New Solar Economics: Navigating Low Prices, Rising Costs & the Shift to Hybrid Thinking

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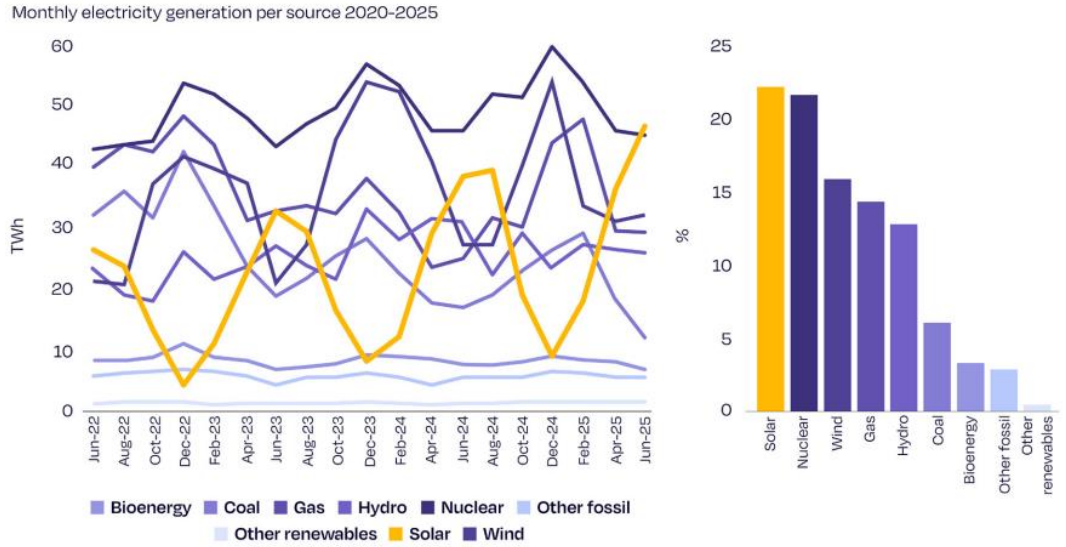
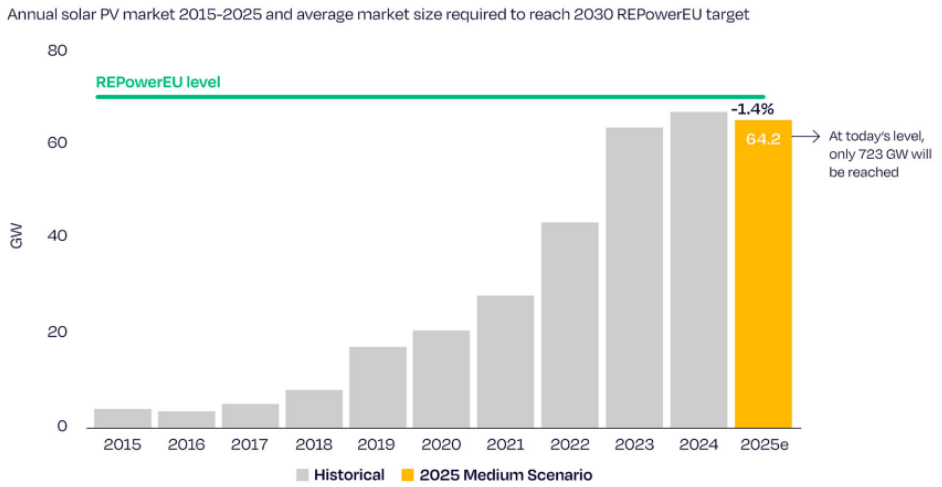
Solar as main technology – Yet Growth is slowing

- Solar takes over as Europe's main technology
- June 2025: the biggest electricity source in the EU (22,1% generation)
- Strong Solar Penetration across all European Markets

Solar Growth 2025:

- Medium Scenario => contracting to -1,4%
- High Scenario: only +1,1% growth
- Low Scenario : growth falls to -2,3%



