

# RENEWED ENERGY IN ASIA'S UPSTREAM

Gero Farruggio

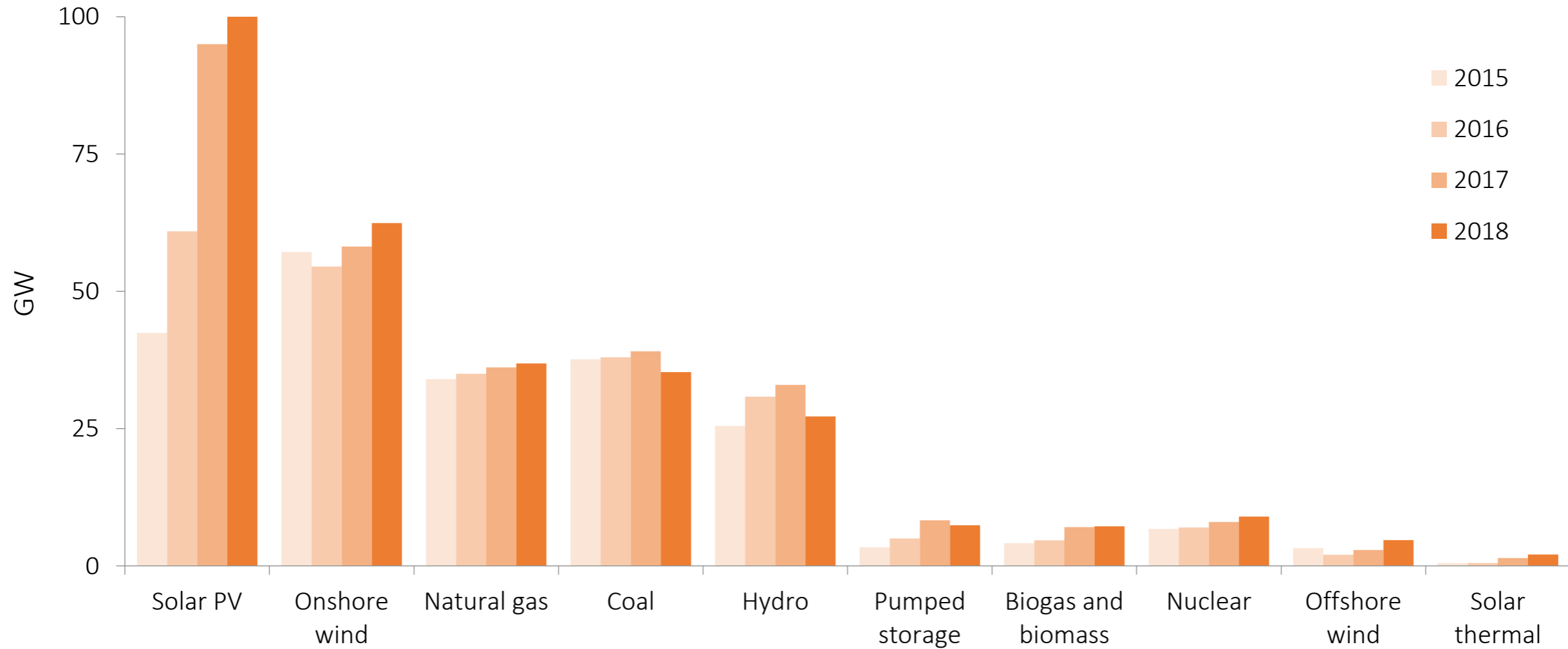
Booth #263

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# SOLAR PV - SPARKS JOY!

