



First Solar Analyst Day 2023



LEADING THE WORLD'S
SUSTAINABLE ENERGY FUTURE

Important Information

Cautionary Note Regarding Forward Looking Statements

This presentation contains forward-looking statements which are made pursuant to safe harbor provisions of the Private Securities Litigation Reform Act of 1995. All statements in this presentation, other than statements of historical fact, are forward-looking statements. These forward-looking statements include, but are not limited to, statements concerning: demand for our technology, our business strategy, including anticipated trends and developments in and management plans for our business and the markets in which we operate; our ability to upgrade and expand manufacturing capacity worldwide, including investment in new U.S. manufacturing facilities; increased research and development (“R&D”) programs and investment; our ability to integrate recent strategic acquisitions, including Evolar; a new Series 7 product, including module/day capacity and top production bin; results of our Copper Replacement (“CuRe”) program; the production of bifacial modules; our financial guidance for 2023; projections for future periods including cost per watt, overhead, growth costs, gross and operating margin profile and capital expenditures; volume sold, bookings, booking opportunities, expected module shipments; products and our business and financial objectives; the availability of benefits under certain production linked incentive programs; the impact of the Inflation Reduction Act of 2022 (the “IRA”) including the total advanced manufacturing production credit available to us under Section 45X of the Internal Revenue Code; the ability of our updated contracting structure to provide ASP upsides and gross margin risk mitigation and a meaningful benefit to our current contracted backlog ASPs; our energy yield; our expectations regarding investment in the expansion of our domestic and international capacity and the dedicated R&D innovation center; our expectations regarding our work with partners; and our belief about recently passed legislation.

These forward-looking statements are often characterized by the use of words such as “estimate,” “expect,” “anticipate,” “project,” “plan,” “intend,” “seek,” “believe,” “forecast,” “foresee,” “likely,” “may,” “should,” “goal,” “target,” “might,” “will,” “could,” “predict,” “continue,” “contingent” and the negative or plural of these words and other comparable terminology. Forward-looking statements are only predictions based on our current expectations and our projections about future events and therefore speak only as of the date of this presentation. You should not place undue reliance on these forward-looking statements. We undertake no obligation to update any of these forward-looking statements for any reason, whether as a result of new information, future developments or otherwise. These forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to differ materially from those expressed or implied by our forward-looking statements. These factors include, but are not limited to: structural imbalances in global supply and demand for PV solar modules; our competitive position and other key competitive factors; the market for renewable energy, including solar energy and renewable energy projects; the reduction, elimination, expiration or introduction of government subsidies, policies, and support programs for solar energy projects; the impact of public policies, such as tariffs or other trade remedies imposed on solar cells and modules; the passage of legislation intended to encourage renewable energy investments through tax credits, such as the IRA, the impact of the IRA on our expected results of operations in future periods, which may be affected by technical guidance, regulations, subsequent amendments or interpretations of the law; interest rate fluctuations and both our and our customers’ ability to secure financing; changes in the exchange rates between the functional currencies of our subsidiaries and other currencies in which assets and liabilities are denominated; our ability to execute on our long-term strategic plans; the loss of any of our large customers, or the ability of our customers and counterparties to perform under their contracts with us; our ability to execute on our solar module technology and cost reduction roadmaps; our ability to improve the wattage of our solar modules; our ability to incorporate technology improvements into our manufacturing process, including the production of bifacial solar modules and next generation Series 7 modules; our ability to avoid manufacturing interruptions, including during the ramp of our Series 7 modules manufacturing facilities; the satisfaction of conditions precedent in our sales agreements; our ability to attract new customers and to develop and maintain existing customer and supplier relationships; general economic and business conditions, including those influenced by U.S., international, and geopolitical events; environmental responsibility, including with respect to cadmium telluride (“CdTe”) and other semiconductor materials; claims under our limited warranty obligations; changes in, or the failure to comply with, government regulations and environmental, health, and safety requirements; effects arising from and results of pending litigation; future collection and recycling costs for solar modules covered by our module collection and recycling program; supply chain disruptions, including demurrage and detention charges; our ability to protect our intellectual property; our ability to prevent and/or minimize the impact of cyber-attacks or other breaches of our information systems; our continued investment in research and development; the supply and price of components and raw materials, including CdTe; our ability to construct production facilities to support product lines, including Series 6 and Series 7 module manufacturing; our ability to attract and retain key executive officers and associates; the severity and duration of public health, and the potential impact on our business, financial condition, and results of operations; and the matters discussed under the captions “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of our most recent Annual Report on Form 10-K and our subsequently filed Quarterly Reports on Form 10-Q, as supplemented by our other filings with the Securities and Exchange Commission. You should carefully consider the risks and uncertainties described in these reports.