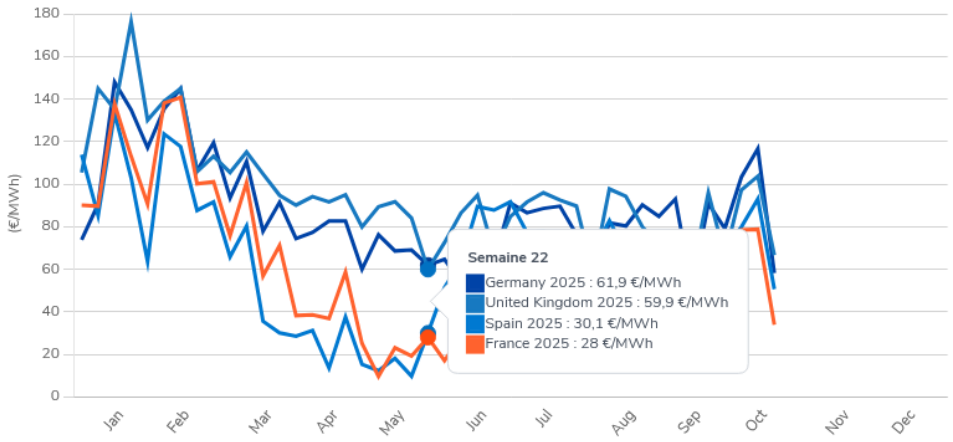


Low Wholesale Electricity prices and Cannibalisation

- Low wholesale electricity prices
- Price cannibalisation
- Grid Saturation => Curtailment
- Halt of insensitive schemes