GLOBAL NEW GENERATION PER YEAR 2015-2018



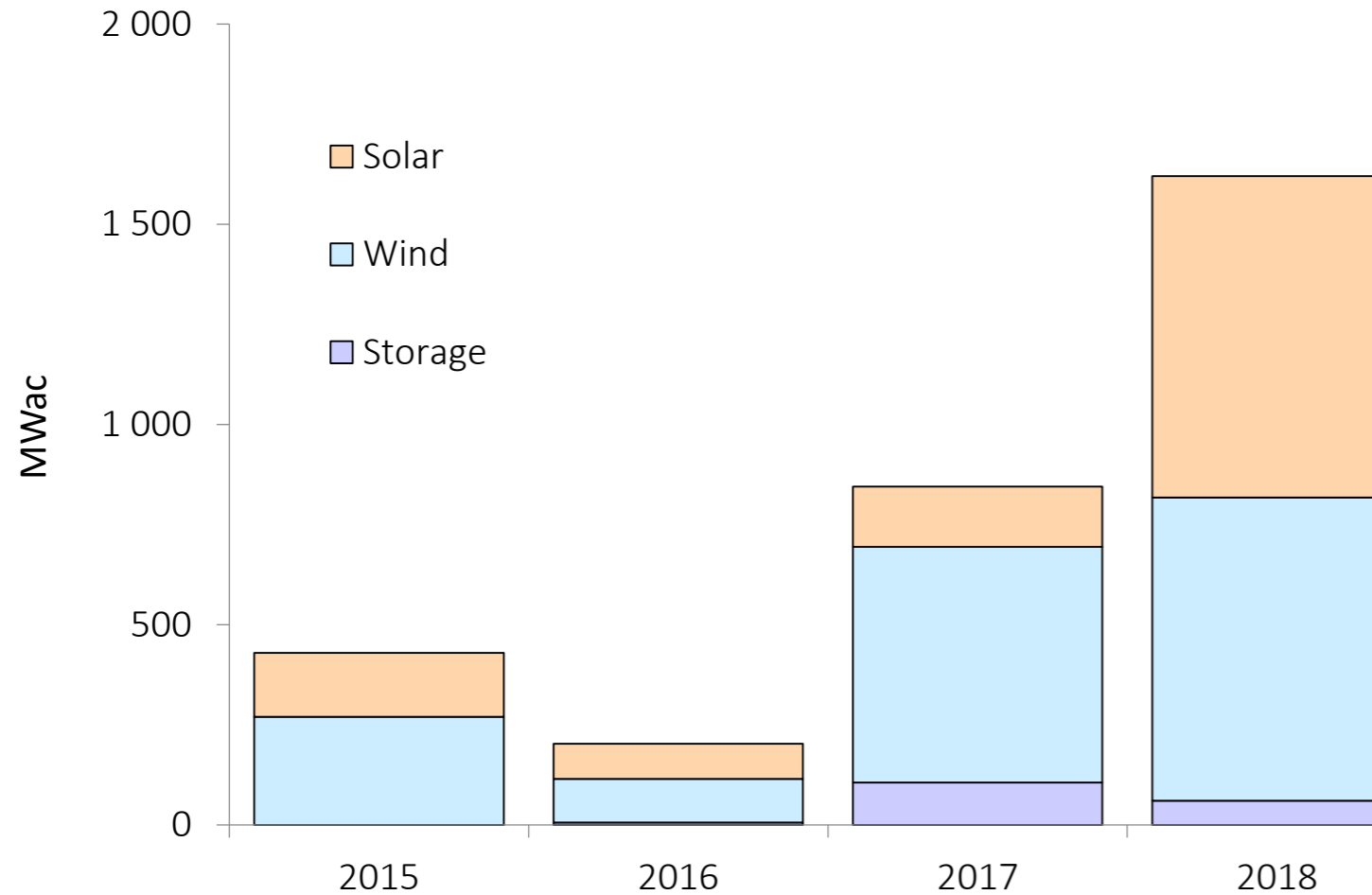
Source: Rystad Energy PowerCube



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# AUSTRALIA TRANSFORMS FROM MW TO GW UTILITY MARKET

RENEWABLES INSTALLED BY ENERGY GROUP



Source: Rystad Energy RenewableCube

**2018** 1.5 GW commissioned

GW First GW year

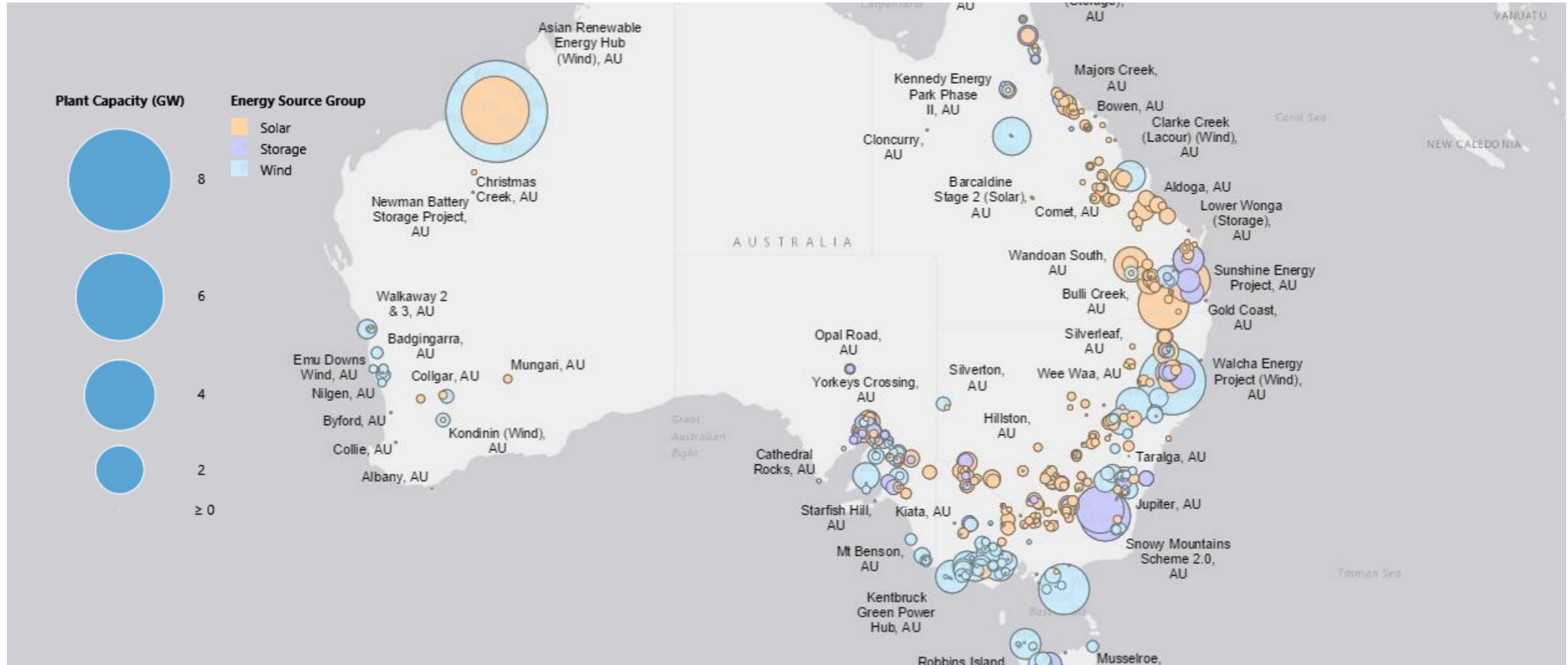
**Solar** Eclipsed wind capacity installed



