



RYSTAD ENERGY

PV MAGAZINE WEBINAR

04/08/2020

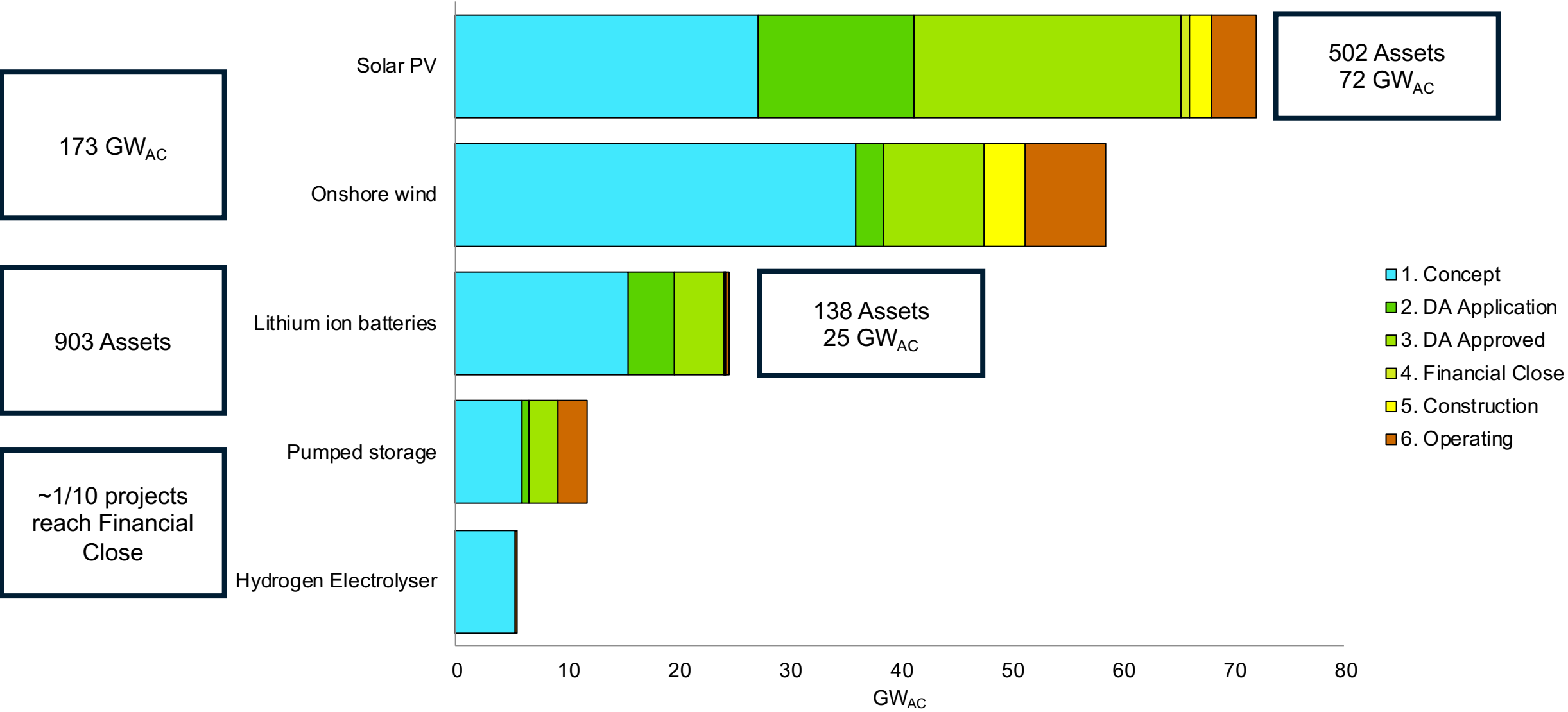
DAVID DIXON, SENIOR ANALYST – AUSTRALIA RENEWABLES

Contents

- 1) The pipeline
- 2) The players
- 3) The outlook

Source: Rystad Energy

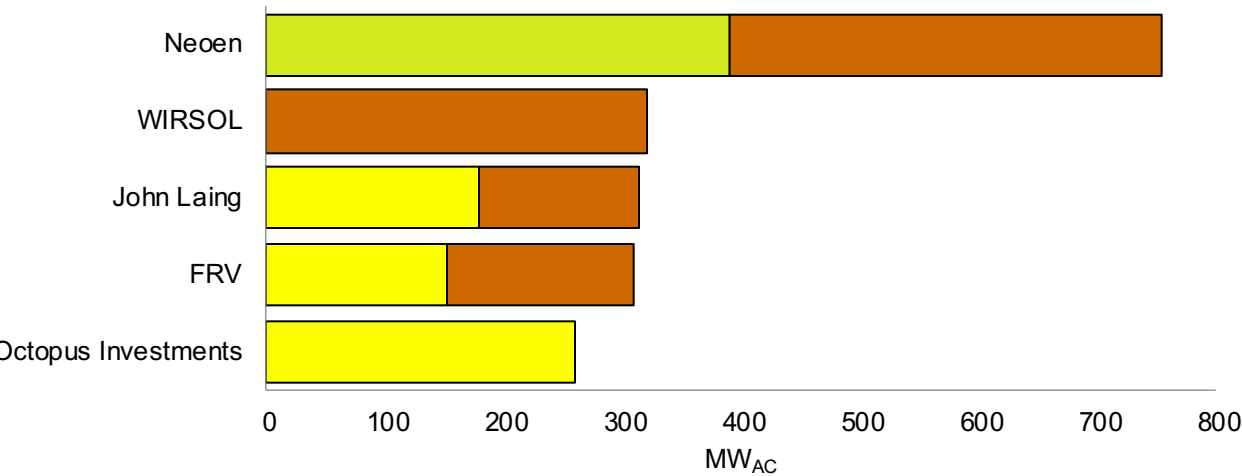
Australia utility PV, wind and storage pipeline: 9/7/2020



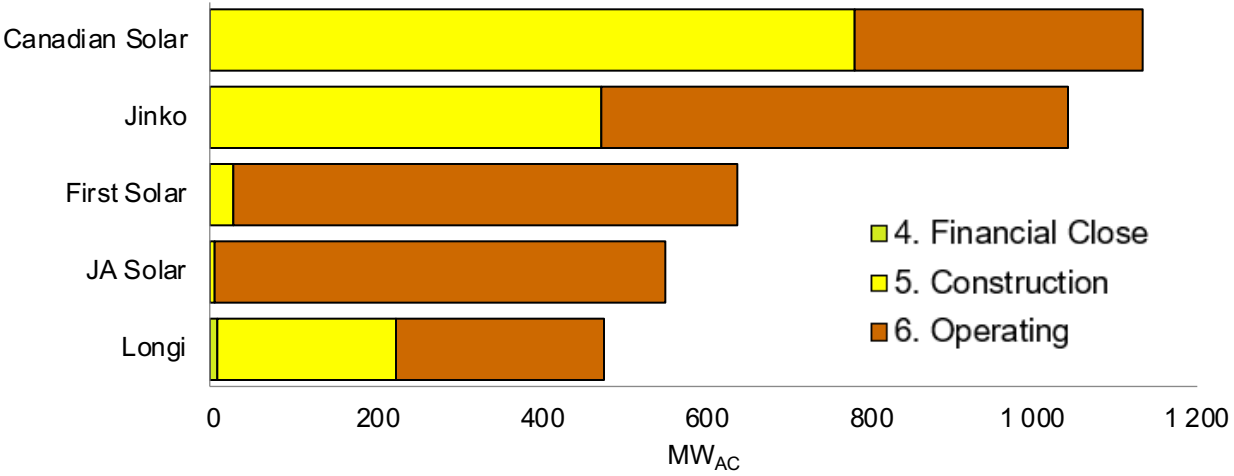
Source: Rystad Energy RenewableCube

Utility PV Developers & OEMs – Competition or concentration characterises the key stakeholders

