

# Rooftop solar market

Marc England

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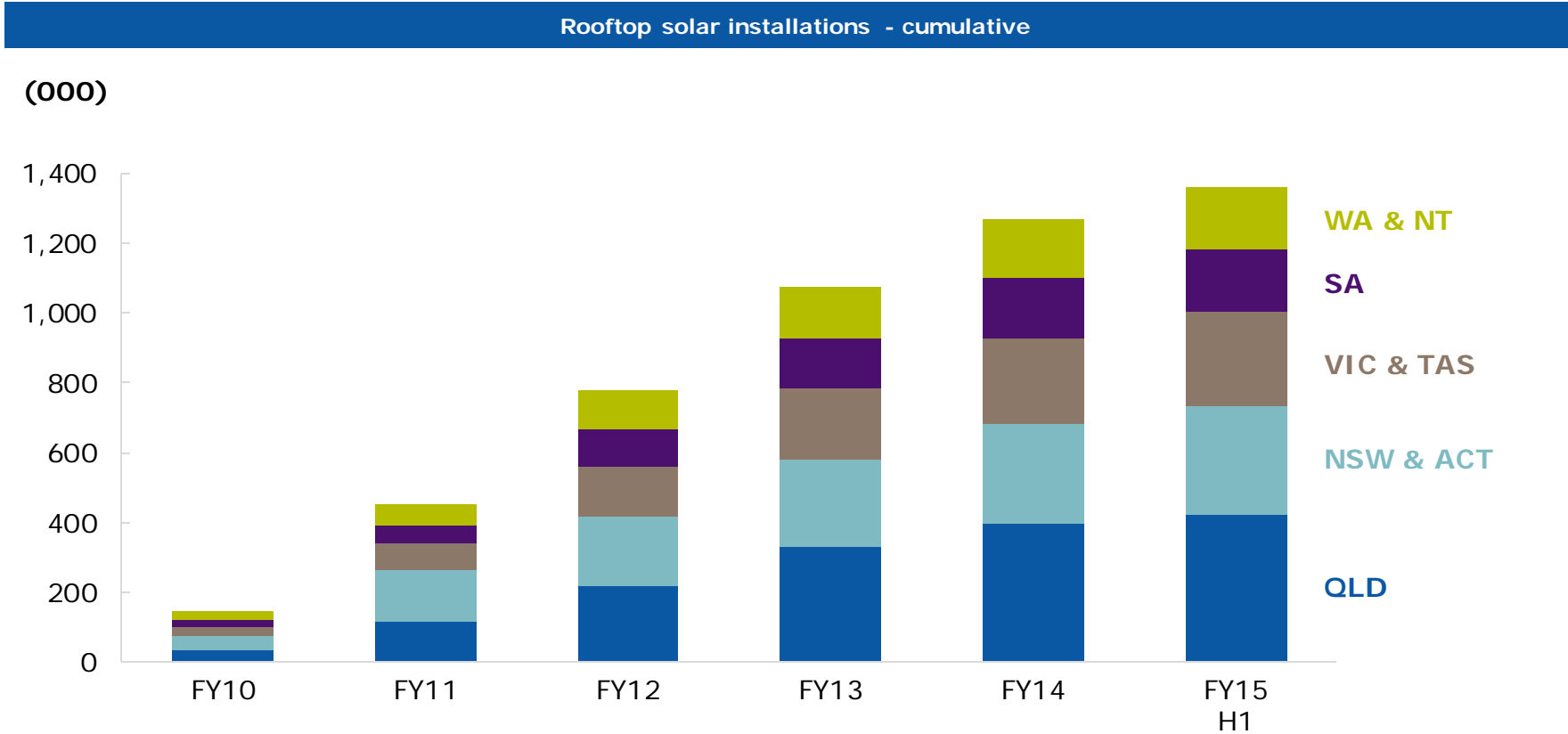
# Summary

Rooftop solar market is ~1.4 million installs and will continue to grow.

- > **Rooftop solar has grown rapidly to ~1.4m installs driven by:**
  - » High consumption based retail electricity tariffs
  - » Rapid system cost reductions
  - » High subsidies
- > **Growth will continue, as:**
  - » Headroom is still plentiful in homes and businesses
  - » Costs will continue to decline
  - » Technologies will continue to improve

# Growing solar installs across Australia

Rapid growth to 1.4 million installs.