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# 105GW OF SOLAR, WIND & STORAGE IN THE PIPELINE

RENEWABLES BY ENERGY TYPE (GW)



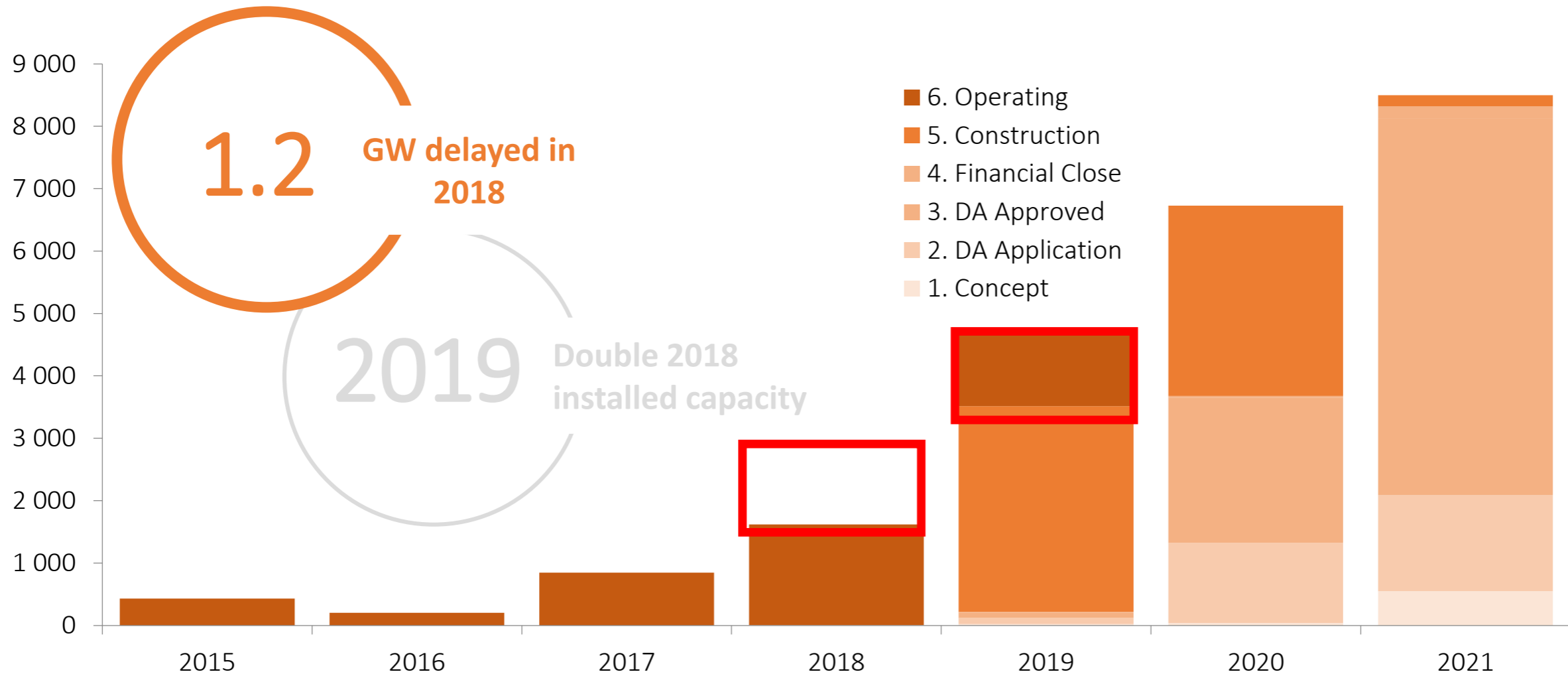
Source: Rystad Energy RenewableCube



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# THE SOLAR-COASTER

RENEWABLES INSTALLED BY DEVELOPMENT STATUS



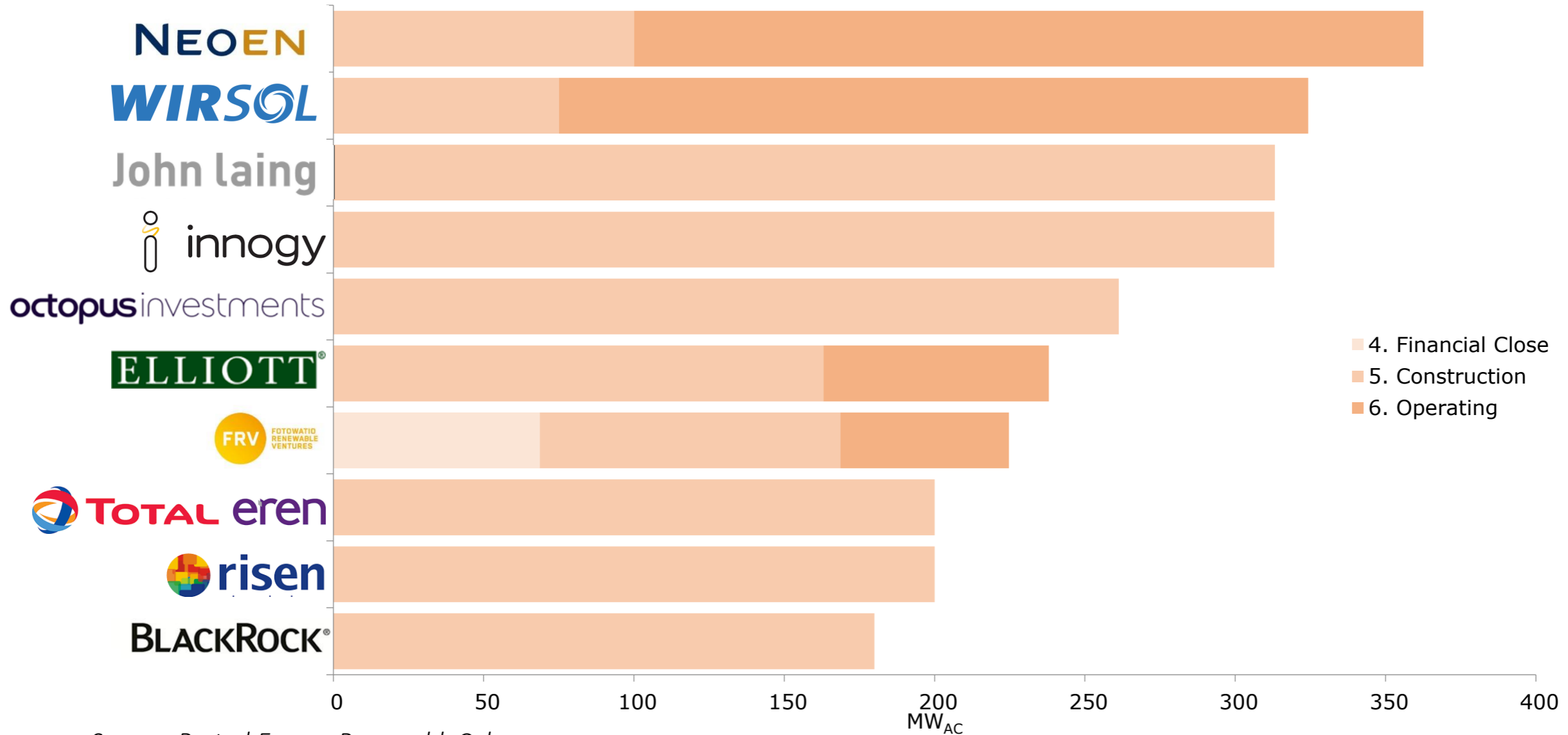
Source: Rystad Energy RenewableCube



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# THE SOLAR 'MAJORS' – DEVELOPERS & FINANCIALS