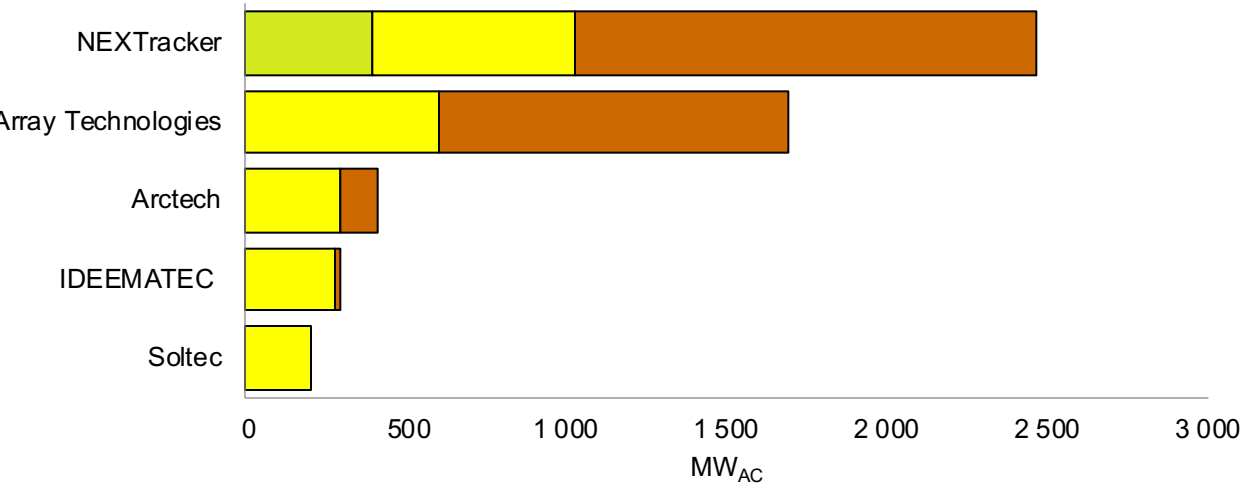
Top 5 Utility PV Developers



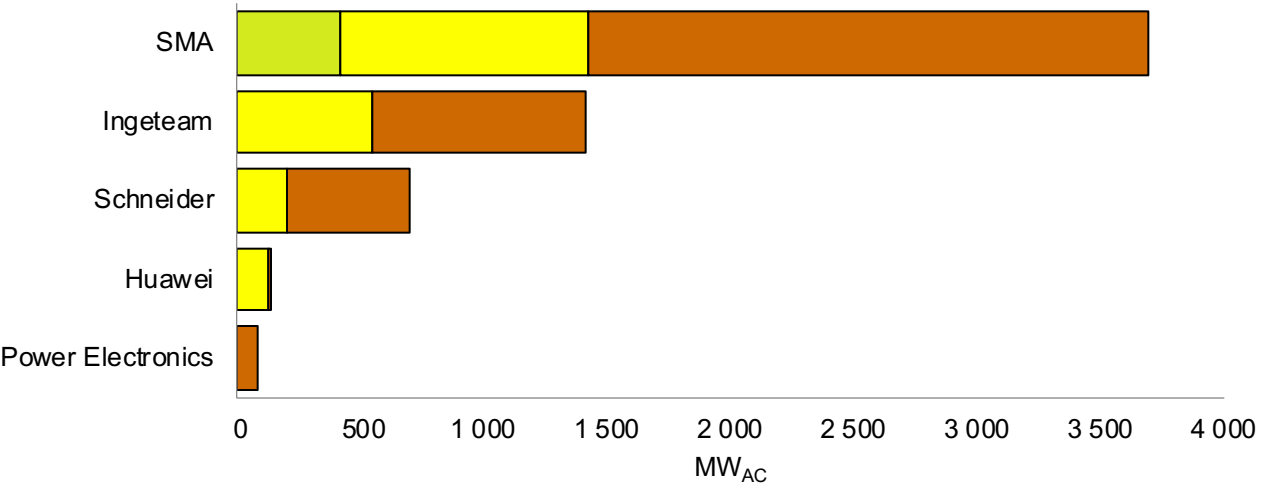
Top 5 Panel Suppliers



Top 5 Tracker Suppliers