Spot electricity prices in France and on European markets

Source : EPEX and OMIE's data



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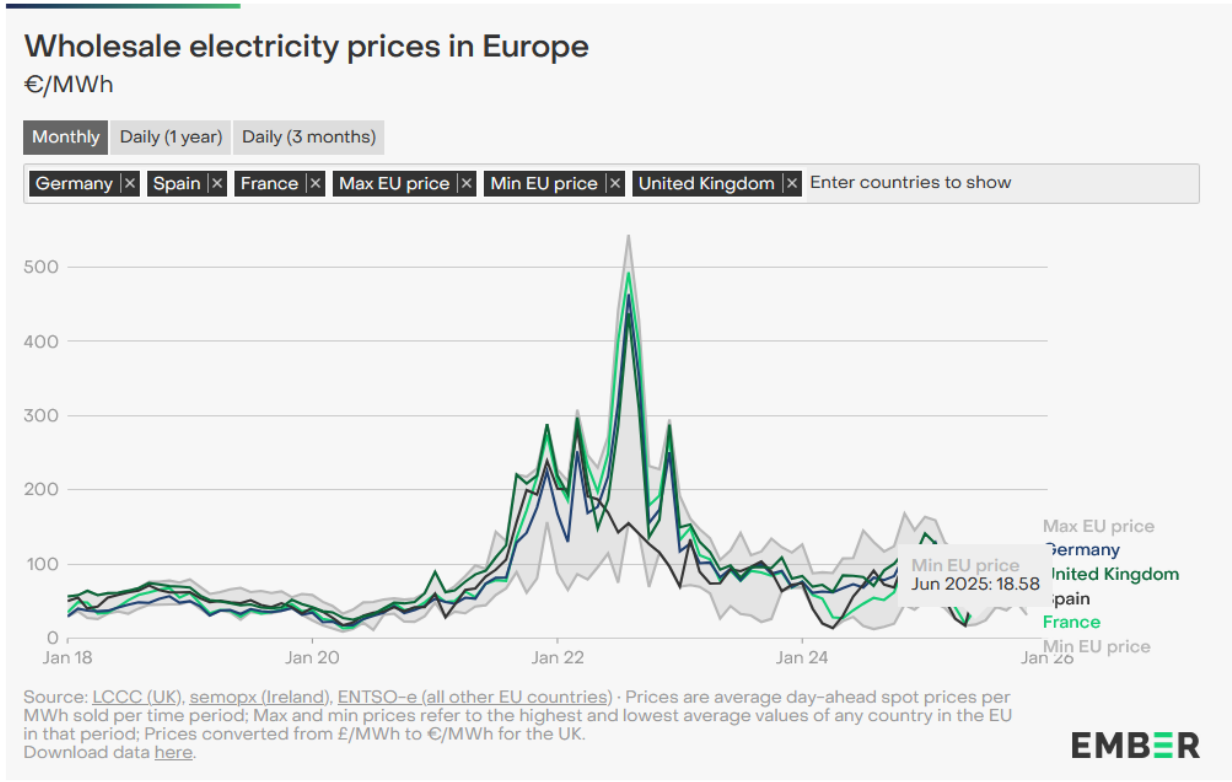
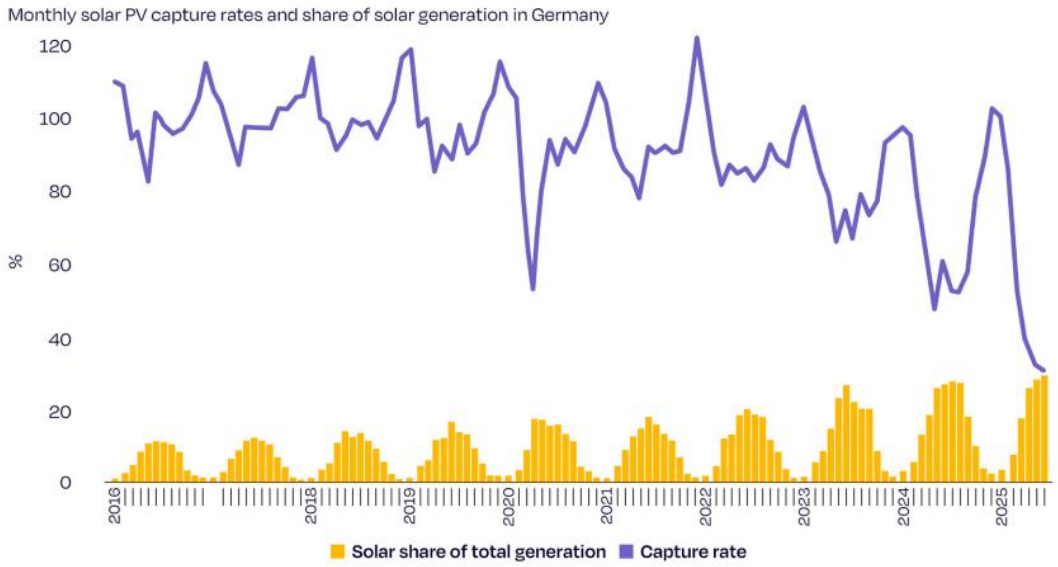
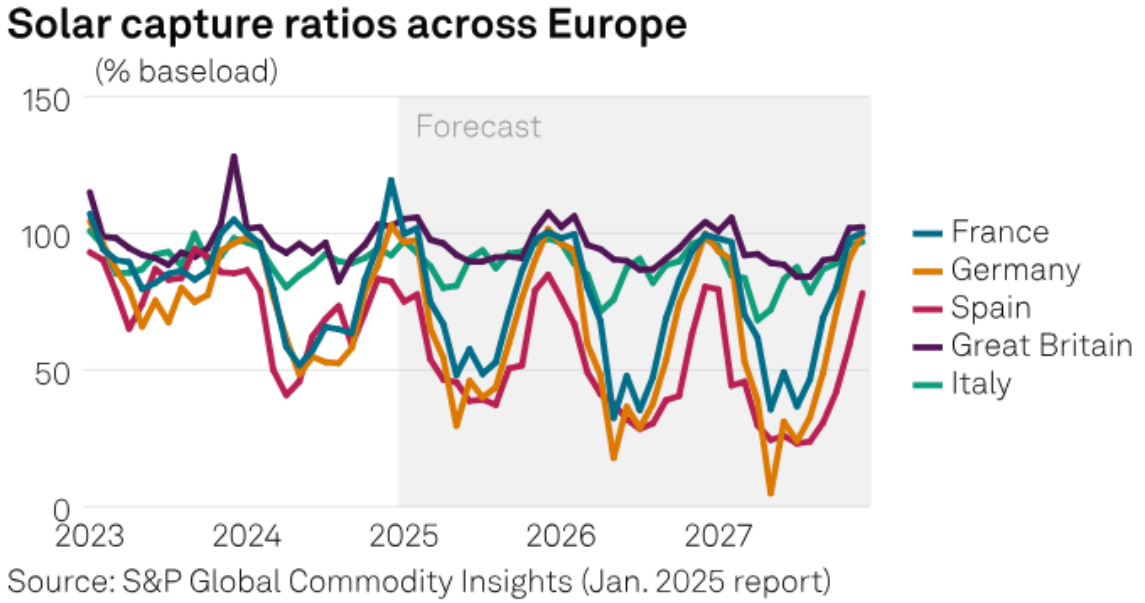