TOP 10 PROJECT DEVELOPERS BY EQUITY AND CAPACITY



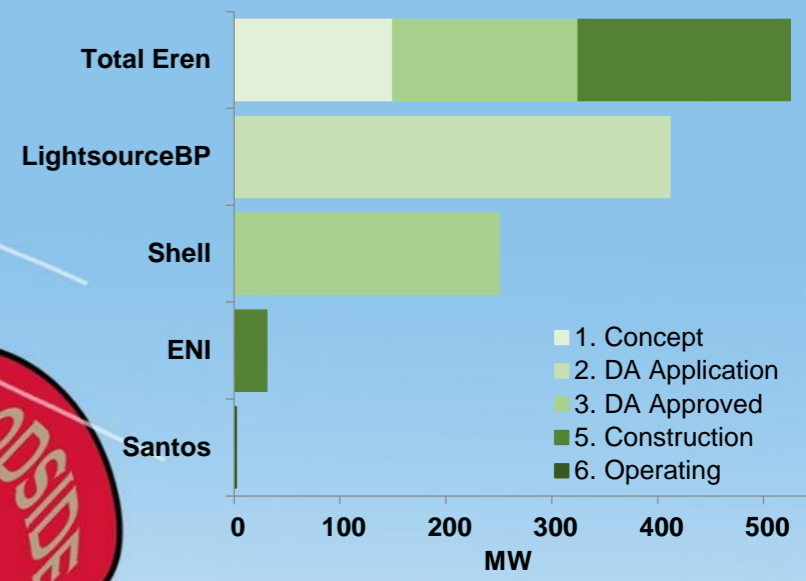
Source: Rystad Energy RenewableCube



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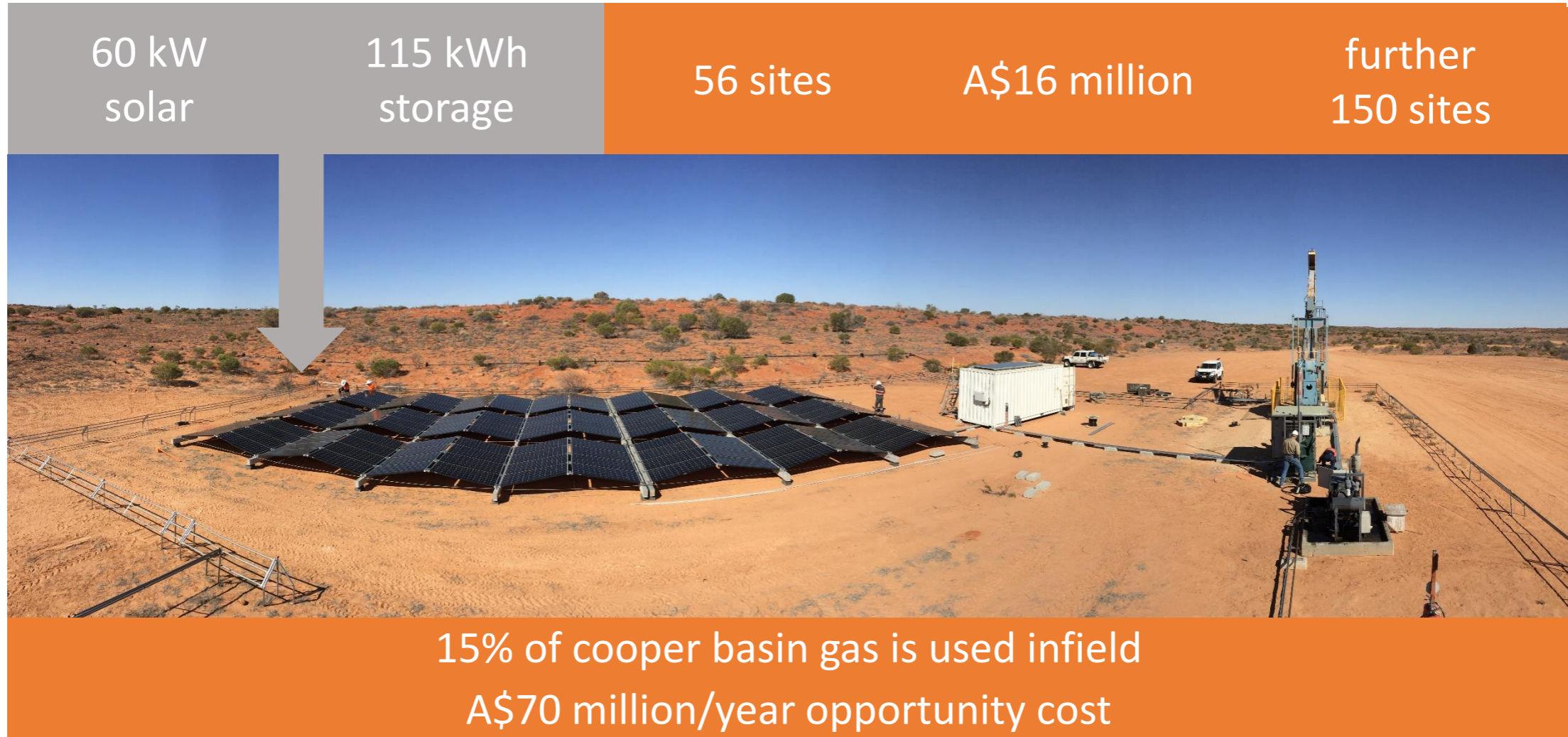