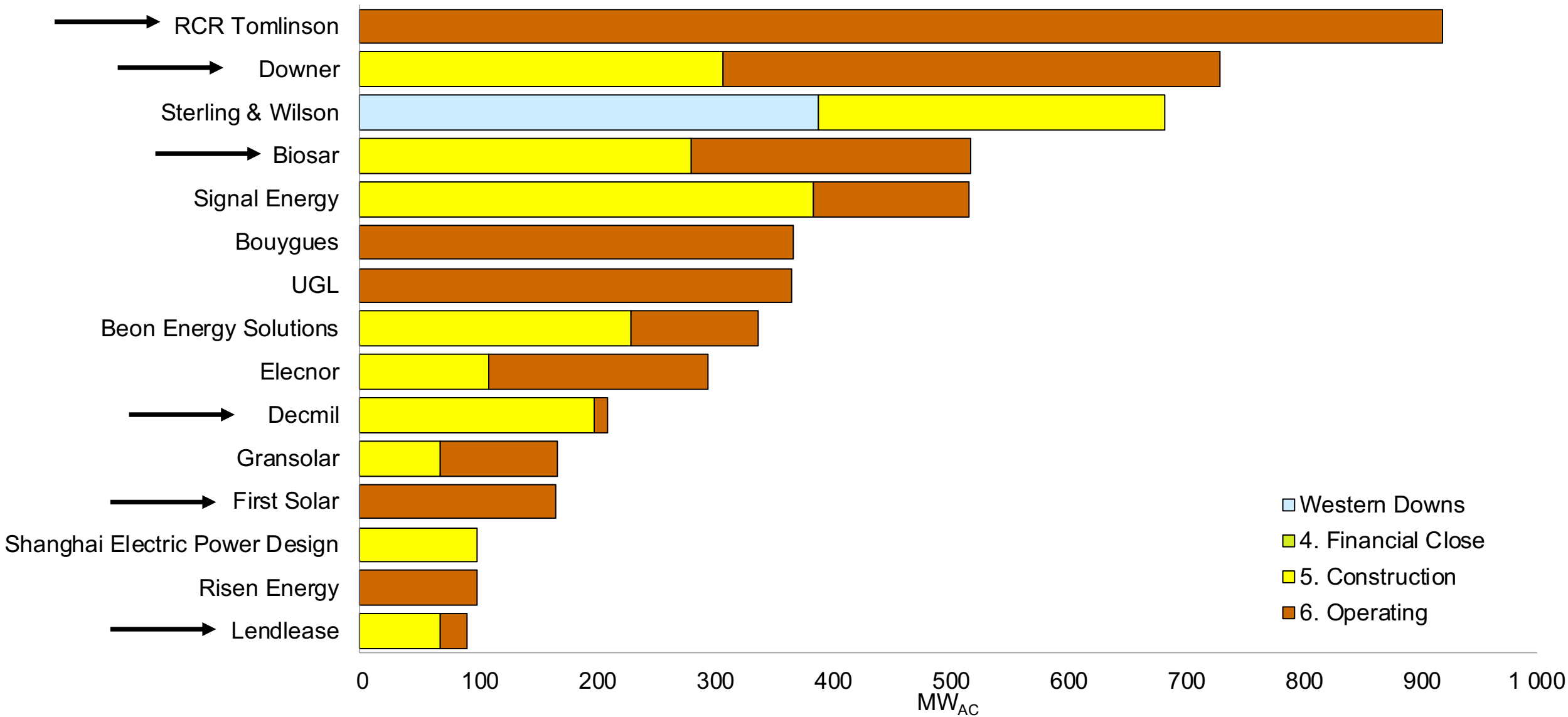


Top 5 Inverter Suppliers



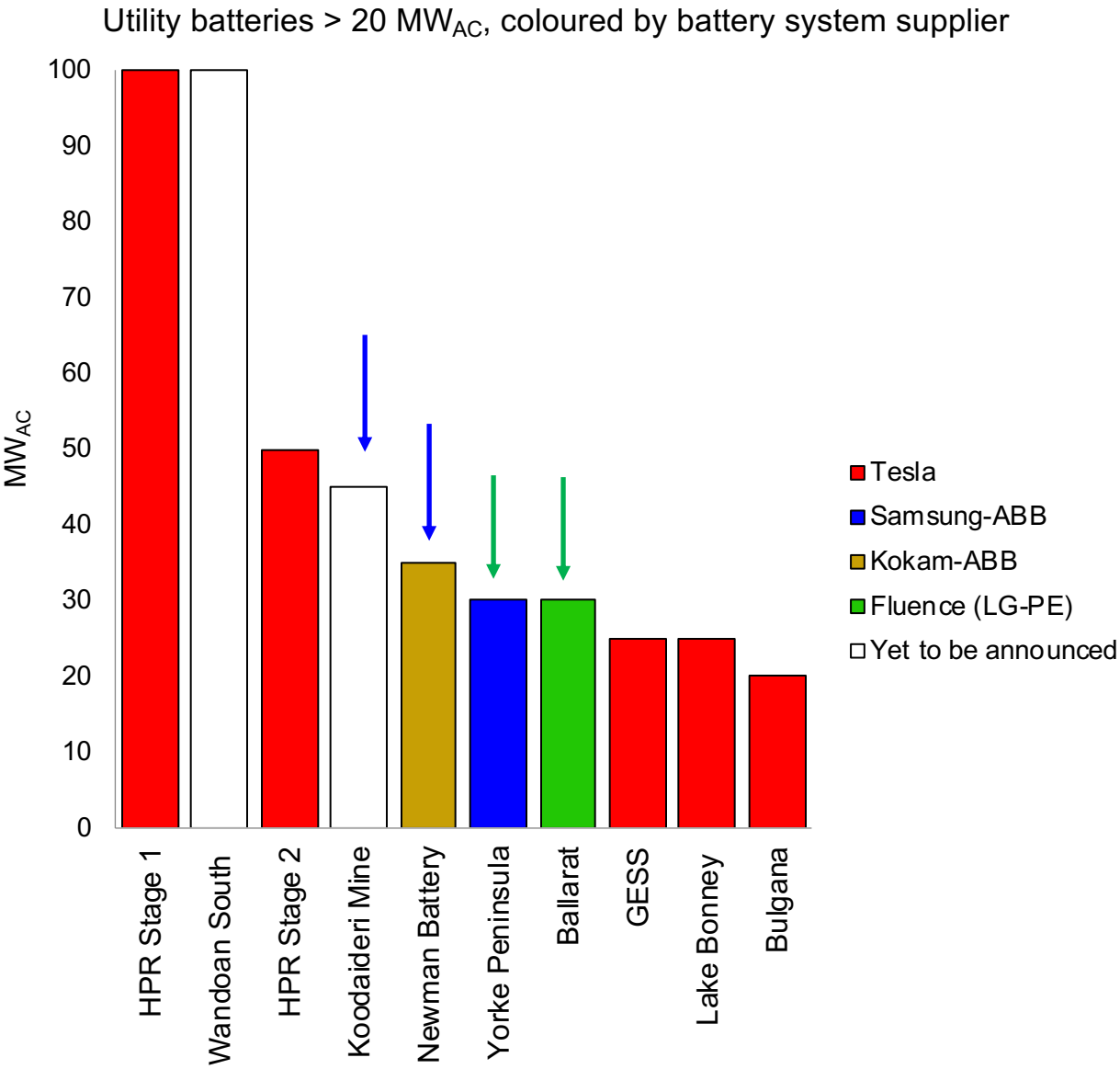
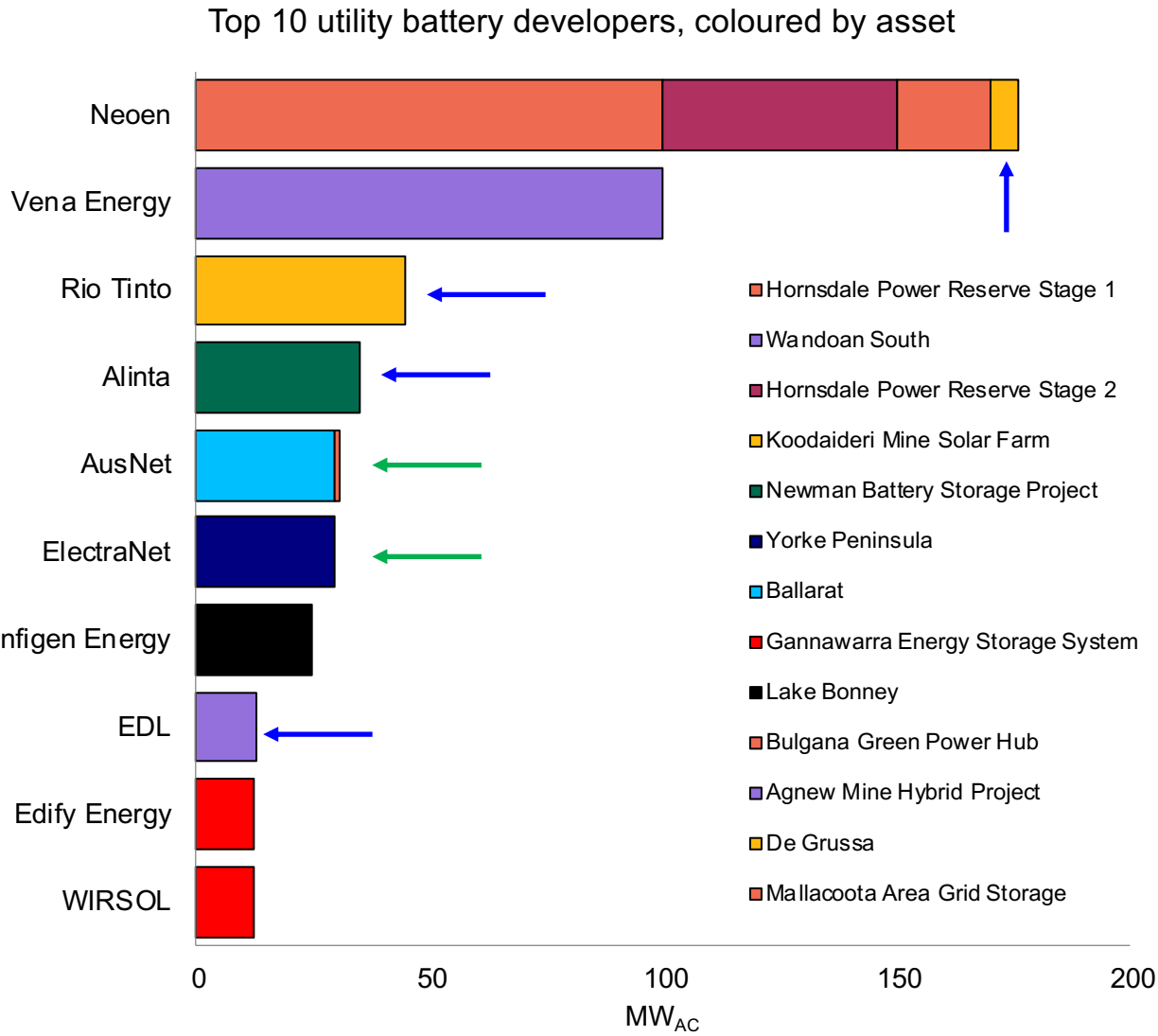
Source: Rystad Energy RenewableCube