Low Solar Capture rates across Europe

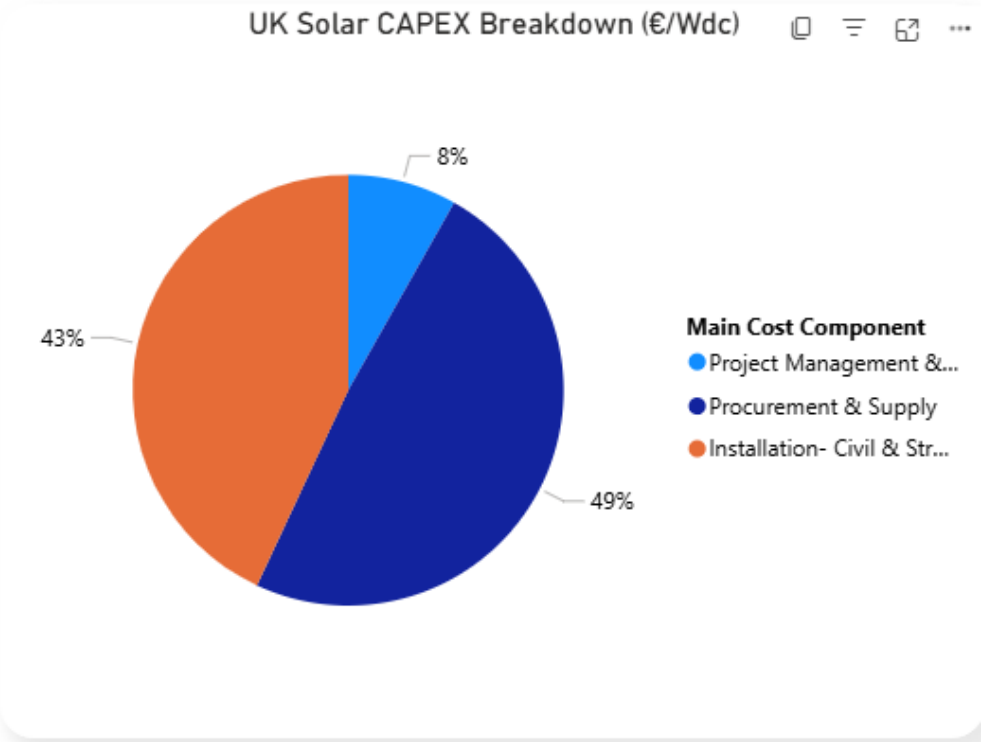
- Germany June 2025: solar represents 30% of monthly electricity generation for capture rates of 31%

