

ESS Price Forecasting Report

Report sample

Q3 2025





ESS Price Forecasting Report

Ongoing supply chain issues, changing global market dynamics, and the rising demand for energy storage solutions are leading to challenges for buyers of Energy Storage System (ESS) equipment. To navigate this complex landscape, companies need a reliable tool to predict future cost and pricing trends. This is the driving force behind Intertek CEA's ESS Price Forecasting Report (PFR).

Released quarterly, the ESS PFR offers a comprehensive five-year cost and pricing outlook for Lithium Iron Phosphate (LFP) and Nickel Manganese Cobalt (NMC) battery containerized systems. This report is grounded in leading technology and material platforms, and it incorporates vital data on input material price and supply outlooks, market bottlenecks, and demand analysis to support its cost and price forecasts.

The ESS PFR is a crucial resource for decision-makers aiming to make well-informed choices in the ever-evolving energy storage industry. With detailed insights into containerized system price stacks, including forecasted "all-in" pricing and baseline price outlooks tailored to specific markets, subscribers are equipped with the knowledge they need to stay ahead.

In this report you will find:

- **Cost & Pricing Outlook:** Five-year forecast for battery cell, DC container, and lithium pricing
- **Market Analysis:** Insights into supply, demand, and market bottlenecks.
- **Cost and Price Stacks:** Detailed "all-in" cost and pricing breakdowns.
- **Data-Driven Accuracy:** Proprietary methodologies backed by Intertek CEA expertise.

Table of contents (full report)

- Executive Summary
- Battery cell cost/pricing
- DC container cost/pricing
- Market focus: U.S. trade barriers
- Methodology

