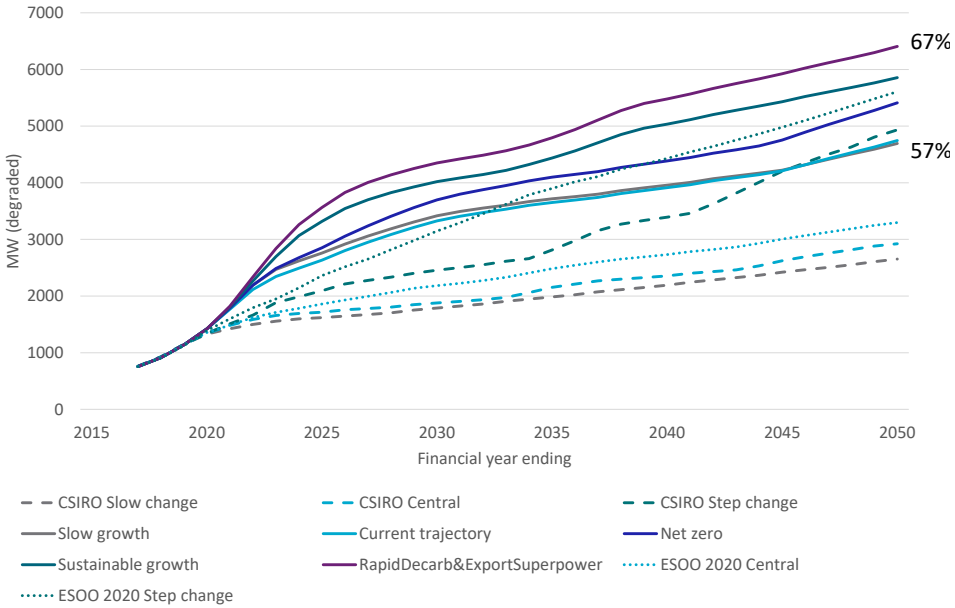
Battery capacity



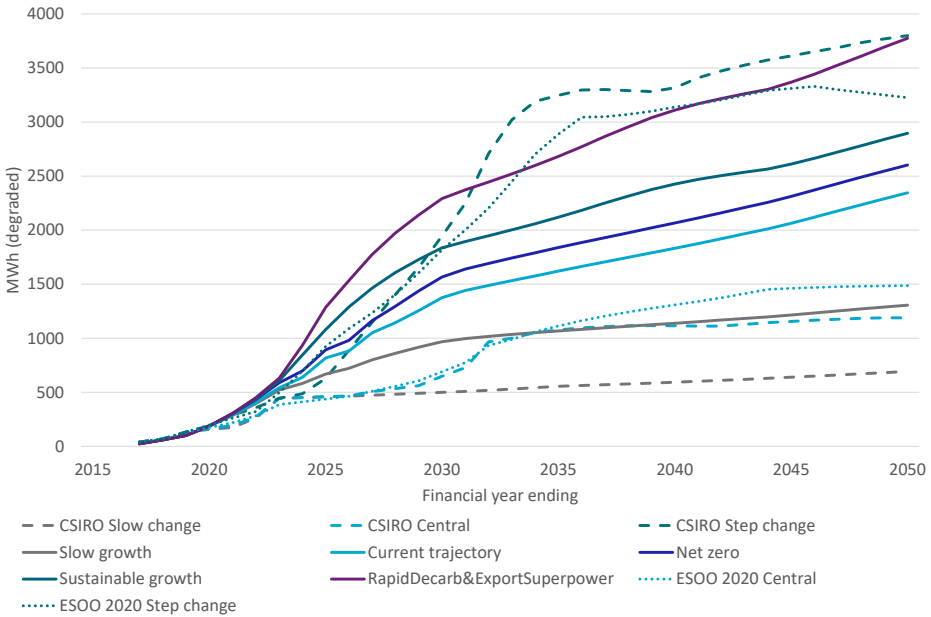
SA

Market share%

Solar PV capacity