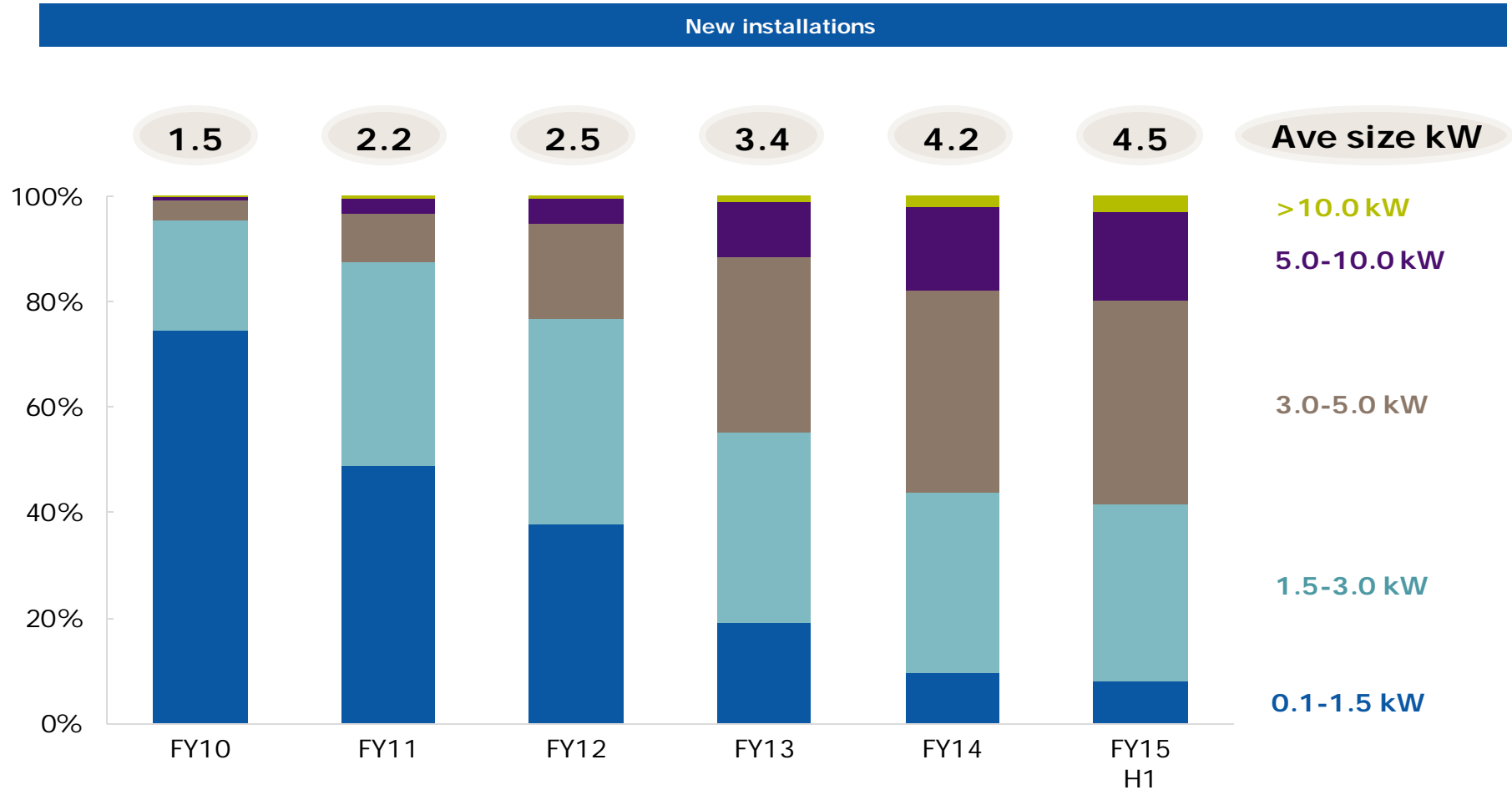


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Source: CER, Sunwiz

# Increasing system sizes

Average system size grew from 1.5 kW to 4.5 kW in five years.