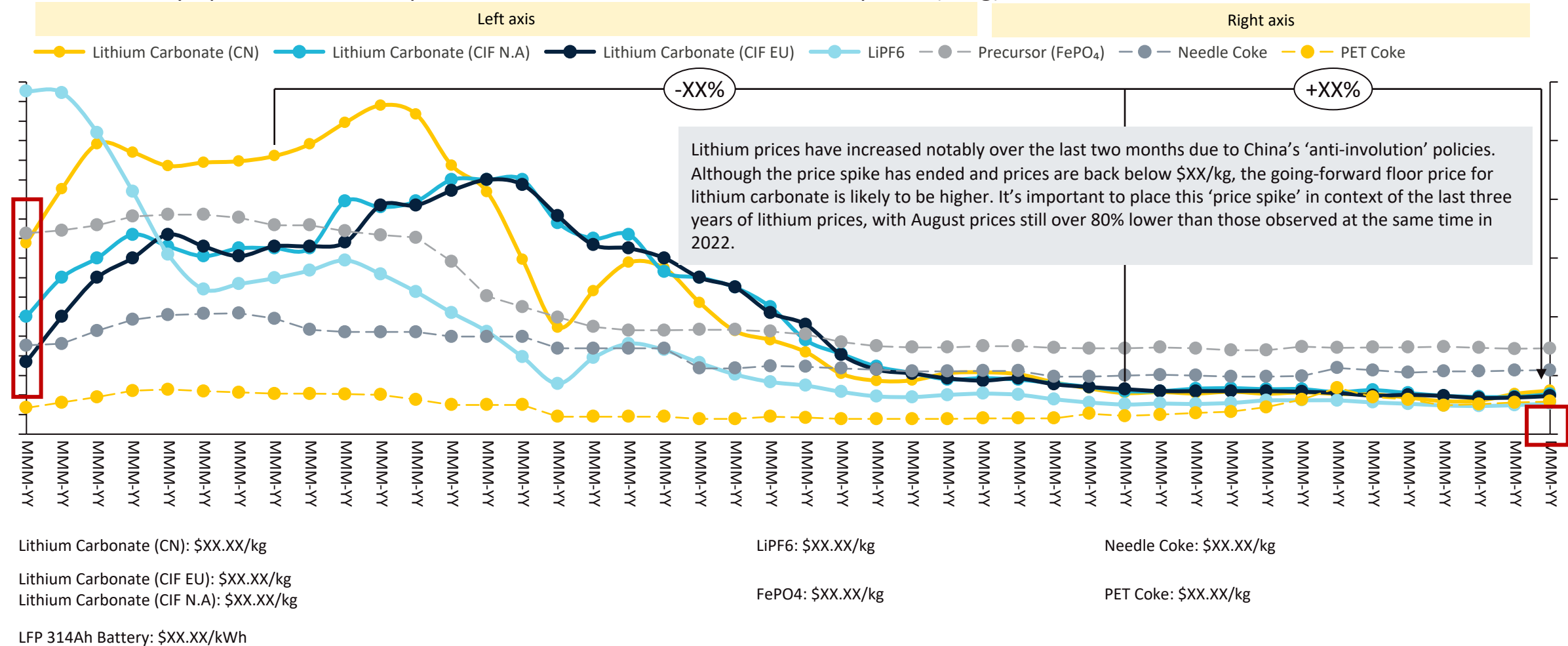


Lithium uptick from China domestic policies



China lithium has already peaked and begun to decline, but prices remain high

China LFP battery upstream material price, and US and EU lithium carbonate prices (\$/kg)