**SOLAR COASTER**



# SANTOS TAPS INTO COOPER BASIN SOLAR RESERVE

HOBBES-1 IS PART OF A 56 WELL SOLAR (3.2MW) AND STORAGE ROLLOUT, REPLACING DIESEL MOTORS



Source: Rystad Energy UCube



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# ASIAN RENEWABLE HUB

'OIL AND GAS' SCALE PROJECT

11 GW

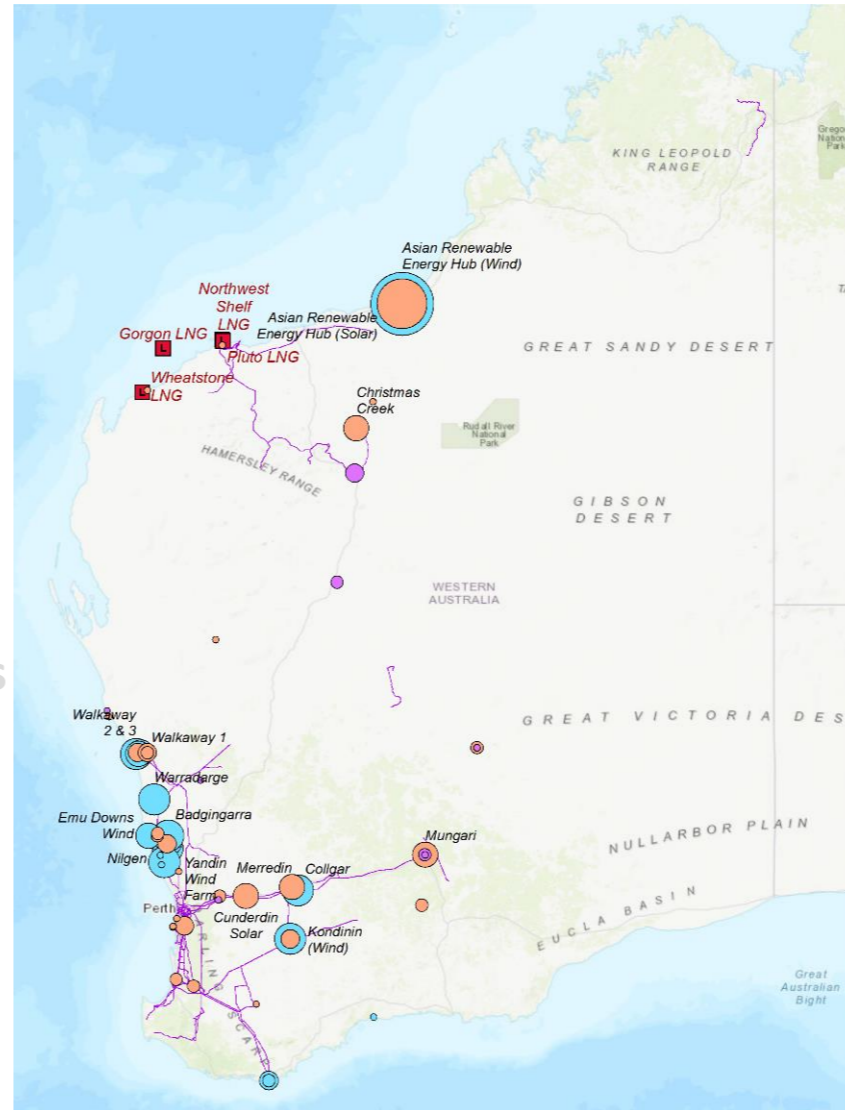
3.5 GW Solar &  
7.5 GW Wind

FID  
2022

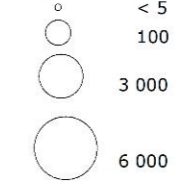
Planning &  
environmental  
approvals in process

3 GW

Reserved for the Pilbara,  