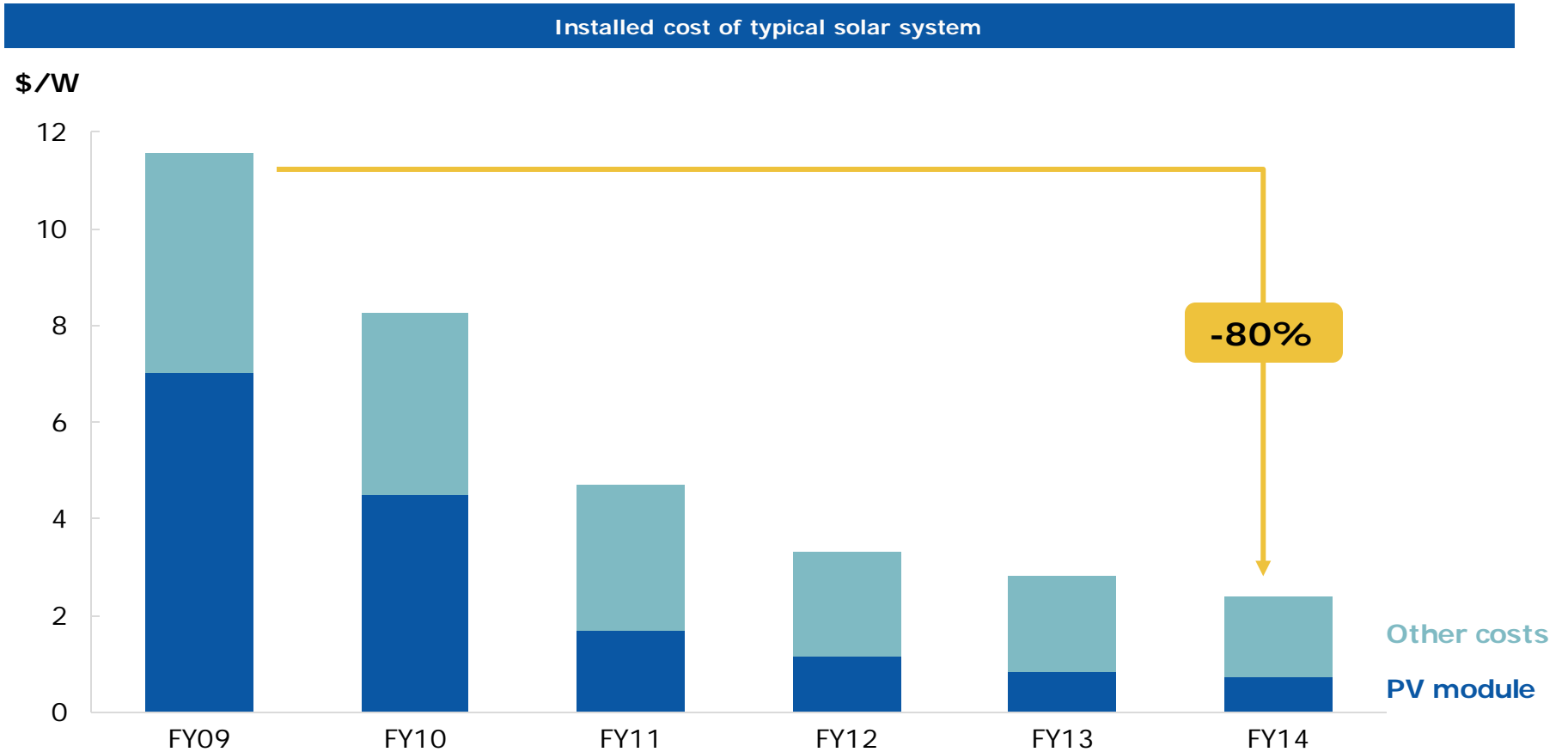


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Source: Sunwiz

# Falling system costs

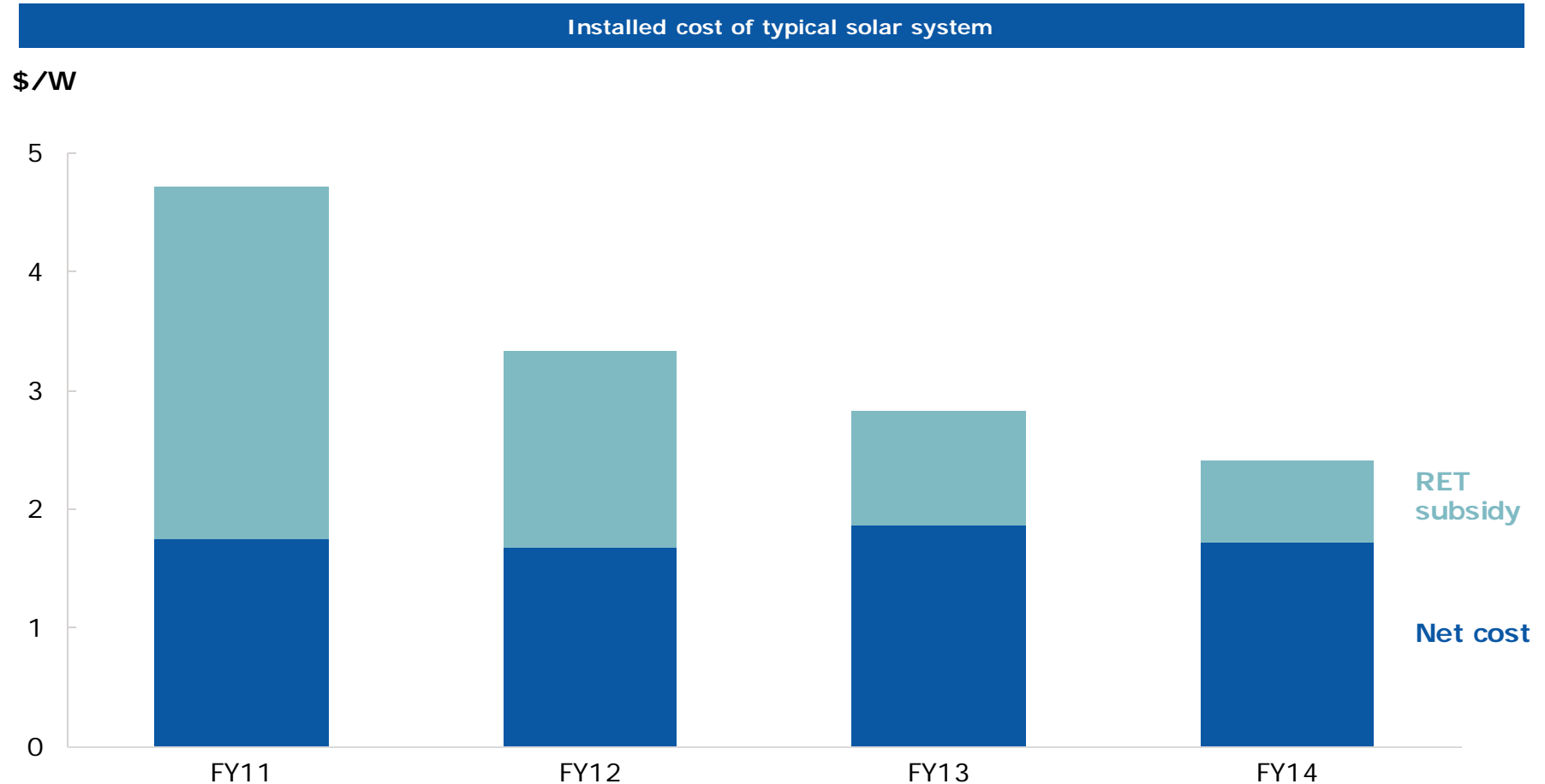
Cost of rooftop solar fell by 80% in five years.