Keynote: Analyst Day 2023

Mark Widmar
Chief Executive Officer



LEADING THE WORLD'S
SUSTAINABLE ENERGY FUTURE

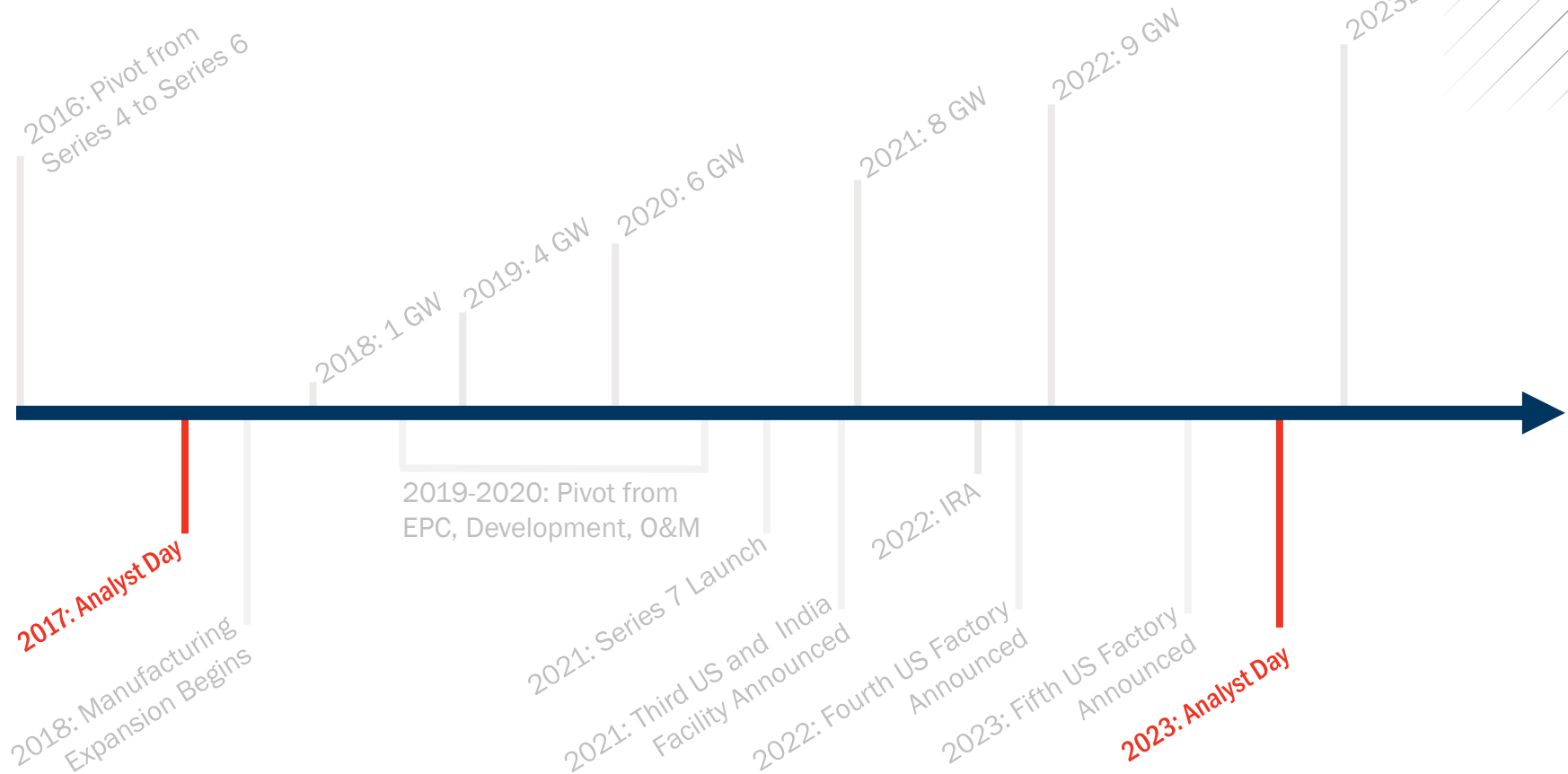




The Largest Solar Manufacturing Complex in the Western Hemisphere

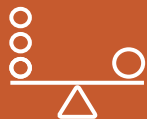


Our Growth Journey



Growth Pillars

LONG-TERM GROWTH



BALANCED

Business
Model

GROWTH
PROFITABILITY
LIQUIDITY



OPTIMIZED

Technical &
Product

ENERGY
EFFICIENCY
COST



REPEATABLE

Manufacturing
Format

SCALABLE
DISTRIBUTED
EFFICIENT

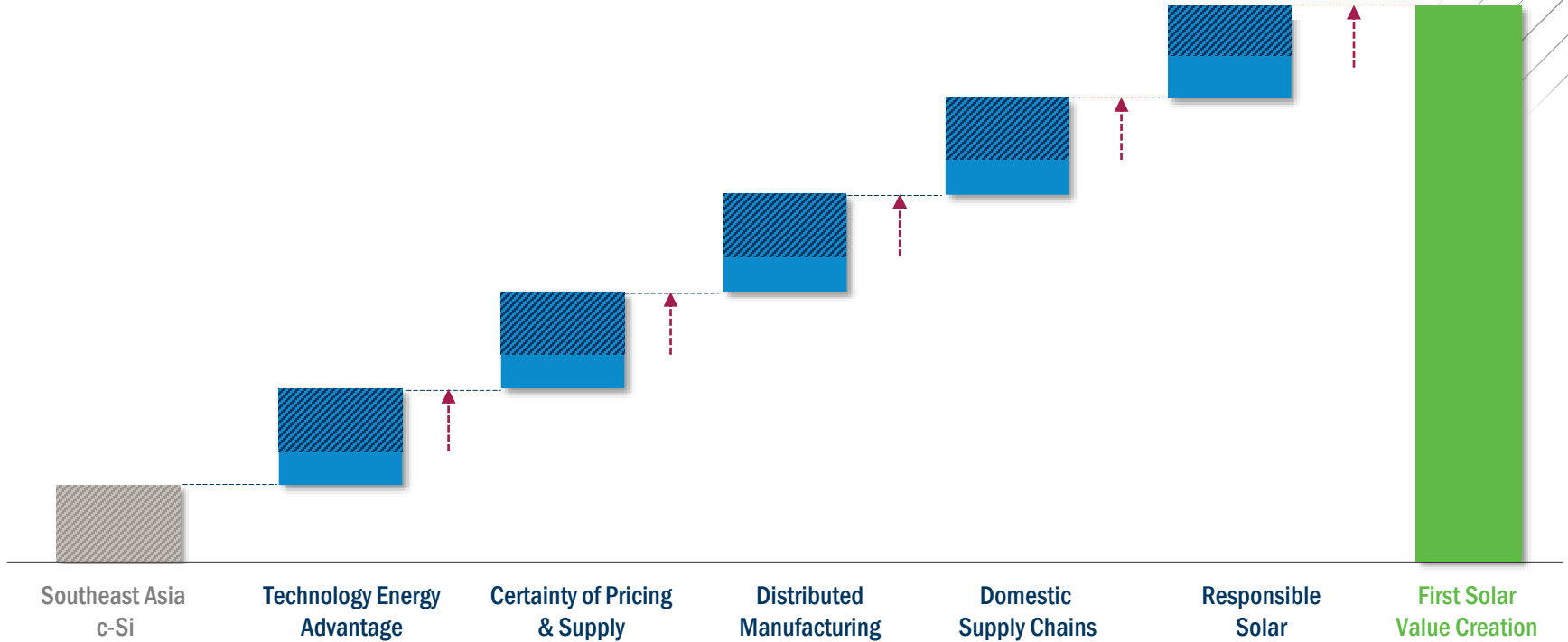


INVESTED

In
Differentiation

TECHNOLOGY
CERTAINTY
RESPONSIBLE SOLAR

Leaning Into Differentiation



Differentiation creates value, value creates profit pools

Differentiation: Delivering Certainty

— “

As we grow our pipeline, we want a trusted partner that will not compromise on quality, its commitments, or principles, and that partner is First Solar.

Asa Levinger, CEO, Energix Renewables

” —

— “

It's crucial that we work with partners like First Solar that will deliver not only high quality, responsibly made products, but also certainty of supply.