remainder for Hydrogen exports



Plant capacity year installed  
(MW)



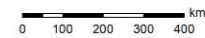
Energy source

- Solar
- Storage
- Wind

LNG liquefaction facilities



Electricity transmission lines



Source: Rystad Energy RenewableCube



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# OFFSHORE WIND: OPPORTUNITY PRESENTS SCALE

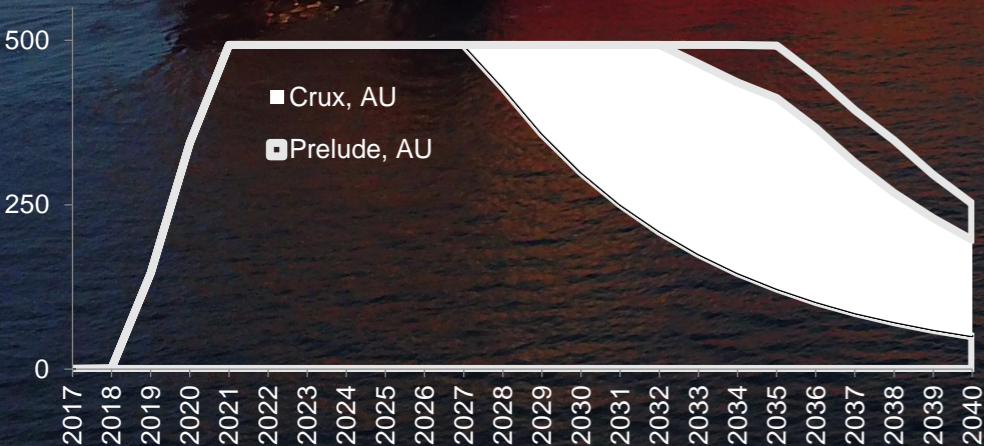
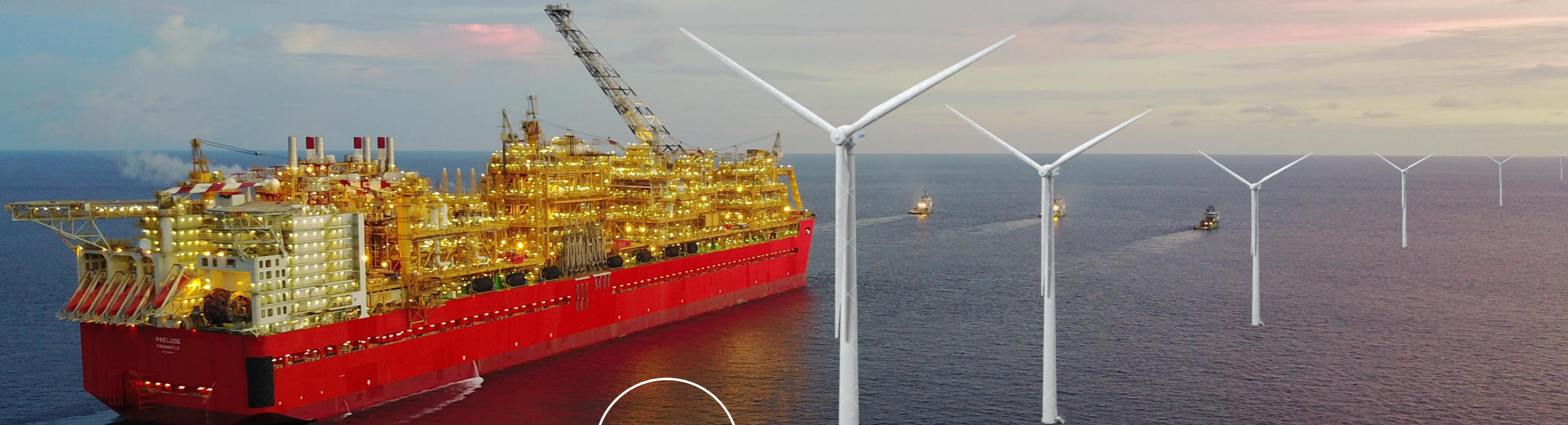
12 MW TURBINE SITS 260 METRES HIGH WITH A 220 METRE ROTOR DIAMETER