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# High upfront Commonwealth subsidy

RET subsidy substantially reduced the upfront cost.



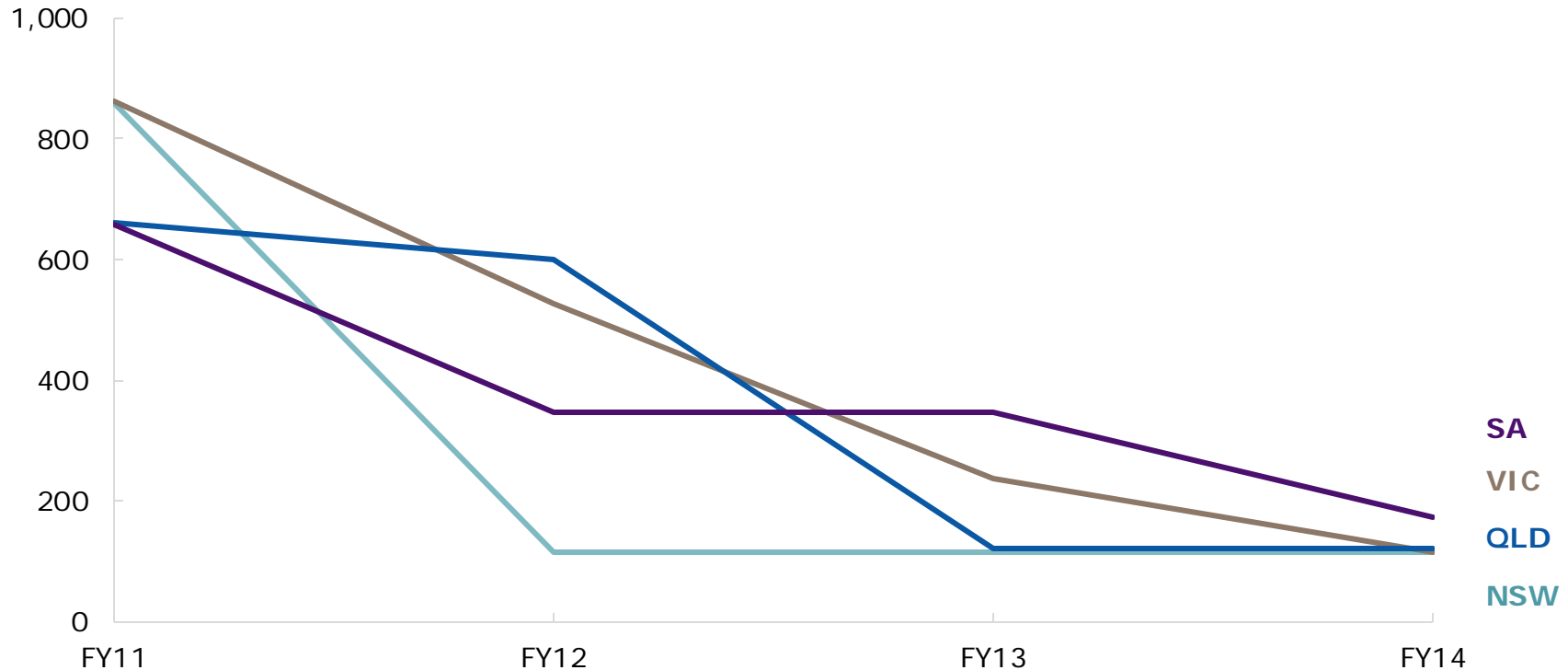
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# High ongoing state subsidies

State feed-in-tariffs provided an additional large ongoing benefit.