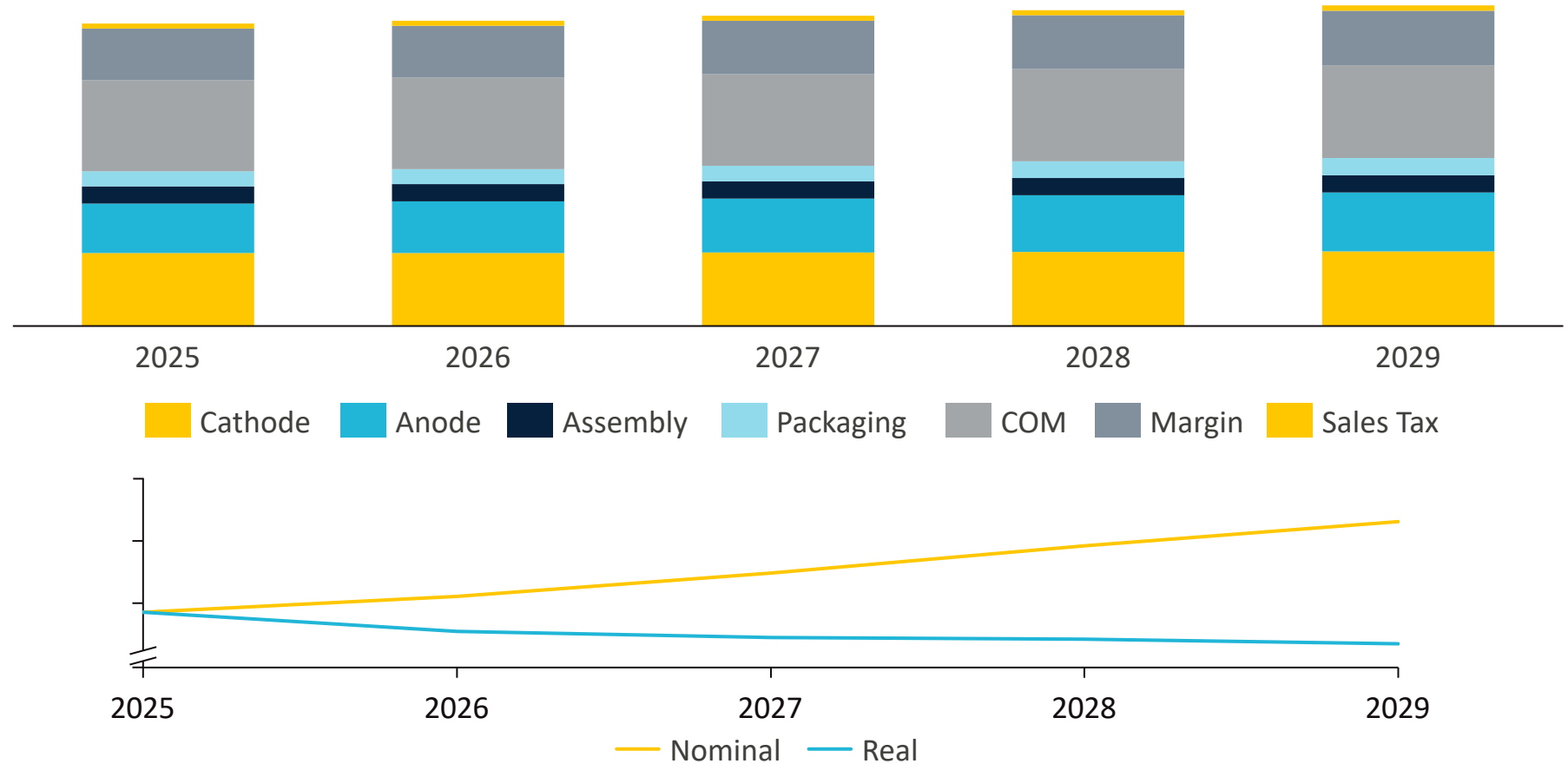


Modest price increases translate into modest real declines

Real cell prices show declines driven by labor, commodity softness

- With commodity prices projected to increase modestly through the end of the decade, battery cell prices are also projected to increase at a rate of XX-XX% between 2025 and 2029.
- Given current inflation projections from the US Congressional Budget Office, real prices for batteries are on a modestly declining trajectory. Key commodities like lithium are increasing slower than the rate of inflation, and labor costs are projected to continue decreasing as manufacturing technology develops.
- A XX% real decline in prices is small and doesn't take into account changes brought on by technology improvements. As the primary technological drive of the moment is energy density, declines seen at the container level will be more significant especially when taking more advanced cell designs into account.

Cell price forecast, 320Ah LFP from China (US\$/kWh)

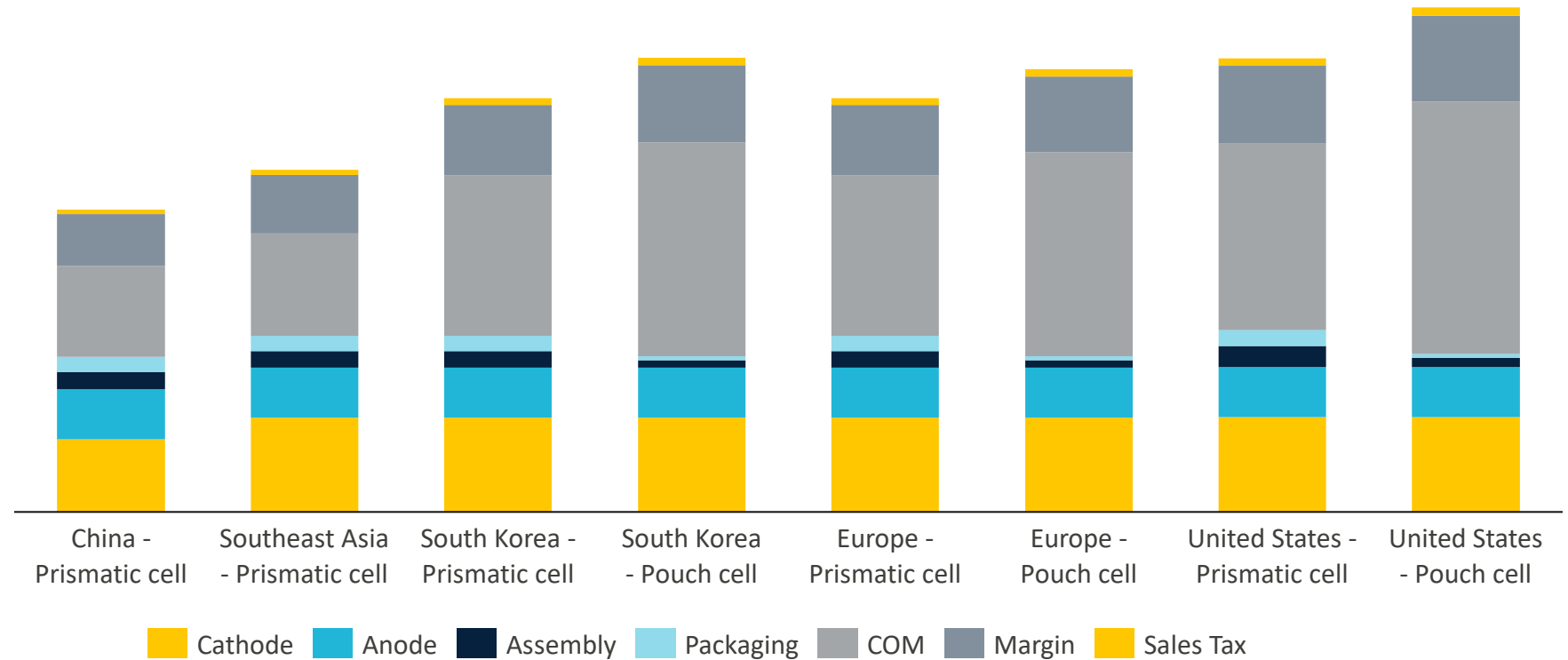


Scope of supply variations increase as ex-China OEMs ramp up

Design differences in China and South Korean scope of supply could drive costs up