Eric Lammers, CEO, Swift Current Energy

” —

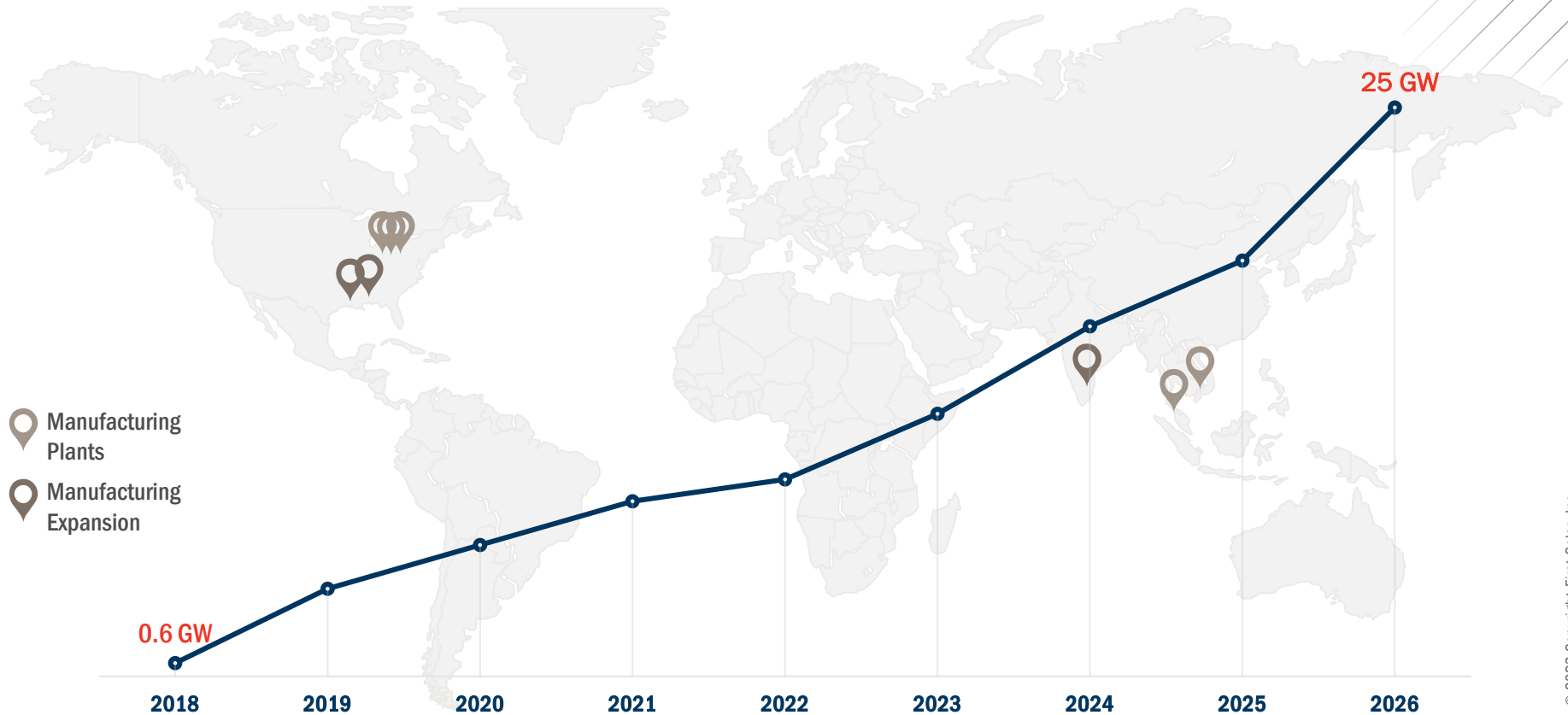
— “

Intersect Power's ongoing relationship with First Solar has been critical in rapidly scaling our business to meet our vision and reliably delivering our customers value and performance to support their decarbonization goals.

Sheldon Kimber, CEO, Intersect Power

” —

Differentiation: Distributed Manufacturing