## Feed-in-tariffs

\$ p.a. / kW of capacity used for export



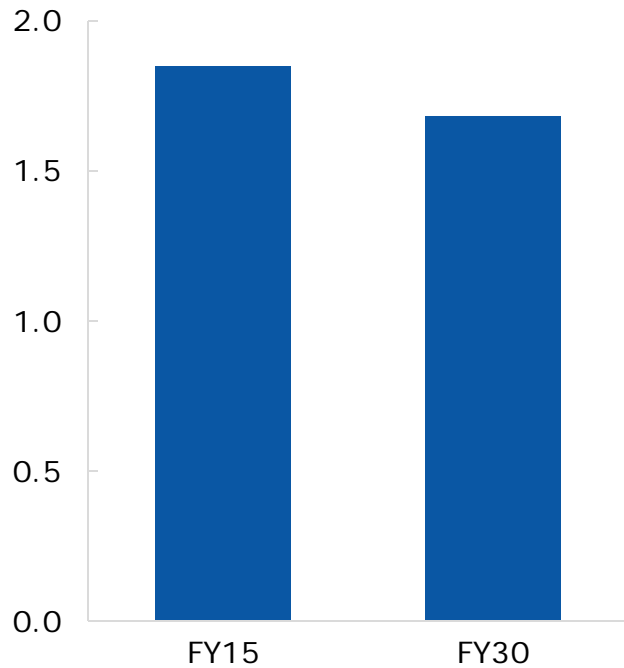
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# Large market with plenty of headroom

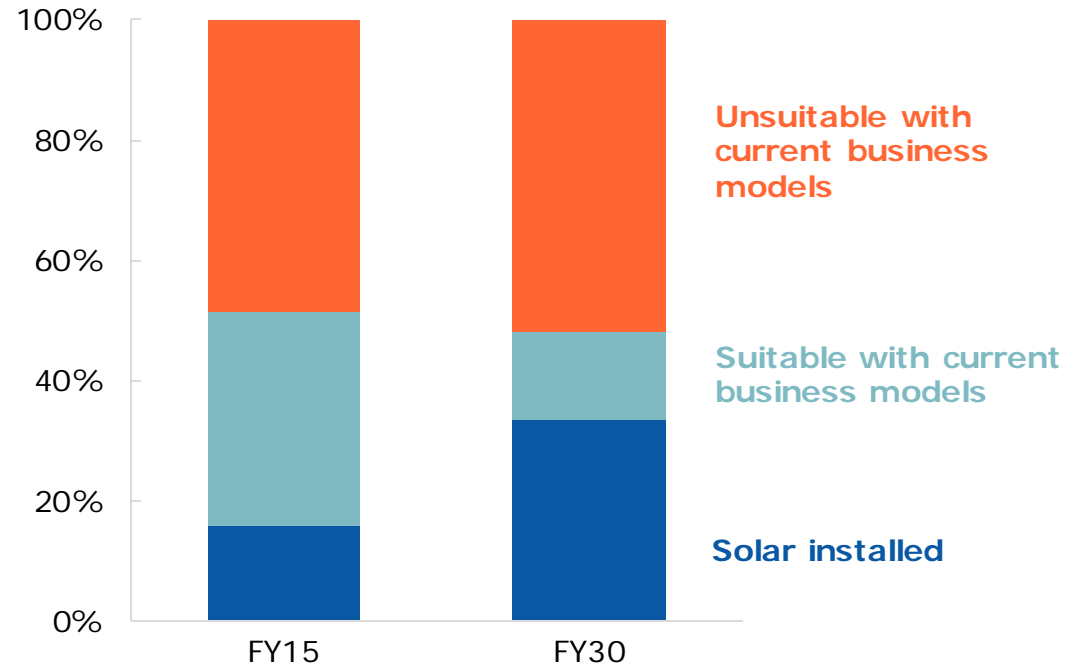
Lots of room for future growth even with current business models.

Total solar install revenue

\$ billion p.a.



Residential households



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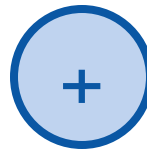


# Robust future growth drivers

Solar will remain attractive.

## Falling costs + sophistication

- > **RET subsidy reductions** partly or fully **offset by further cost decline**
- > **Financing** & more **sophisticated commercial models** improve access to solar