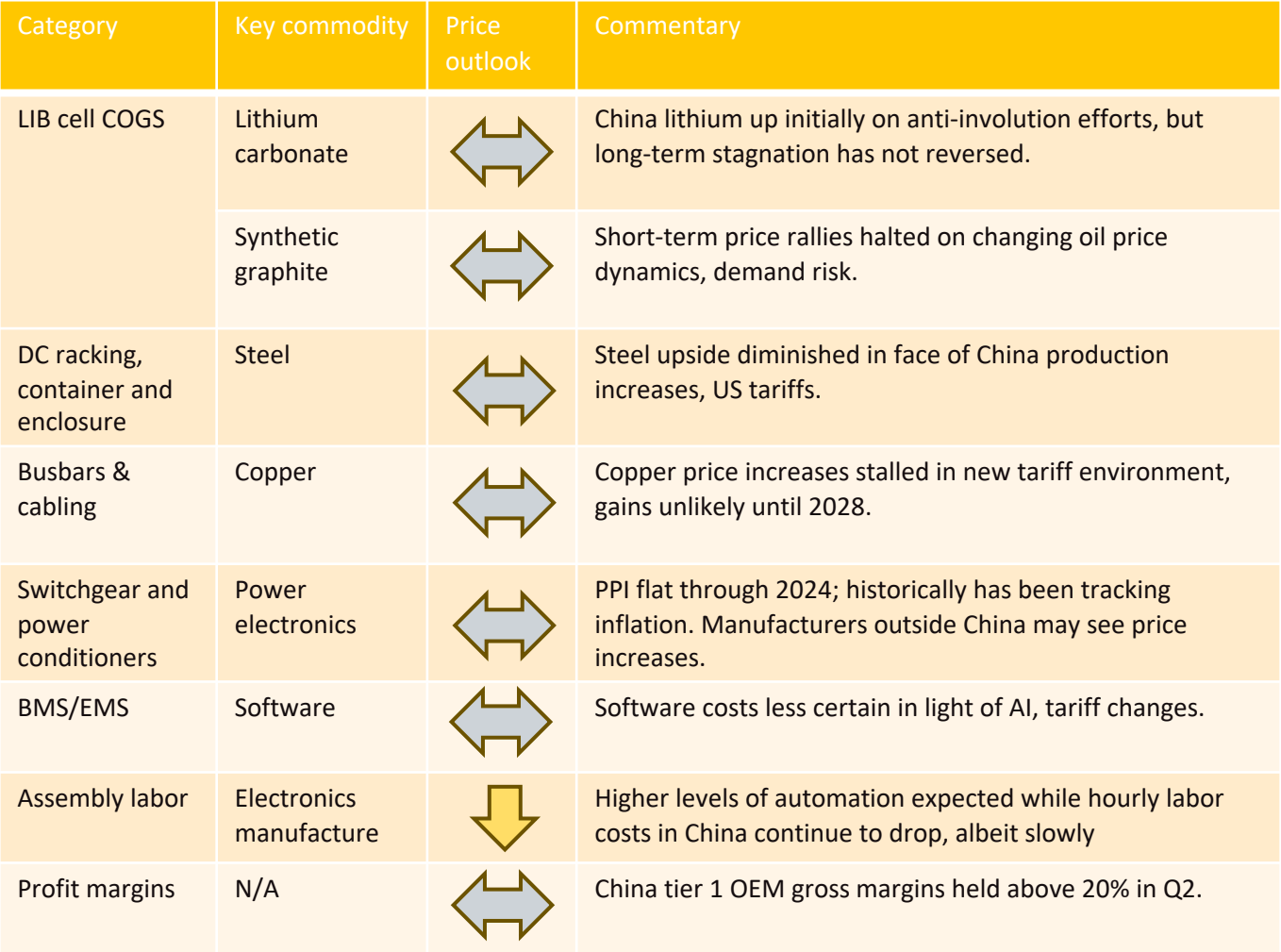
- With LGES mass-producing ESS cells in the United States, there will be an emerging split in cell form factor between prismatic and pouch cells that has not been previously seen for the LFP chemistry.
- Given current energy densities, pouch cells are at a disadvantage compared to prismatic. Pouch cells see a roughly 10% cost penalty compared to prismatic for similar countries of origin. Key countries of origin for prismatic cells tend to produce less expensive cells overall, regardless of form factor.
- There is continuing advancement in cell design for both form factors; LG's battery roadmap is claiming a 10% improvement in volumetric energy density by 2027 (from 388 Wh/L to over 420 Wh/L), which would close some of the gap between pouch and prismatic.
- Pouch cell manufacturing is generally more capex-intensive, which would imply that further manufacturing expansions could still drive additional economies of scale.