Utility PV EPCs



Source: Rystad Energy RenewableCube

Australia utility battery developers



Source: Rystad Energy RenewableCube

Key Drivers / Challenges

Key Drivers: Utility PV

- a) Continued cost reductions
- b) **Module and inverter technology advancing rapidly**

Challenges: Utility PV

- a) Saturation effect -> reduced wholesale prices
- b) **Grid: Network capacity / MLFs / system strength**
- c) Harder to find offtake

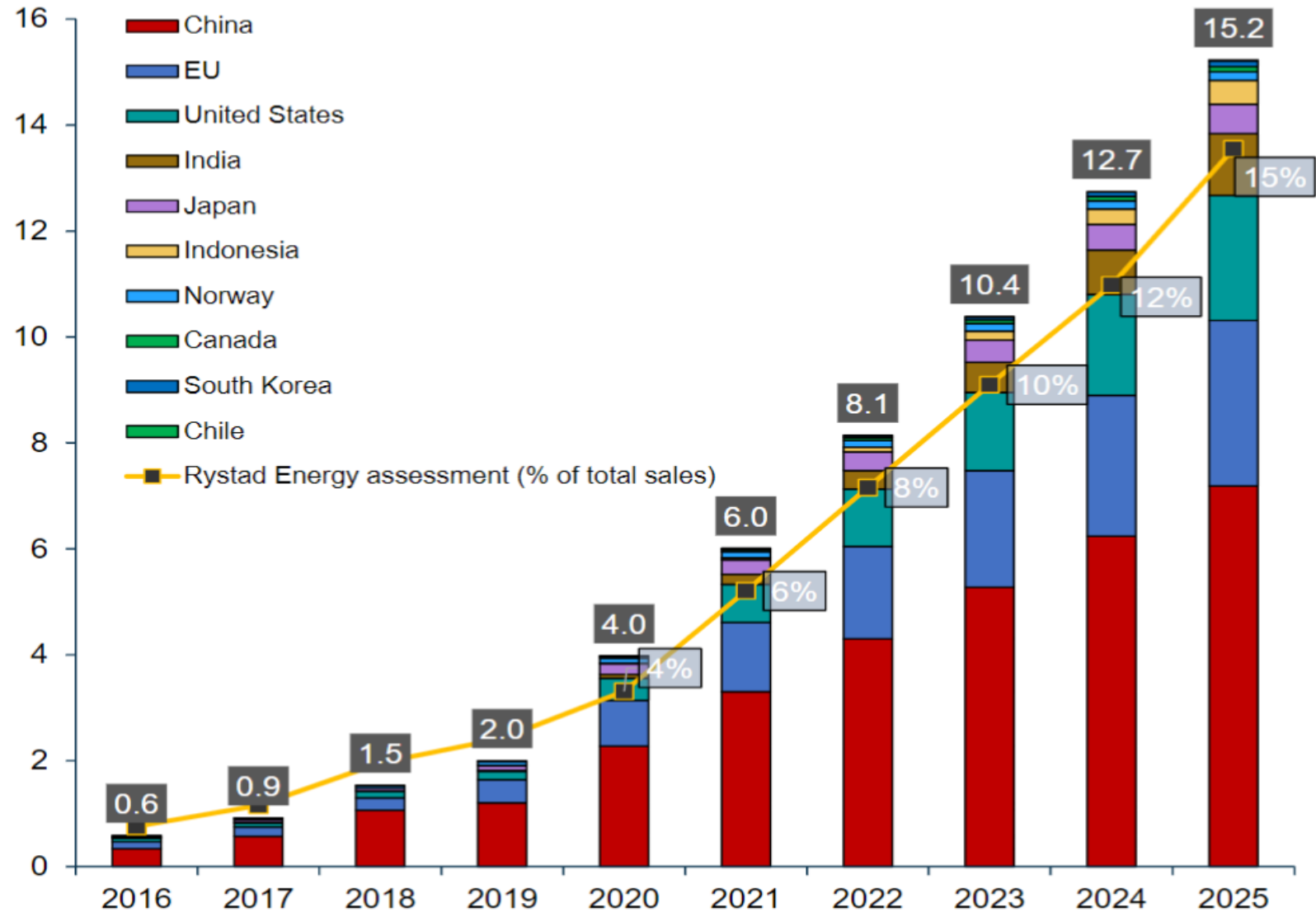
Key Drivers: Batteries

- a) Economics already favourable in off-grid market.
- b) **Government programs / Grants: NSW, VIC, ACT, ARENA**
- c) 5 minute settlement rule
- d) **Battery cost reductions**
- e) System security