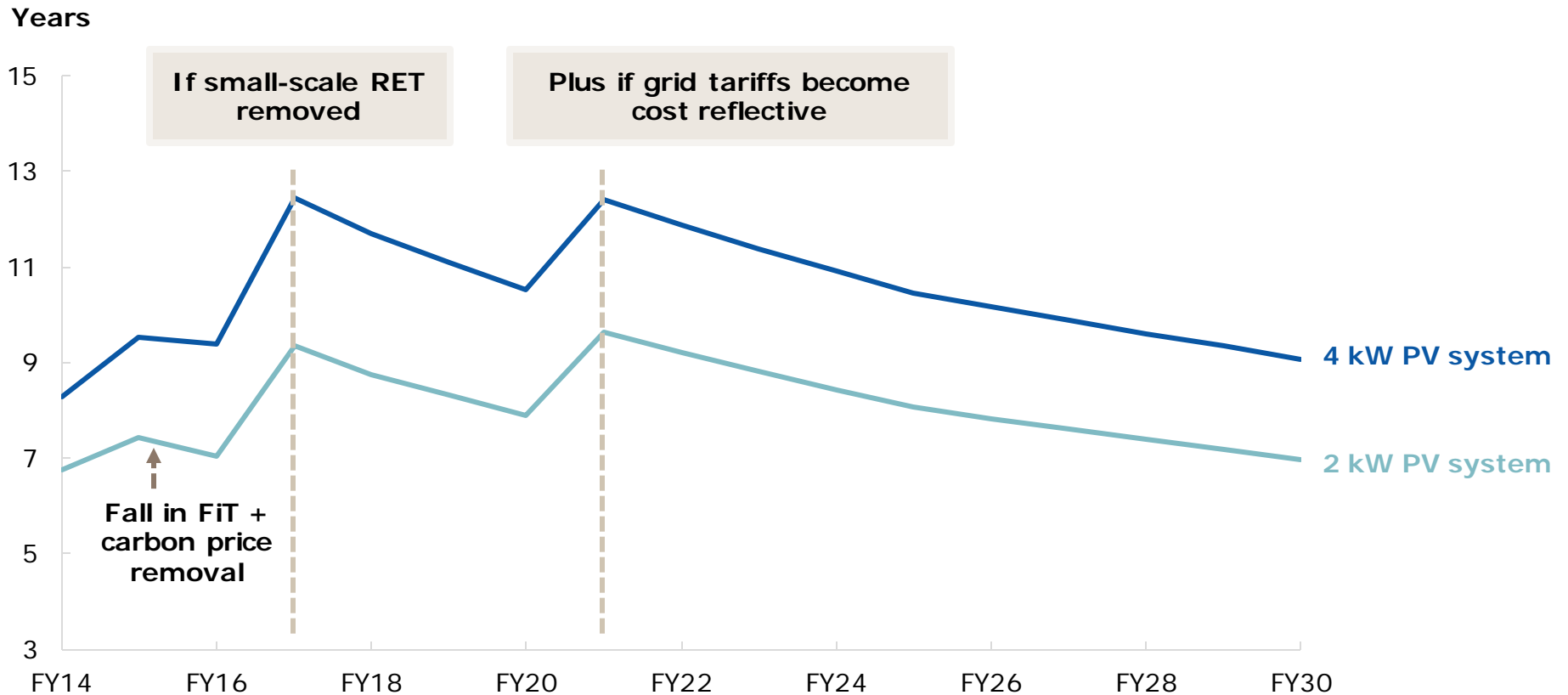
## Increasing customer benefit

- > Better efficiency with **solar technology improvements**
- > Greater value capture with **energy storage technology**
- > More savings with **rising retail electricity prices**

# Resilient to policy & regulatory shifts

Impact of potential shifts likely to be temporary system downsizing.

Simple payback for typical NSW electricity customer

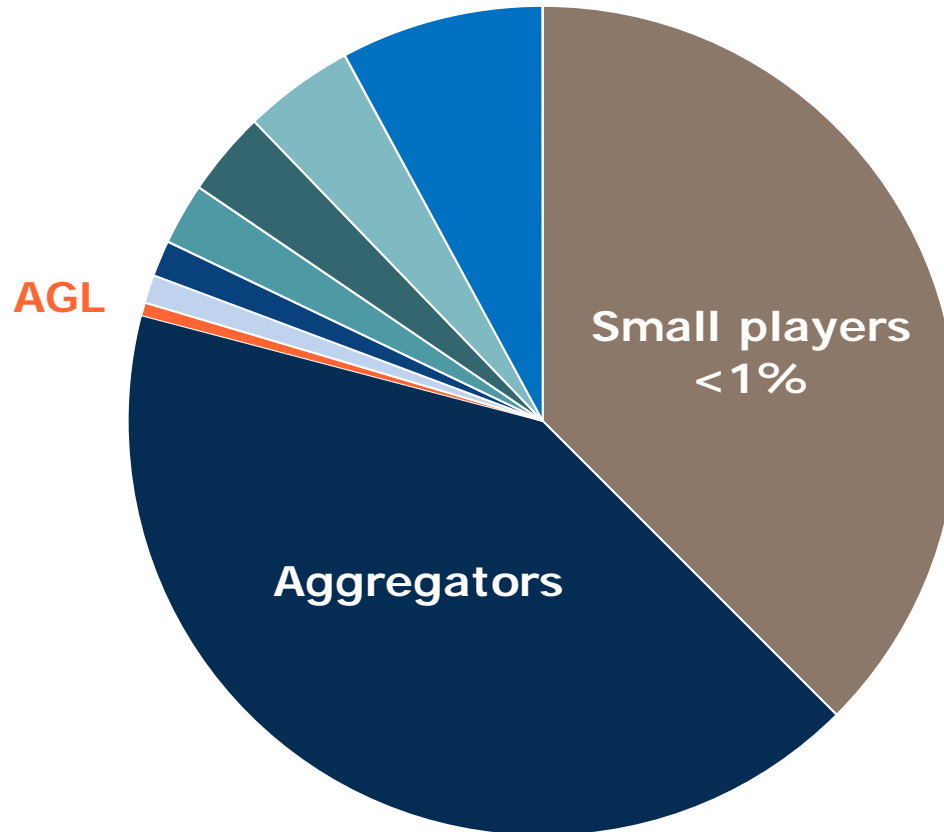


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# Sophistication will drive consolidation

Highly fragmented market to date.