Cell price comparison, prismatic and pouch scopes of supply (\$/kWh)





DC container price composition, 1.25MW/5MWh, FOB
from China, CY2025 (US \$/kWh)

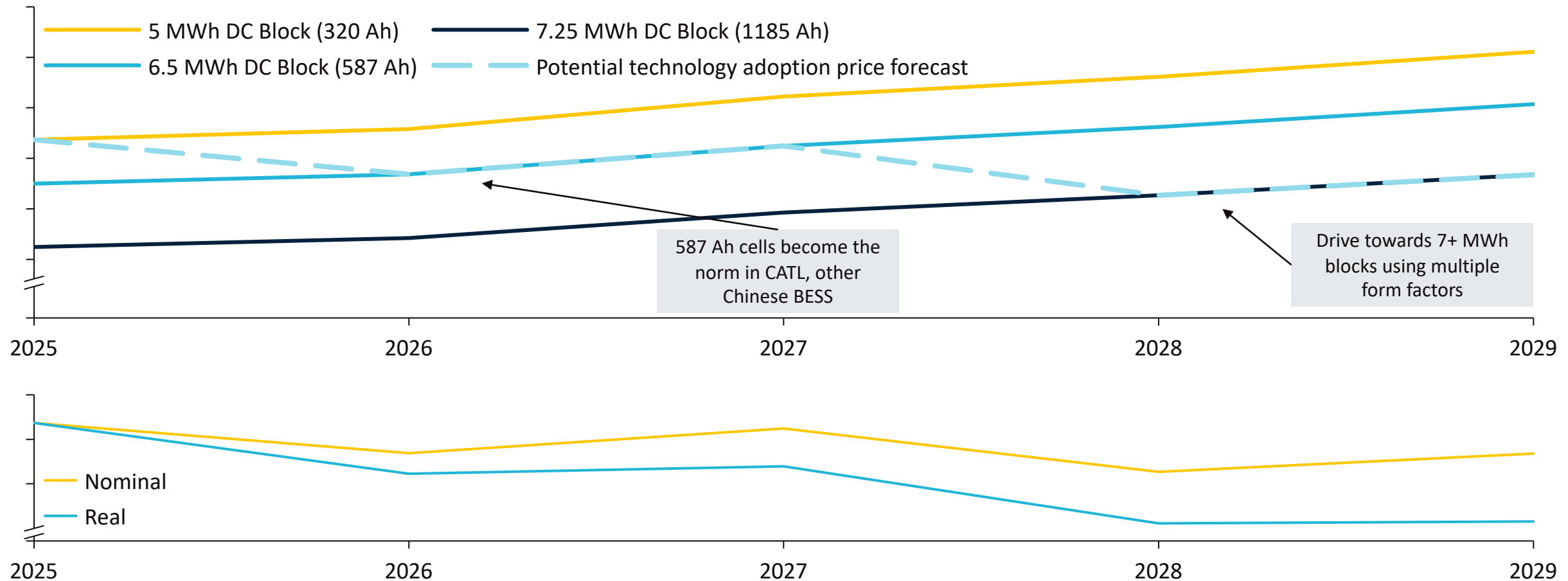




Price forecast – Three technology scenarios

Advanced container designs will provide downward price pressure through the decade