Challenges: Batteries

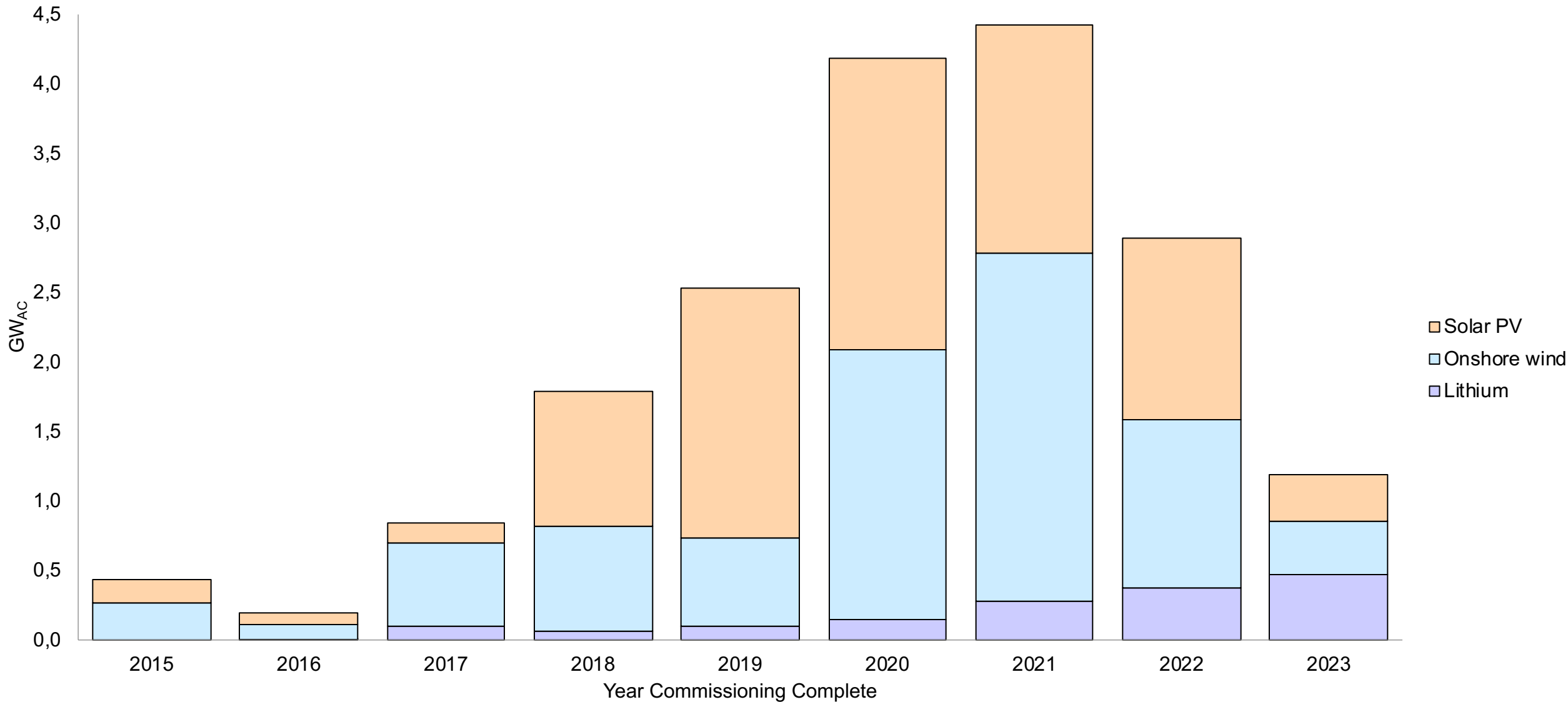
- a) **FCAS: Small market, uncertain revenue**
- b) Arbitrage too expensive, uncertain revenue
- c) Not all services valued, e.g. inertia, FFR
- d) Security services typically monetised through regulated TNSPs, e.g. SIPS

Global EV sales targets
Million vehicle sales per year



Source: Rystad Energy research and analysis, Transgrid 2020 Annual Transmission Planning Report

Short term forecast: Utility PV, wind and storage



Source: Rystad Energy RenewableCube



RYSTAD ENERGY

Rystad Energy is an independent energy consulting services and business intelligence data firm offering global databases, strategy advisory and research products for energy companies and suppliers, investors, investment banks, organizations, and governments. Rystad Energy's headquarters are located in Oslo, Norway.