Differentiation: Strategic Sourcing



Tata Soda Ash, Wyoming



US Silica, Michigan



NSG/Pilkington, Ohio



Worthington Industries, Ohio



ICE Industries, Ohio



Rio Tinto Kennecott, Utah

Differentiation: Responsible Solar

ENVIRONMENTAL



SOCIAL



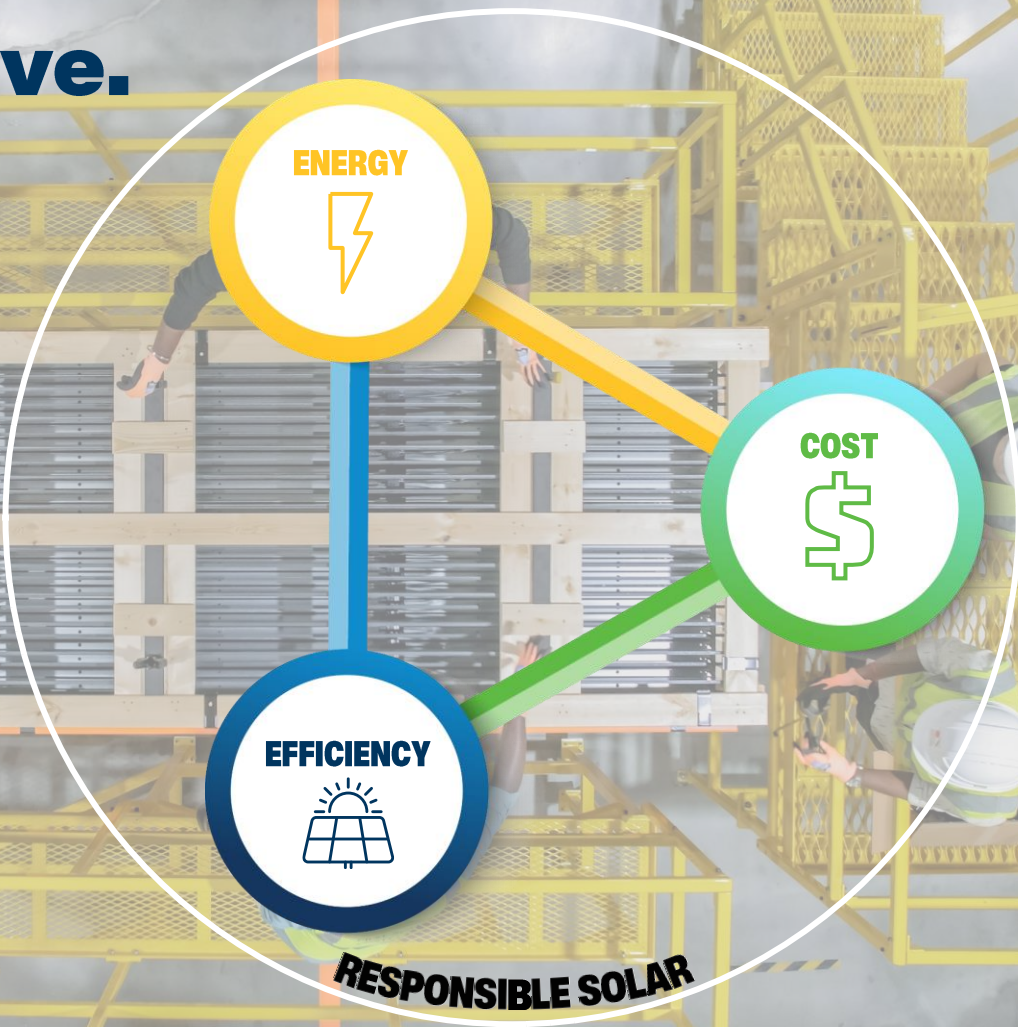
GOVERNANCE



Leading the World's Sustainable Energy Future.