DC container price sensitivities for different cell form factors, \$/kWh

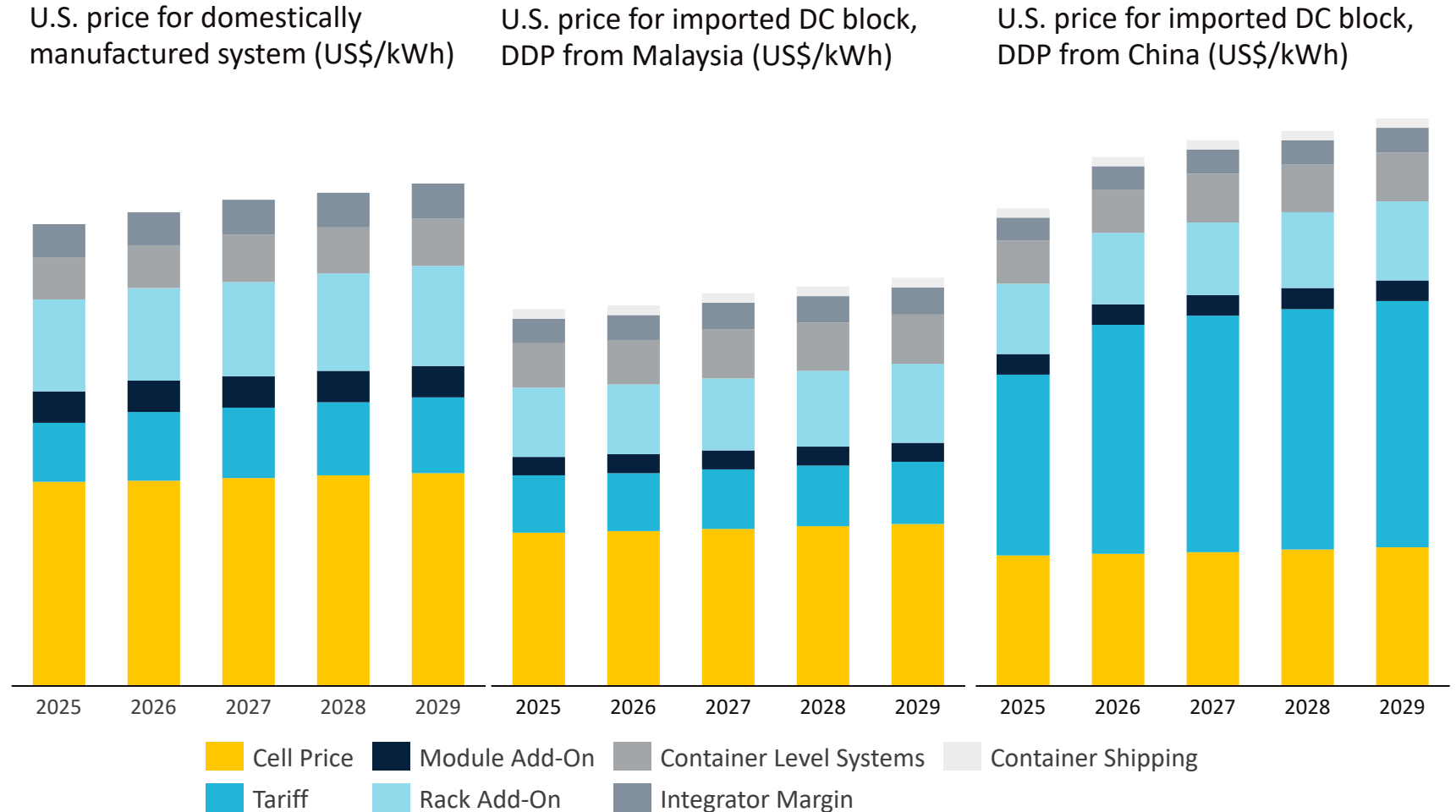




Short-term US tariff impacts more significant than commodities

AAM AD/CVD lower than expected, with impact as large as lithium hikes

- When examining the current tariff rates that will be in effect after the end of the 'pauses' on the IEEPA tariffs, batteries from China will be subject to 64.9% tariffs, increasing to 82.4% at the beginning of 2026.
- Recently Chinese lithium prices have gone up quickly as a result of new 'anti-involution' policies which intend to address the oversupply and competition between domestic lithium miners. Cell costs have jumped \$XX/kWh, but these impacts have been softened by lower-than-expected AAM AD/CVD rates. For China DC blocks, which aren't in scope of the AD/CVD for anode active material, prices have increased more.
- It is unclear what the implications of the budget bill's FEOC rules on Chinese battery supply. With American buyers shifting towards FEOC-compliant scopes of supply, Chinese suppliers will find it difficult to reduce prices enough to still be viable in the market. At the same time, if projected demand for FEOC-compliant batteries continues to outstrip supply, prices are likely to rise and a portion of buyers may still end up procuring from Chinese firms, be that from China or Southeast Asia.





Report contents: 41 pages of in-depth reporting

Intertek CEA's Price Forecasting Program is the leading source of price data and analysis in the solar and storage industry. We leverage the expertise of our solar and storage industry experts and analysts, our network of lab partners, independent industry experts and raw material suppliers, and our access to proprietary, trade association and public databases to report on current trends and anticipate changes that will transform the renewable energy landscape.