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# OFFSHORE WIND EXAMPLE: PRELUDE

OFFSHORE WIND TURBINES REPLACING INFIELD GAS USE



Crux  
US\$3.bn

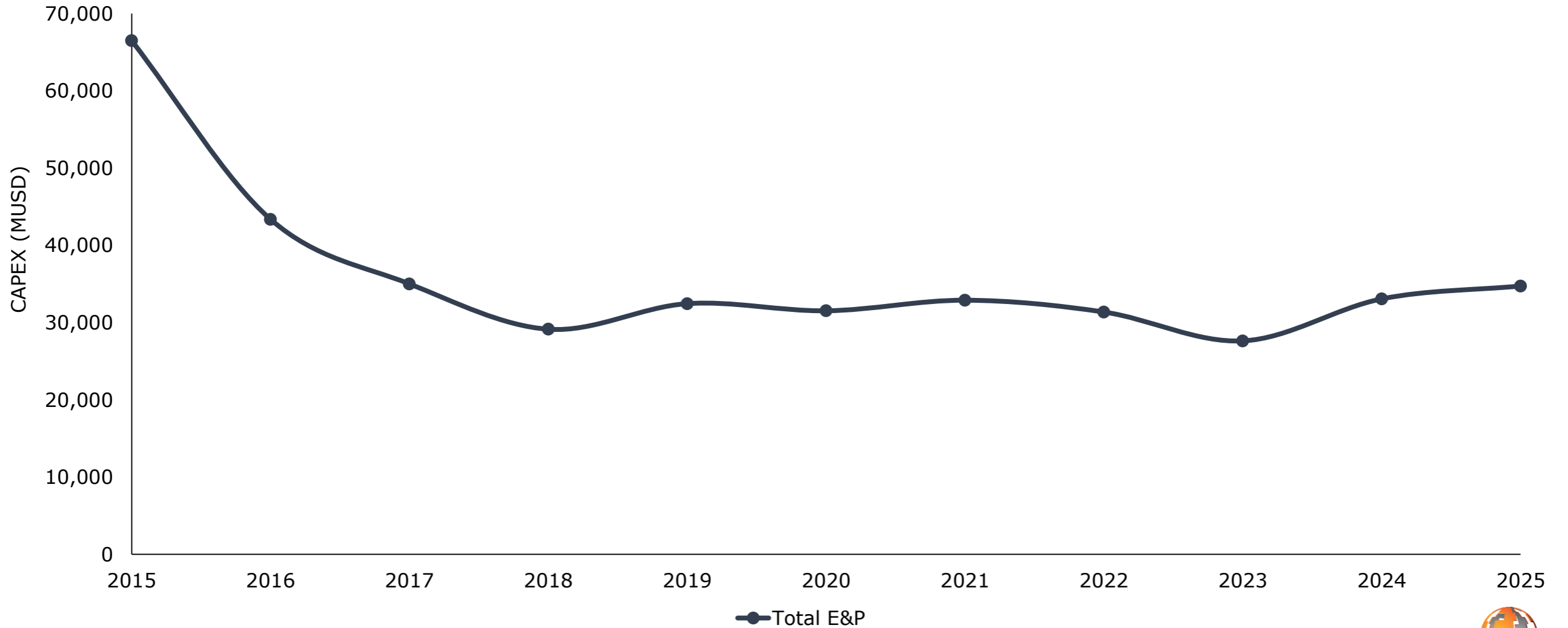
Source: Rystad Energy UCube



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# REGIONAL UPSTREAM CAPEX TO PLATEAU