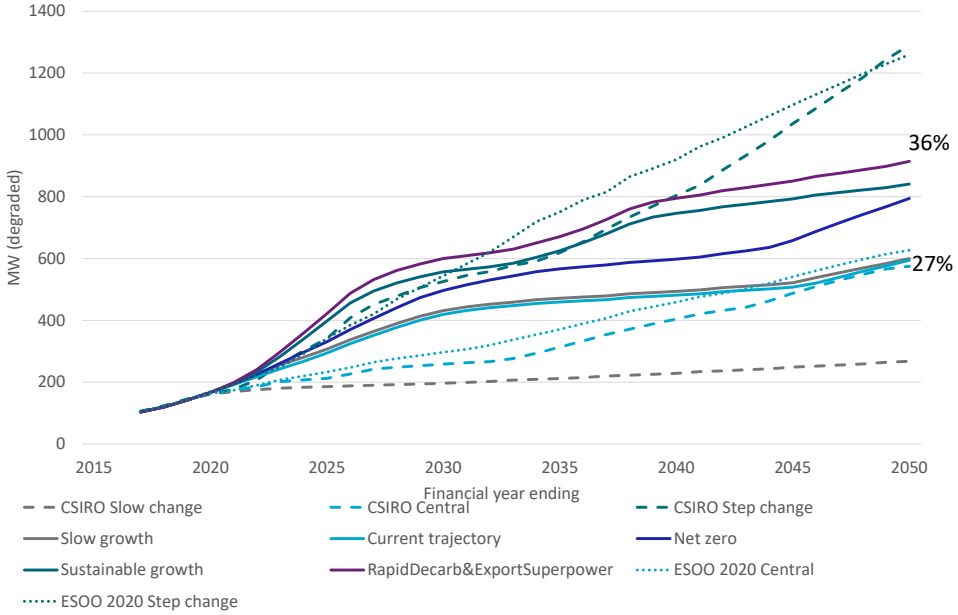
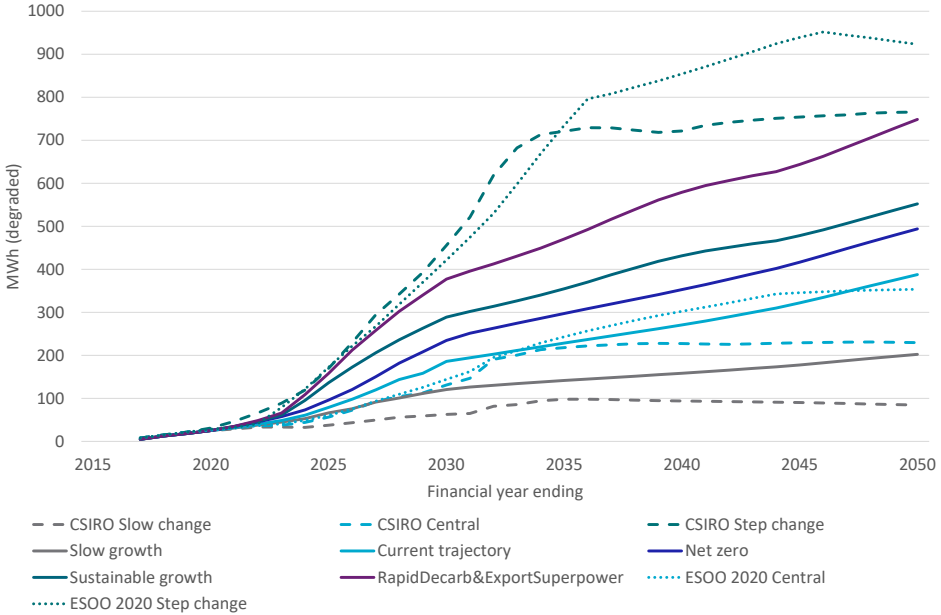
Battery capacity



TAS

Market share%

Solar PV capacity



Battery capacity