[Click here to purchase full report](#)



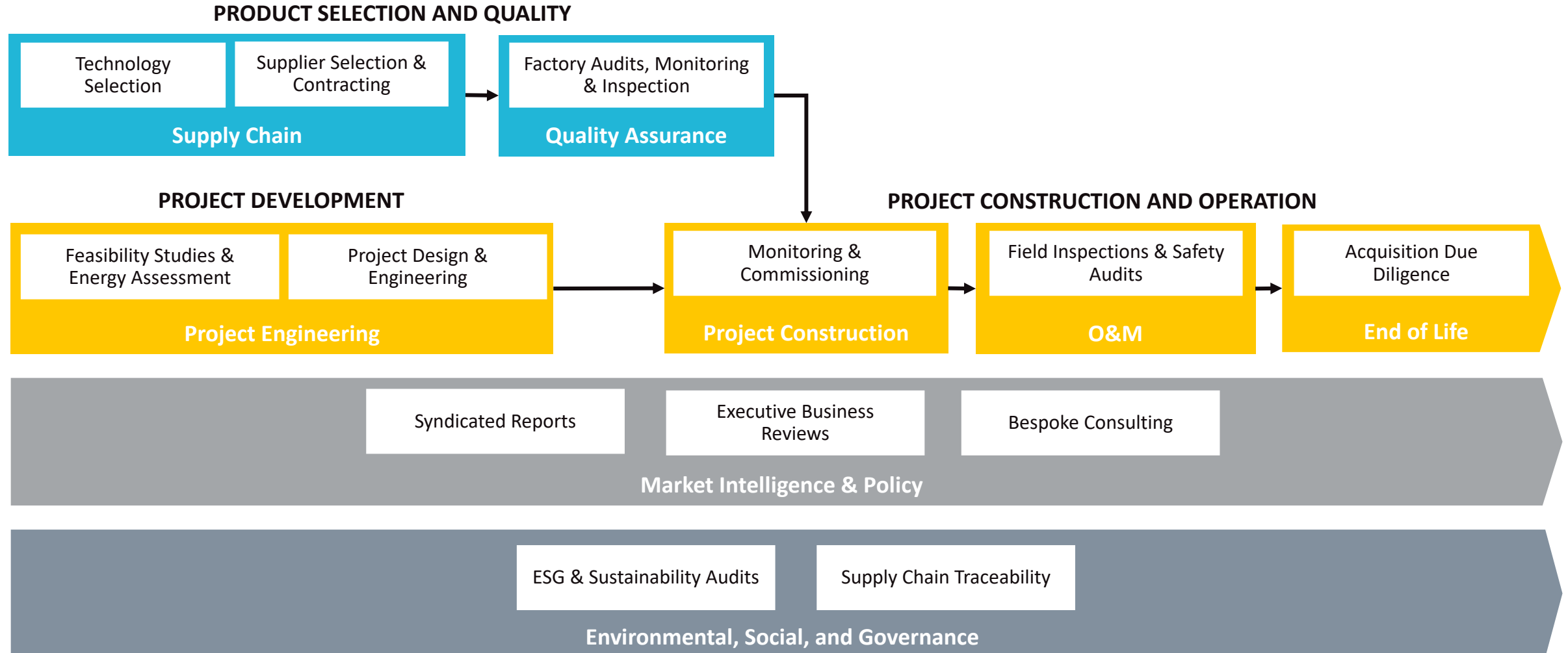
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Intertek CEA comprehensive services span entire PV & ESS value chains

Intertek CEA helps control quality, supply, and implementation risk for PV and energy storage



Intertek CEA market intel offers tailored solutions catering to client needs

Policy developments, pricing outlooks, supply landscapes, technology evolution



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Six reports deliver critical industry insights across the value chain