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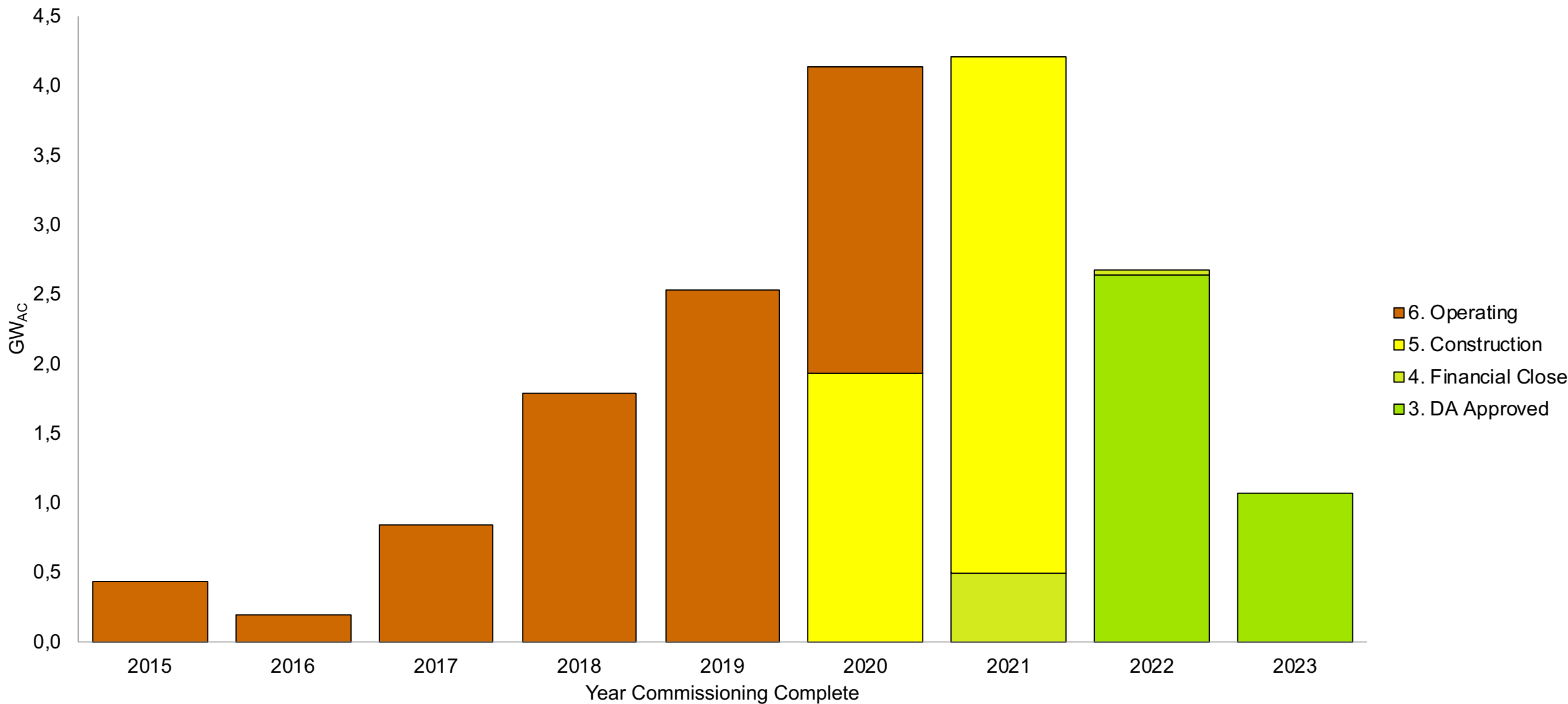
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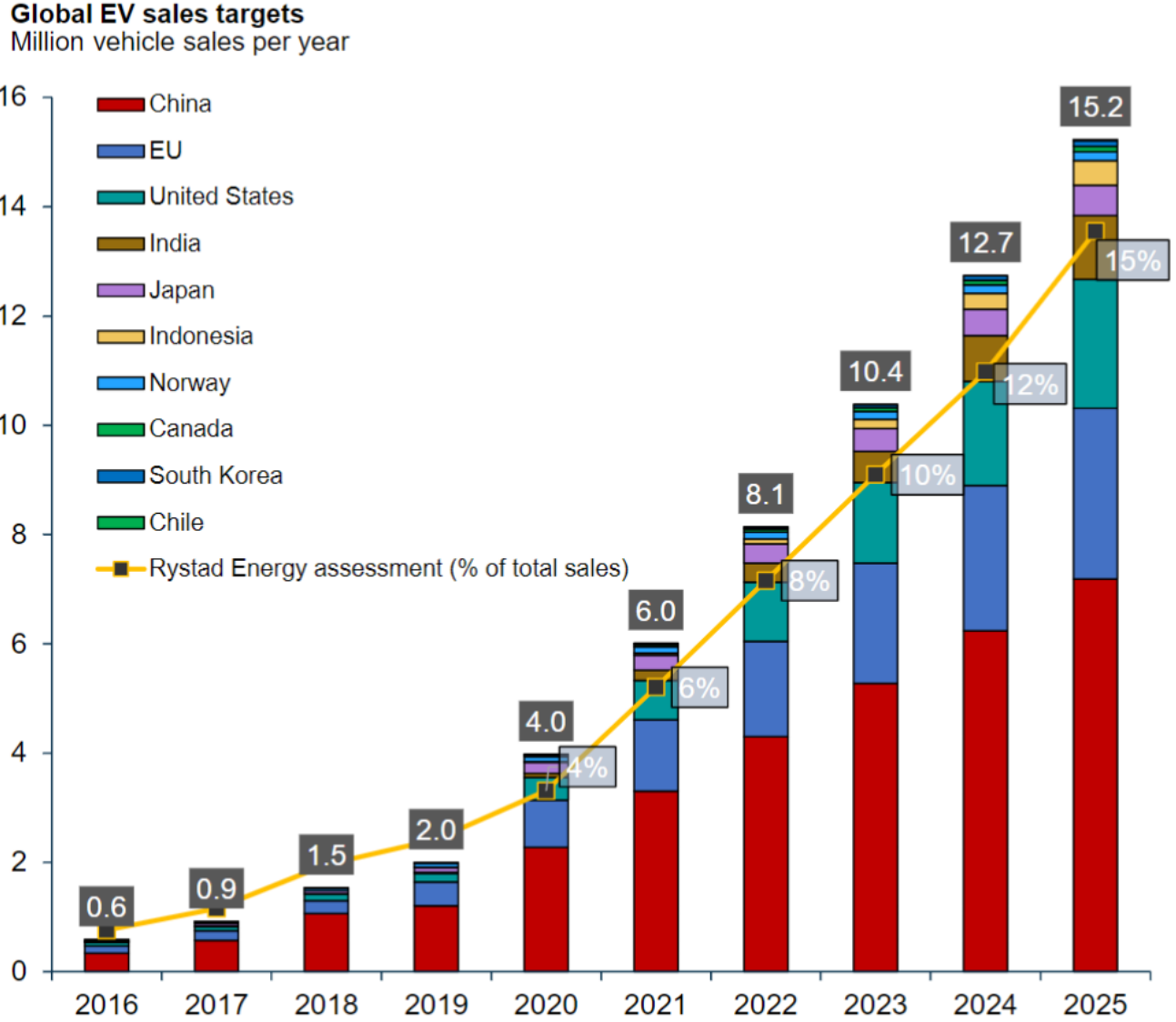
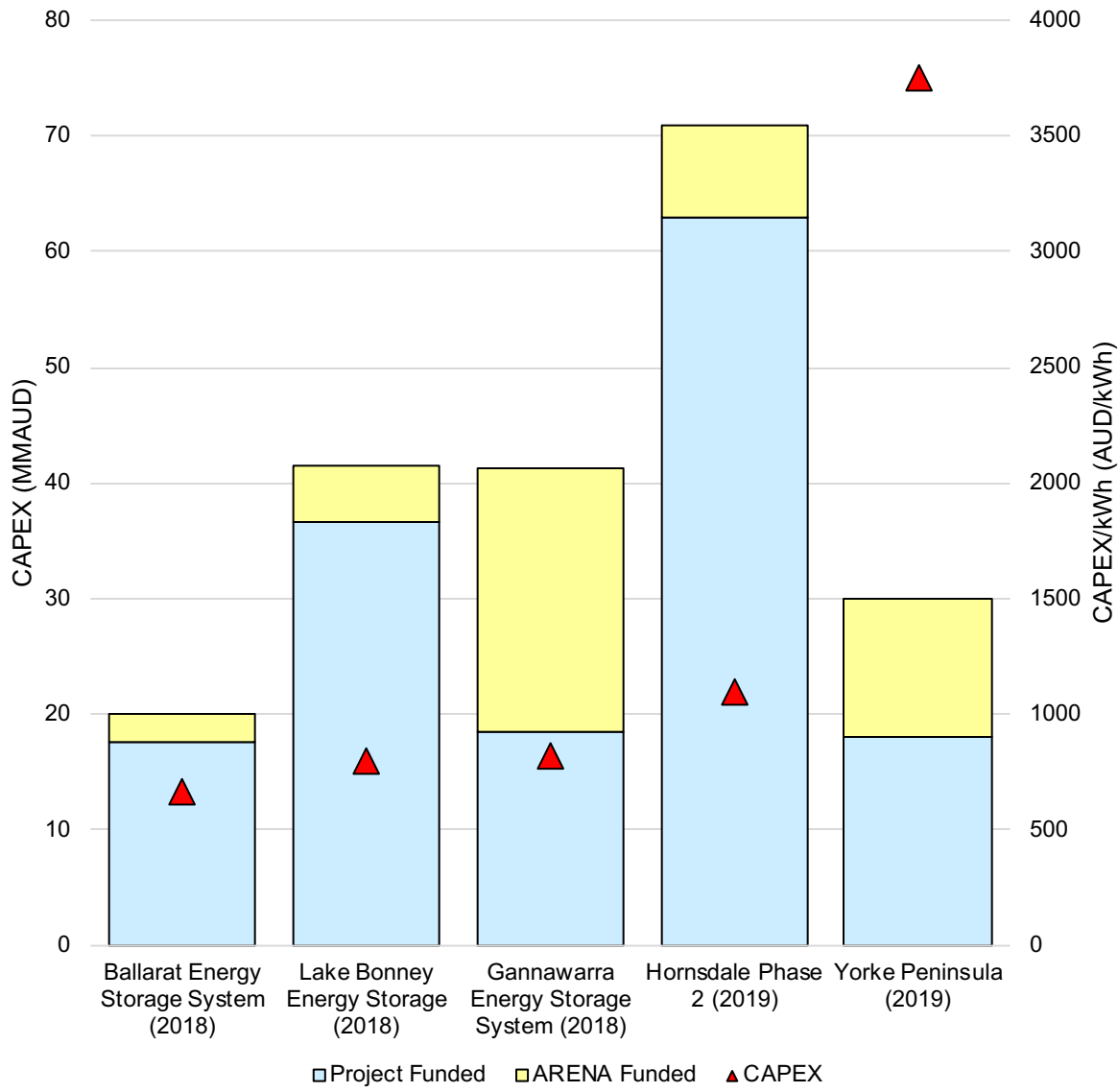