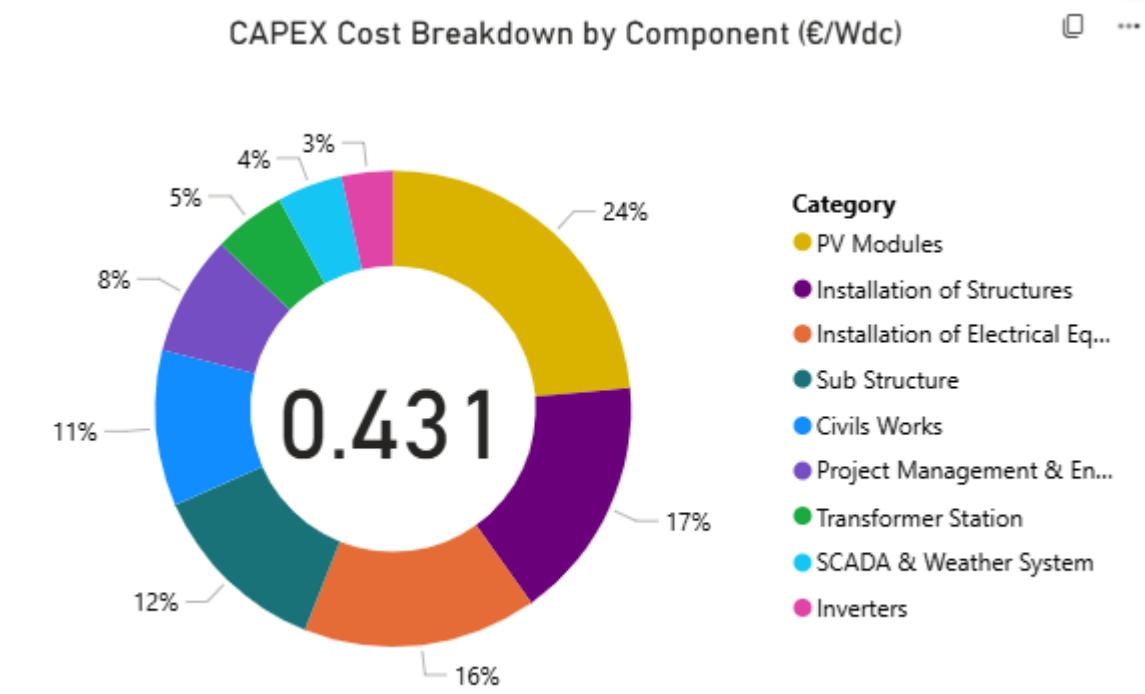




Source: S&P Global Commodity Insights (Jan. 2025 report)

PV Capex in 2025: Where the real Levers are





Rising Module Costs: Which Optimizations?

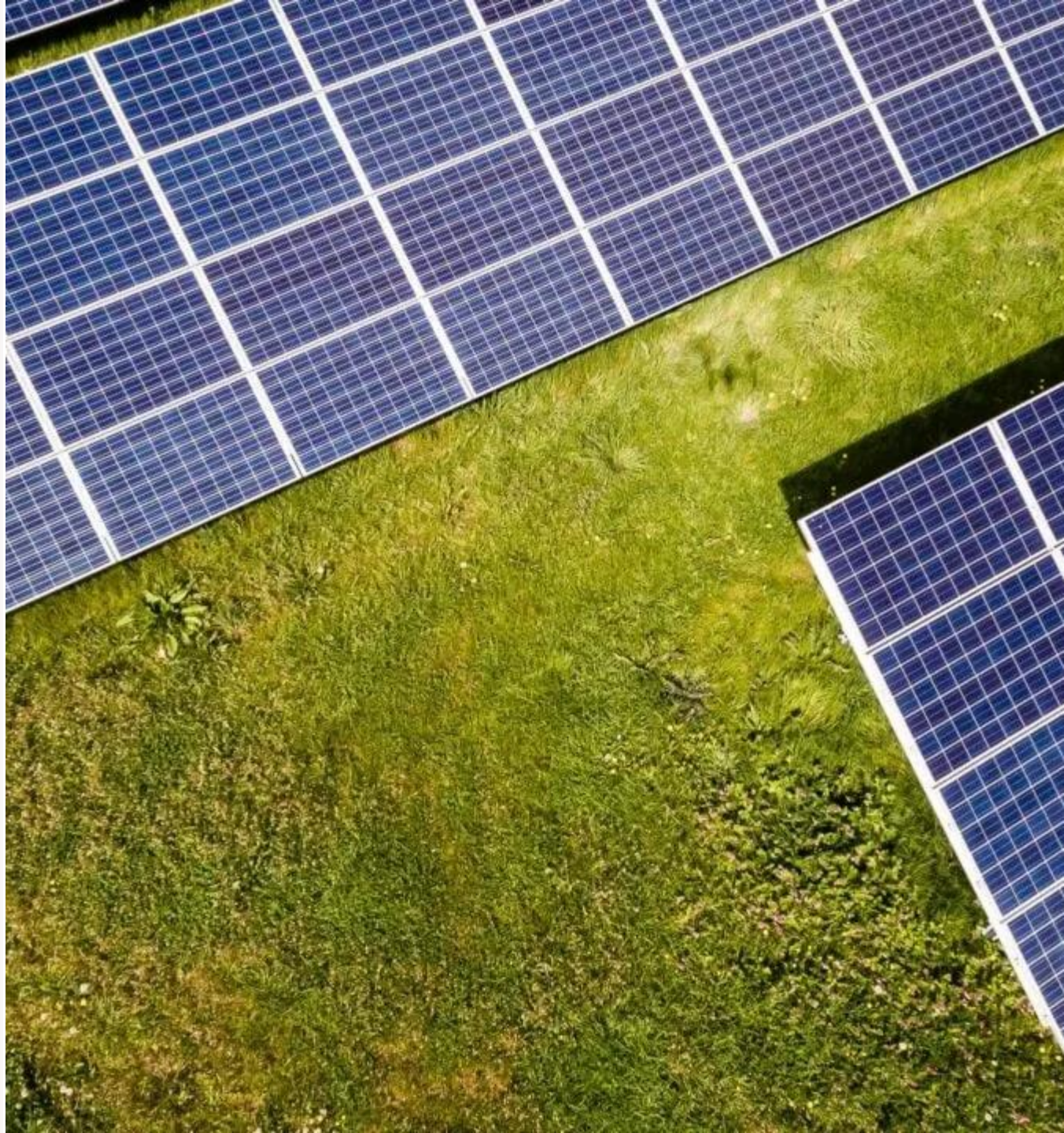
- Efficiency-based module optimization → yield, PR
- New Technologies: Back Contact , Topcon high efficiency
- Better degradation
- Depends on climate/ site conditions
- Layout optimisation rather component only

- Module choice alone cannot rescue project economics

BOS & Soft costs: further optimisation?