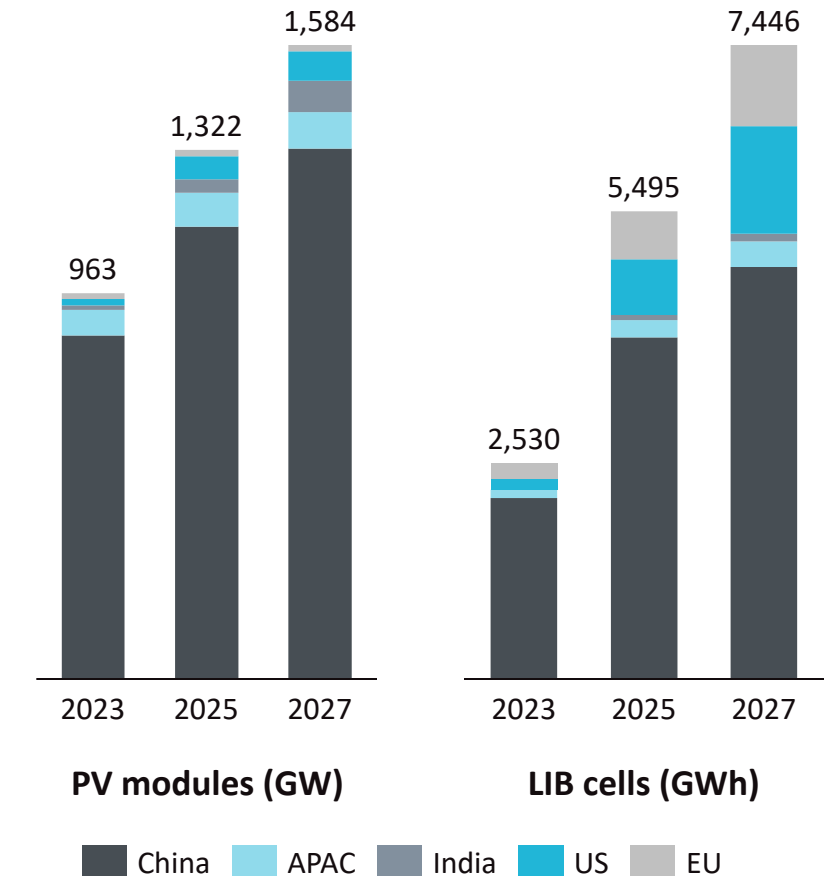
REPORT	CONTENT FOCUS	TARGET AUDIENCE	STRATEGIC VALUE	DELIVERABLES	REGIONAL CONTENT AREAS
Price Forecasting Reports (PFR) 1. PV modules PFR 2. Energy storage systems PFR	Bottom-up pricing model with full value-chain cost segmentation	Value chain companies C-level executives Strategy analysts Procurement teams	• Increase buyer leverage thru understanding of cost drivers • Increase project profitability thru better price acquisition • Increase lending potential thru price benchmarking • Optimize procurement schedules	Quarterly PDF files delivered by email in PowerPoint format (4 editions/year) Full analyst support via email for questions pertaining to report coverage	Views of FOB China and DDP U.S. pricing and additional E.U. and U.S. regional market insights where applicable
	Scenario analysis including multiple points of product origin				
	Detailed analysis of major market drivers impacting product costs				
Supply, Technology & Policy Reports (STPR) 3. PV modules STPR 4. Energy storage systems STPR	Comprehensive evaluation of production capacity expansion	End-users Development originators Project planning & estimators O&M managers	• Increase project profitability by leveraging industry incentives • Establish security of supply through trade policy understanding • Understand project performance implications for new technology adoption		Regional manufacturing buildups, technology roadmaps, and policy updates for China, India, U.S., E.U., and other regions where applicable
	Detailed analysis of industry technology roadmaps				
	Extensive evaluation of policy impacts to supply/demand				
Supplier Market Intelligence Program (SMIP) 5. PV modules SMIP 6. Energy storage systems SMIP	Comprehensive insights into PV module and battery cell manufacturers, ESS integrators, and electrolyzer manufacturers	Financial institutions Private equity investors Investment bankers Debt providers	• Benchmark supplier capabilities to aid in AVL development • Compare supplier technology positioning to manage product risk/product reliability • Evaluate supplier capacity buildout to secure supply chains		Profiling of multi-regional suppliers and technology leaders applicable to U.S., E.U., and global export markets
	Complete supplier profiles with current and projected production capacity and technology roadmaps				
	In-depth analysis of supplier technology positioning and capacity trajectories				

The Problem...

Geopolitical forces are inducing structural changes to value chains supporting the energy transition, complicating procurement strategies and jeopardizing profitability

- Western markets are working diligently to **de-risk supply chains** overly dependent on China thru localization of production capacity
- **Global overcapacity** is developing, though traditional free-market response is instead being modified thru **national trade policies**
- Breakneck pace of supply expansion comes with **equally aggressive pace of technology advancement** in the PV, and energy storage system (ESS) sectors
- **Suitability and security of supply** have become top of mind for industry stakeholders up and down the value-chain
- The importance of supplier evaluation and monitoring has never been higher as **a flood of new entrants** hits the market
- **Project profitability** risks abound as **project delays and volatile pricing** continue to plague the market

Regional production capacity (GW)





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