Short Term Forecast: Utility PV, wind and storage



Source: Rystad Energy RenewableCube

Key Drivers / Challenges



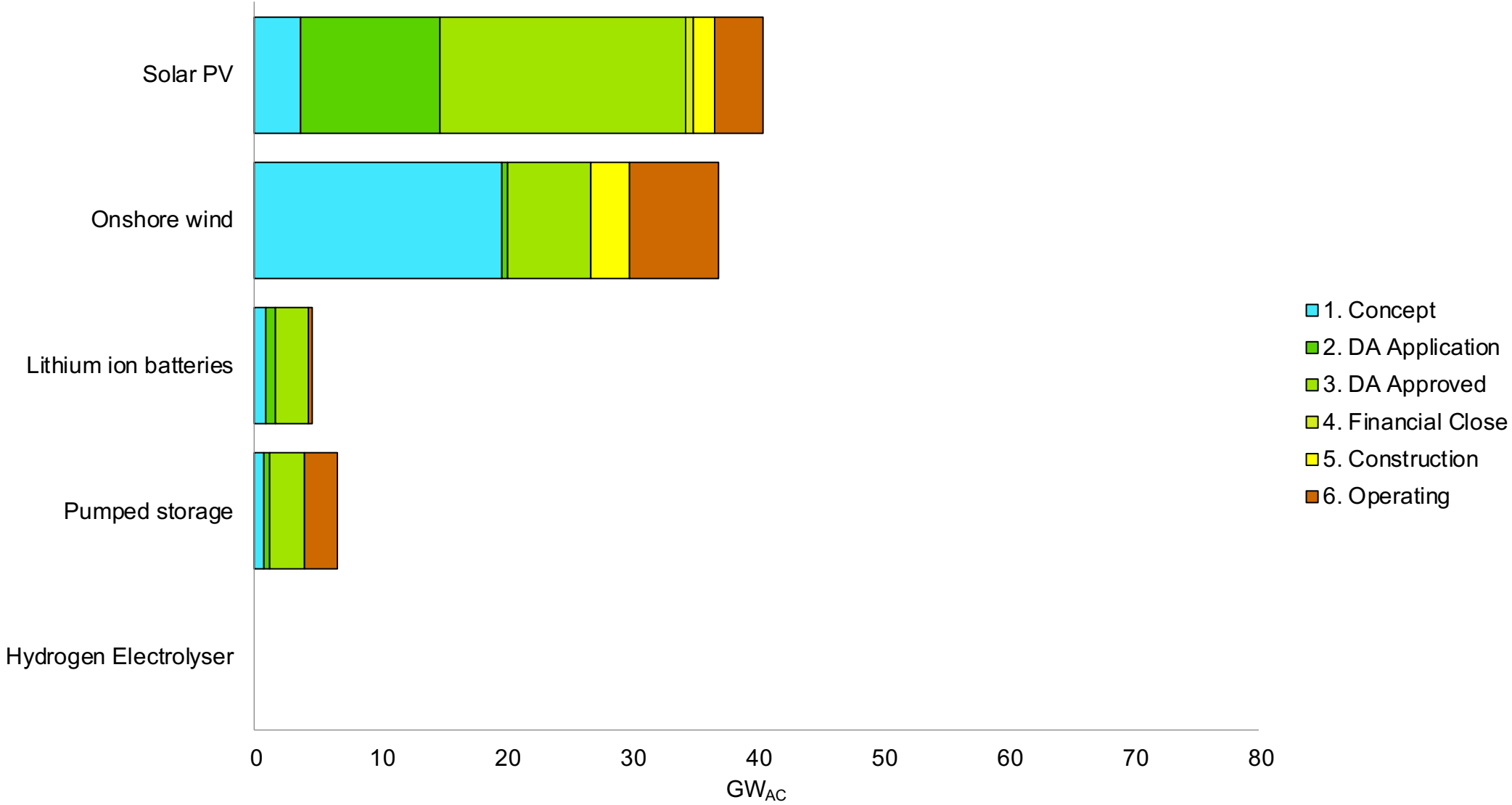
Source: Rystad Energy research and analysis