- Civil works : foundation and drainage, excavation
- Structure optimisation : capex and Yield improvement
- Electrical Design and Inverter sizing: DC/AC ratio, string vs. central
- Grid connection strategy
- Procurement Strategy

- **Hybridisation: BOS cost lever**



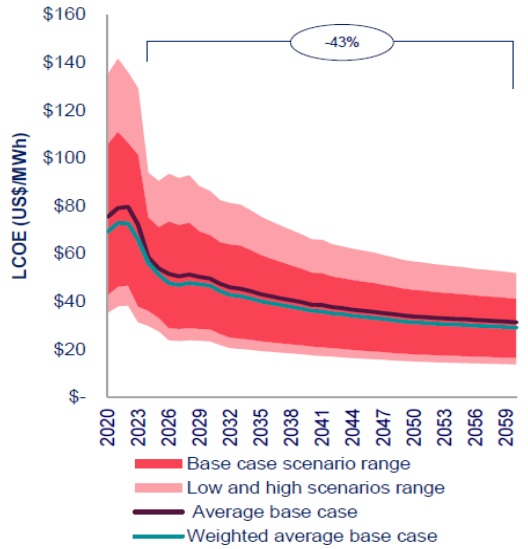
Hybridisation: A tool to rebuild Project Economics

- Stabilise Revenues by capturing high price windows
- Energy arbitrage
- Access to grid services/ancillary markets
- Uplift in IRR
- Optimise Capex

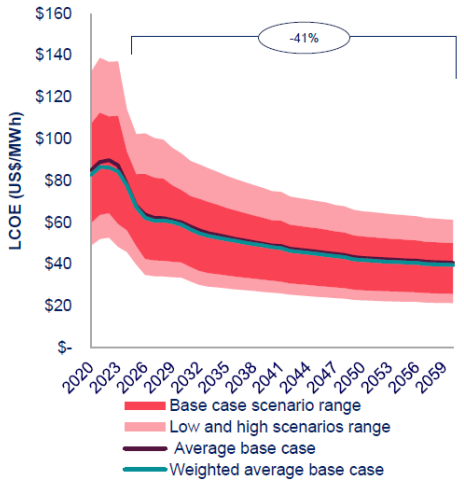
Solar PV versus Hybrid (fix tilt)

Regional average values	Unit	2025	2030	2040	2060	% change from 2025
Weighted LCOE	**US$/MWh**	**51**	**47**	**36**	**29**	**-43%**
Weighted capital costs	US$/kW	605	664	586	486	-20%
Weighted O&M costs	US$/kW-yr	6	5	5	4	-25%
Weighted capacity factor	%	15.0%	15.9%	17.8%	18.6%	23%
Fuel costs	US$/mmBtu	0.0	0.0	0.0	0.0	N/A
Target after-tax IRR	%	7.7%	7.0%	6.7%	6.7%	-13%
Project WACC	%	4.2%	3.1%	3.0%	3.0%	-28%

Average LCOE



Regional average values	Unit	2025	2030	2040	2060	% change from 2025
Weighted LCOE	**US$/MWh**	**67**	**59**	**48**	**40**	**-41%**
Weighted capital costs	US$/kW	947	963	864	732	-23%
Weighted O&M costs	US$/kW-yr	14	12	11	10	-30%
Weighted capacity factor	%	N/A	N/A	N/A	N/A	N/A
Fuel costs	US$/mmBtu	0.0	0.0	0.0	0.0	N/A
Target after-tax IRR	%	8.8%	8.0%	7.6%	7.6%	-14%
Project WACC	%	5.6%	4.1%	4.0%	4.0%	-28%



Hybrid projects remain complex

- Revenue complexity: merchant revenue is volatile
- Regulatory frameworks unclear in several EU markets
- Bankability requires clarity + track record
- Hybrid PPA models emerging but still early stage

Thank you