UPSTREAM VS RENEWABLES CAPITAL INVESTMENT (MUSD) IN APAC (EX CHINA, INCLUDING INDIA)



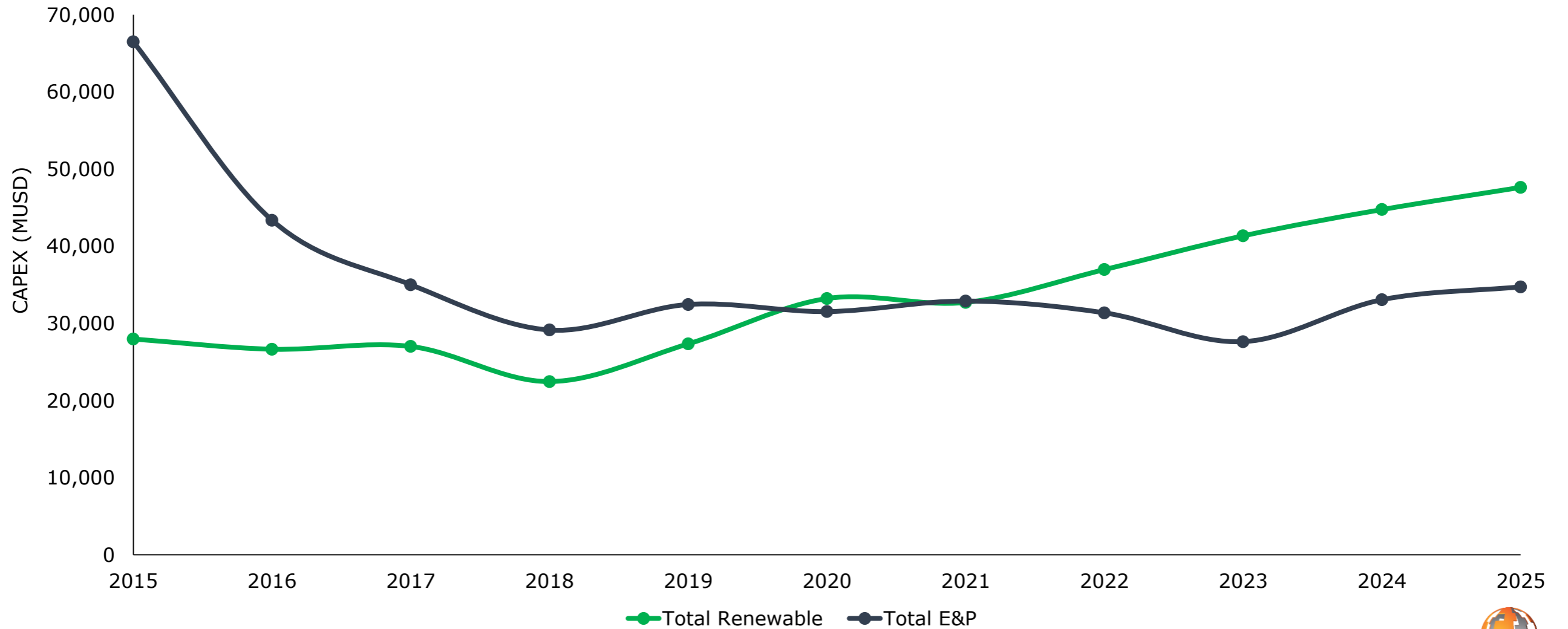
Source: Rystad Energy UCube



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# REGIONAL RENEWABLES CAPEX TO OVERTAKE UPSTREAM NEXT YEAR

UPSTREAM VS RENEWABLES CAPITAL INVESTMENT (MUSD) IN APAC (EX CHINA, INCLUDING INDIA)



Source: Rystad Energy RenewableCube/UCube



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## SUMMARY



### Upstream companies will become solar majors in Australia

Total & Santos under construction, with BP, Shell & Eni ground breaking imminent  
Upstream solar pipeline is 1GW, with 150 MW storage



### Reducing or eliminating infield gas use is a key driver

Increasing supply to the gas starved East Coast market & LNG projects  
Falling solar and storage costs will only increase the appeal



### Renewables opportunities present oil & gas scale

AREH being the largest, well positioned to supply the Pilbara energy users  
Opportunity to tap into Hydrogen  
Investment will exceed E&P capex next year in APAC



### Floating offshore wind is the frontline for E&P companies:

Europe is leading the way  
Australian E&P players & offshore service sector are well positioned to gain



## Rystad Energy

**Rystad Energy:** Independent energy consulting and business intelligence data firm established in 2004, headquartered in Oslo with offices across the globe.

**Databases:** Covering energy fundamentals, upstream, oilfield services and renewable energy industries.

**Analytics:** Alongside the database suite we offer an extensive library of market reports, commentaries and fact sheets.

**Consulting:** A leading advisor on strategy, markets and business development within the energy space globally.

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## Office locations



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