Australia utility PV, wind and storage pipeline: 1/1/2019

88.5 GW_{AC}

544 Assets

~1/10 projects reach Financial Close



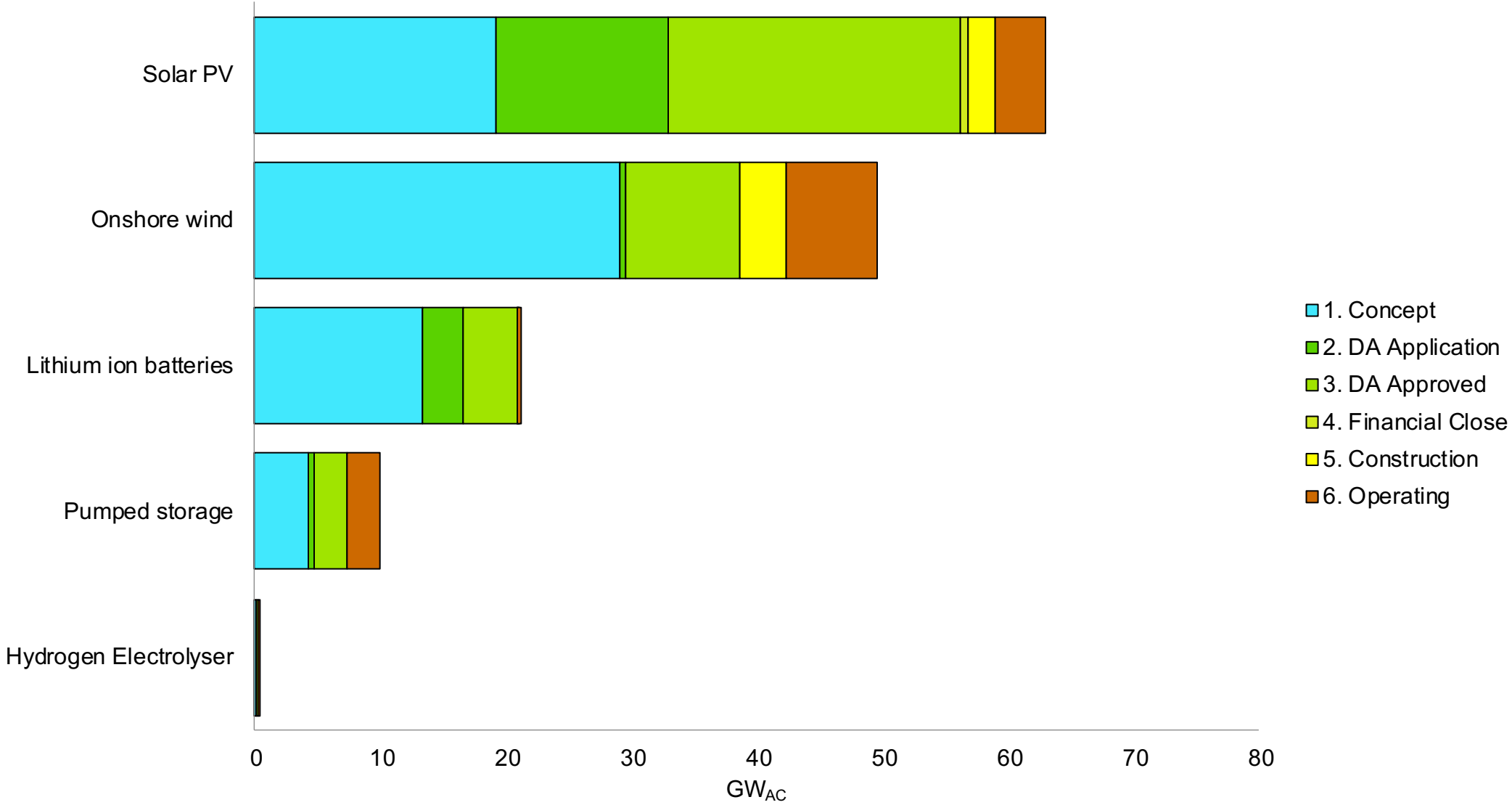
Source: Rystad Energy RenewableCube

Australia utility PV, wind and storage pipeline: 1/1/2020

144 GW_{AC}

798 Assets

~1/10 projects reach Financial Close



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Key Drivers / Challenges

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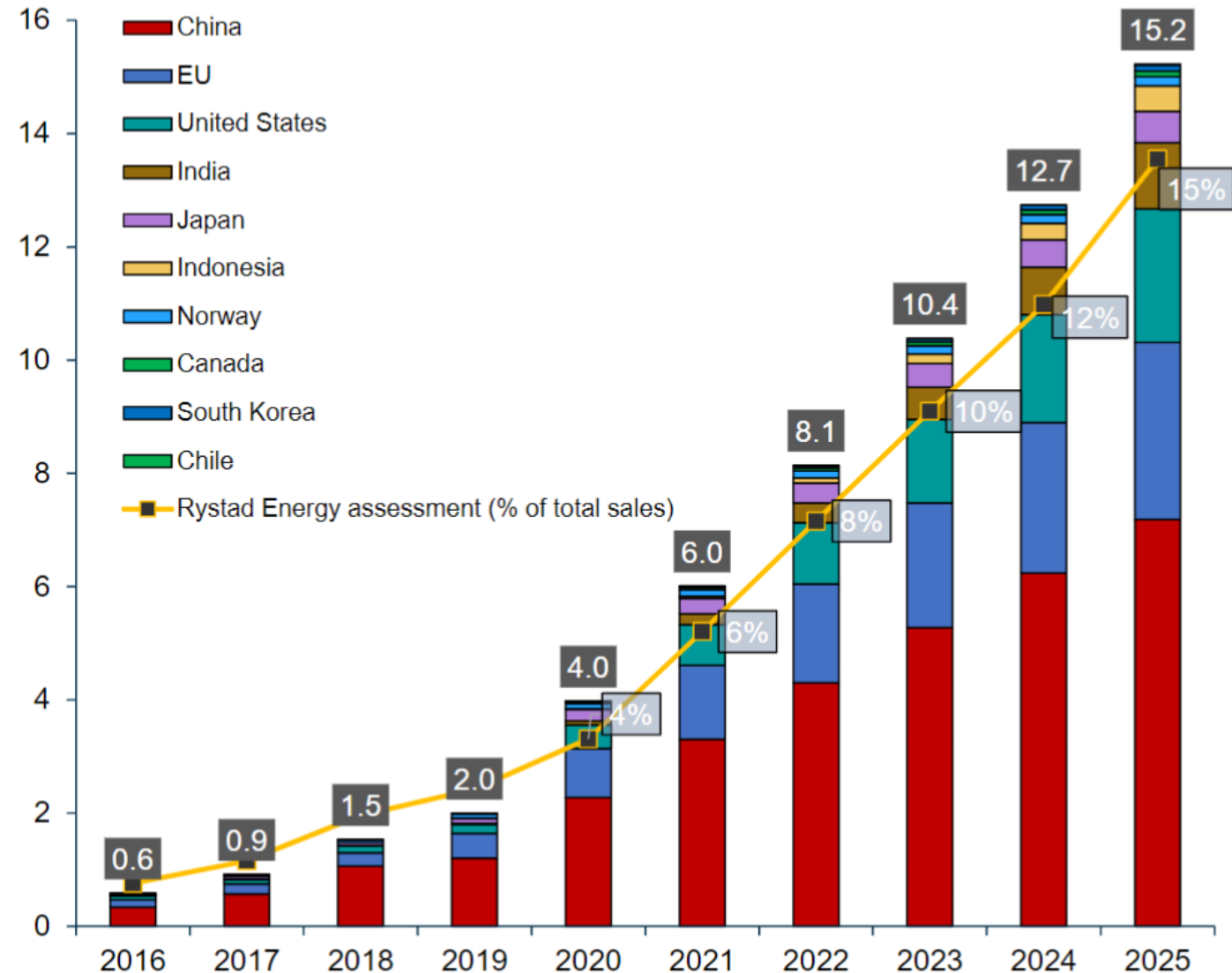
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