2014 rooftop solar market shares



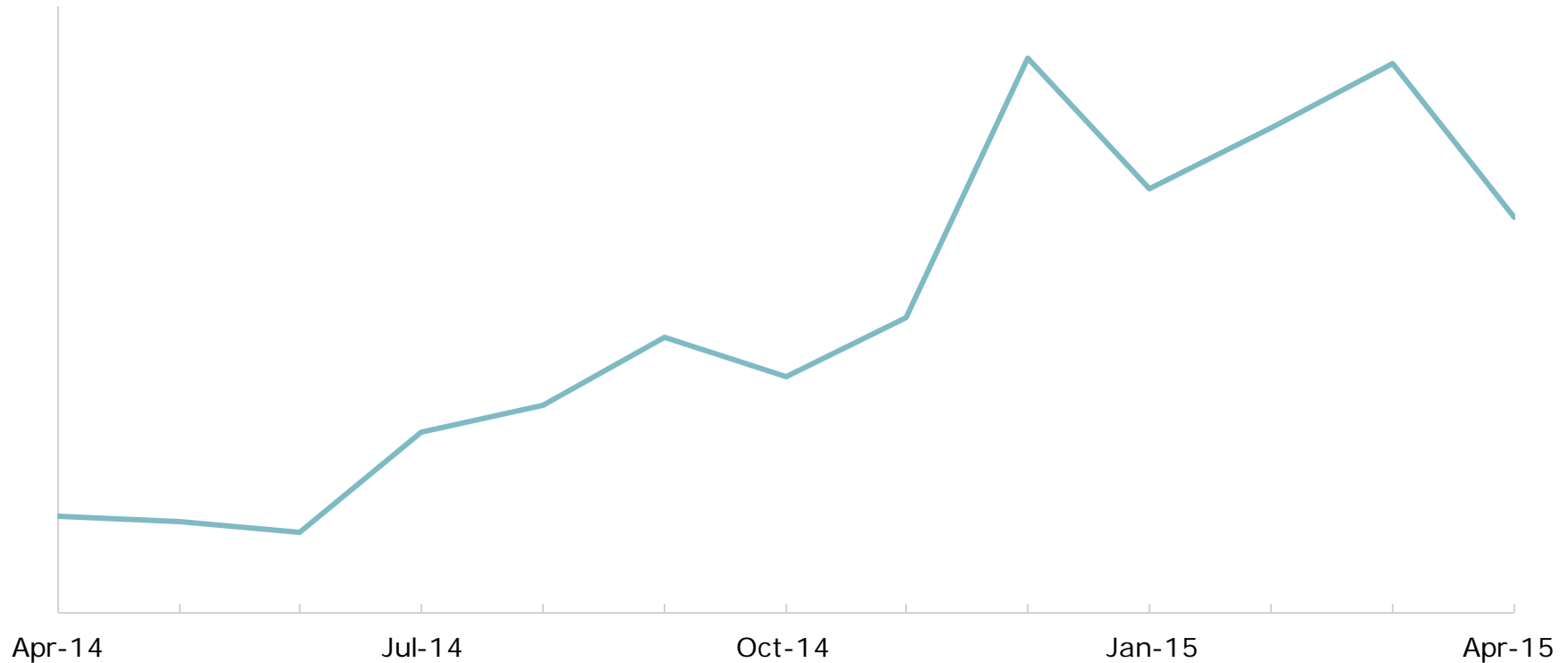
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Source: Sunwiz

# AGL is pushing hard to get ahead

Still a way to go but making good progress.

AGL monthly solar sales

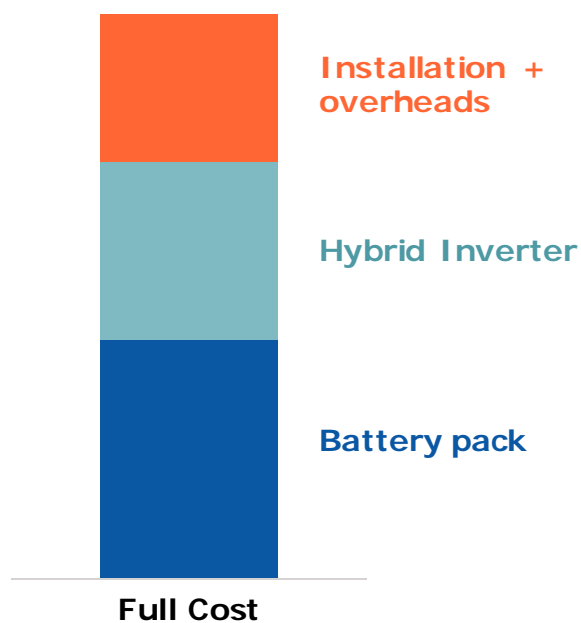


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# Energy storage has some complexity

Storage has a number of components, and key specifications differ.

## Storage basics



## Key storage specs

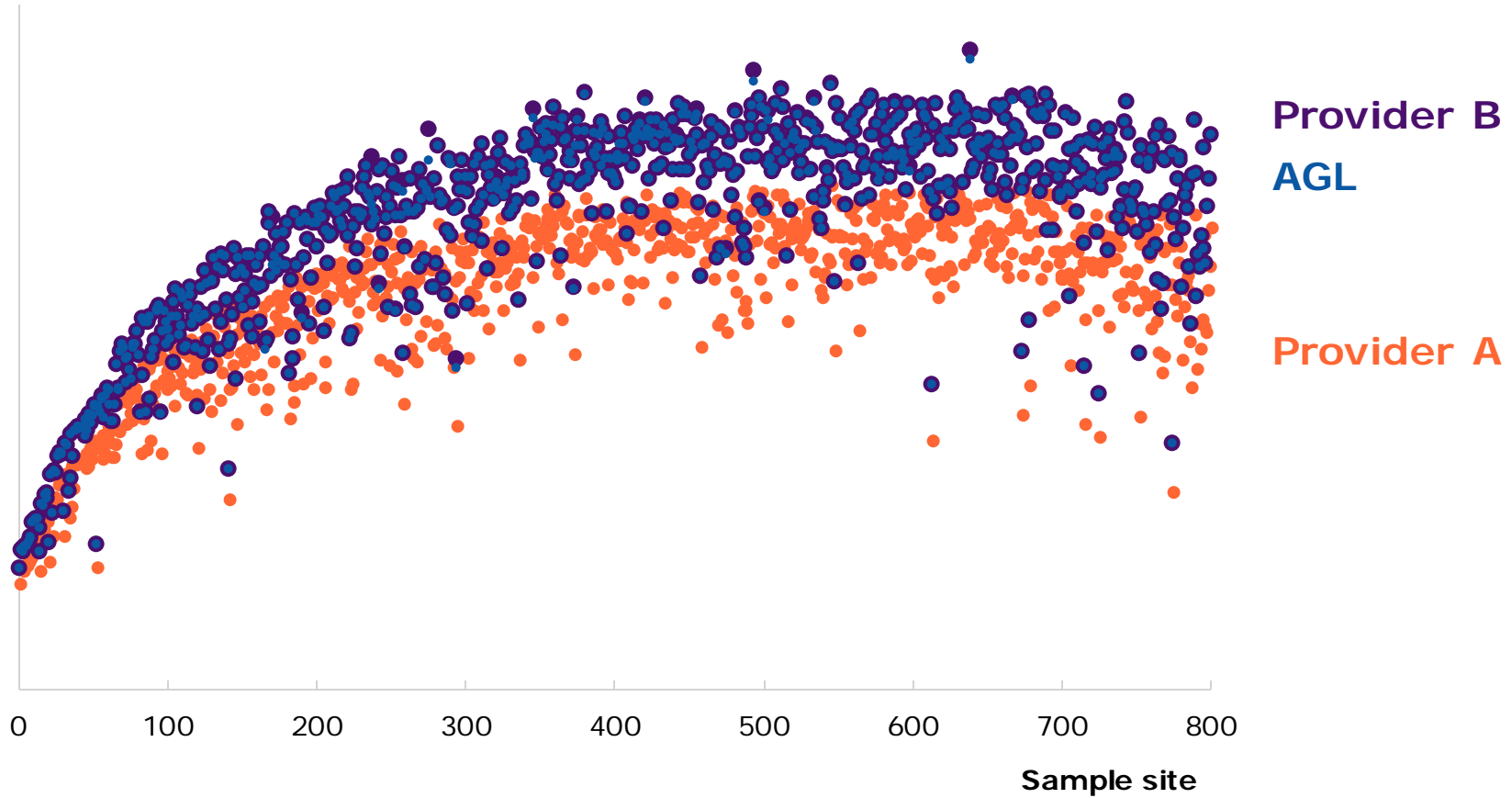
|                           | AGL | Provider A | Provider B |
|---------------------------|-----|------------|------------|
| Capacity (kWh)            | 7.2 | 7.0        | 6.4        |
| ⊗                         |     |            |            |
| Discharge depth (%)       | 80% | 80%        | 90%        |
| =                         |     |            |            |
| Usable capacity (kWh)     | 6   | 6          | 6          |
| -----                     |     |            |            |
| Nominal power output (kW) | 3.0 | 2.0        | 5.0        |
| Nominal power input (kW)  | 4.5 | 2.0        | 5.0        |

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# Detail matters for energy storage

Not all storage is created equal.

Storage driven savings for NSW households with 5 kW of solar



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