Transformative. Disruptive.



RESPONSIBLE SOLAR

**The Future
Belongs to Thin Film.**



Technology Update

Markus Gloeckler
Chief Technology Officer



LEADING THE WORLD'S
SUSTAINABLE ENERGY FUTURE



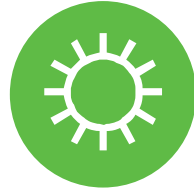
Our Technology is the Foundation of Everything We Do



Vertically
Integrated
Manufacturing



Supply Chain
Transparency



Sustainability &
Responsible Solar

A Smarter Way of Making Solar Panels



circa 2006, vertically integrated manufacturing via continuous end-to-end conveyor



A Smarter Way of Making Solar Panels



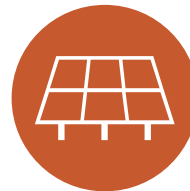
Lessons Learned



Maximize Energy Yield



Prioritize Quality and Reliability



Optimize for Utility-Scale

Series 6: Optimized for Utility-Scale Solar

Series 6

2018 - 2022

**Series 6
Plus**

Up To 480 Watts

2021

- Synergy with existing structure ecosystem
- Environmental Social Governance (ESG) Recognition
- First-of-its-kind warranty



Series 7: Launched

Designed Not Only **FOR**, but **WITH** Our Customers

Series 7

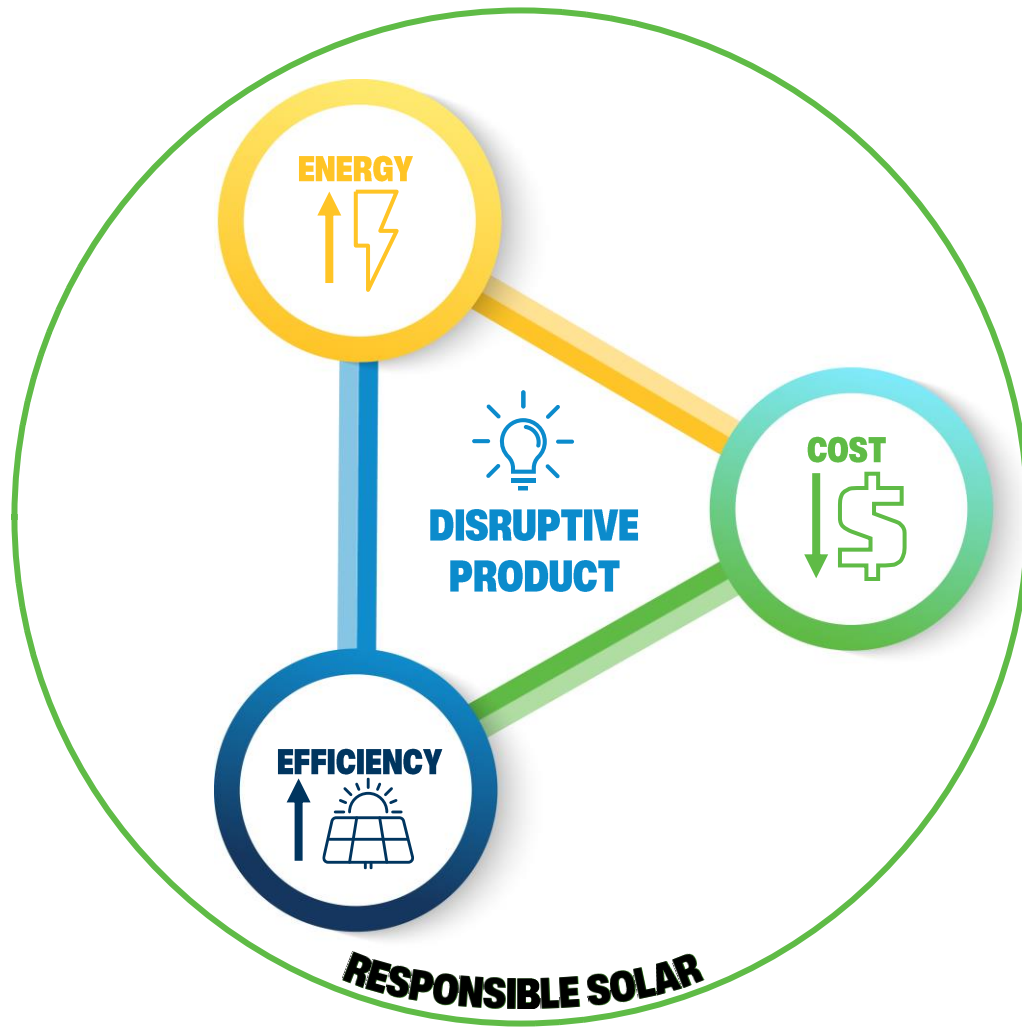
Up To 550 Watts

- In-market product with localized supply chain
- Our most eco-efficient module to date
- Platform for ecosystem innovation





The Energy Optimization Paradigm



Module Attributes **Real World Energy**

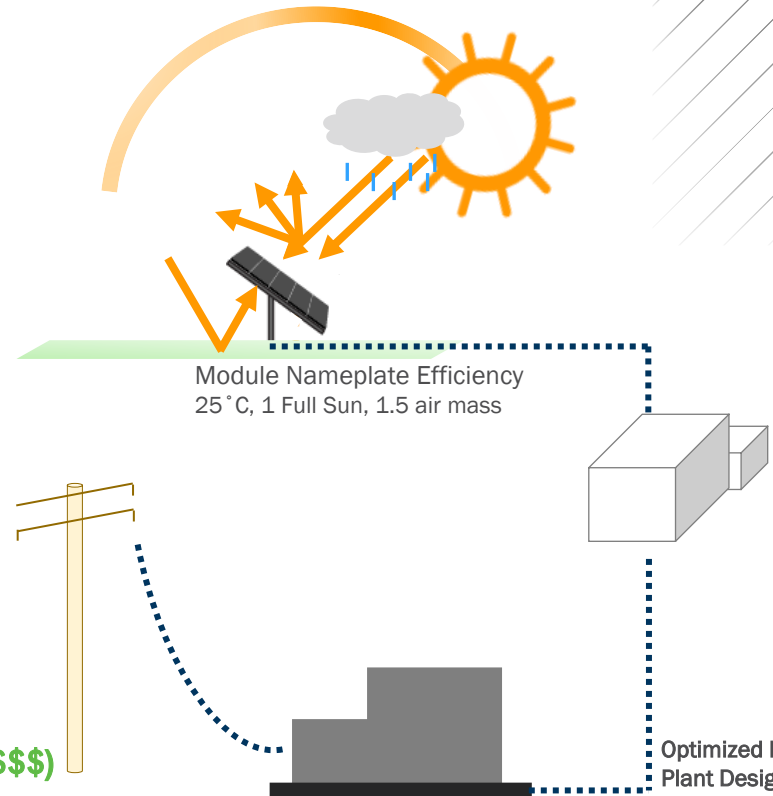
▪ Efficiency

- Bifaciality
- Degradation Rate
- Shading Response
- Temperature Response
- Air Moisture Spectral Response
- Low Light Response
- Incident Angle Response
- Light-Induced Degradation

Project Design Attributes **Real World Energy**

- Efficiency-Driven BoS Variability
- Reflected Sunlight (Albedo)
- Tracking Capabilities
- Inverter Efficiency and Clipping
- Wiring Loss Assumptions
- DC:AC Ratio Design
- Row Spacing Design
- Plant Useful Life

Energy
MW-hrs (\$\$\$)



Efficiency is an Incomplete Measure of a
Module's Competitiveness

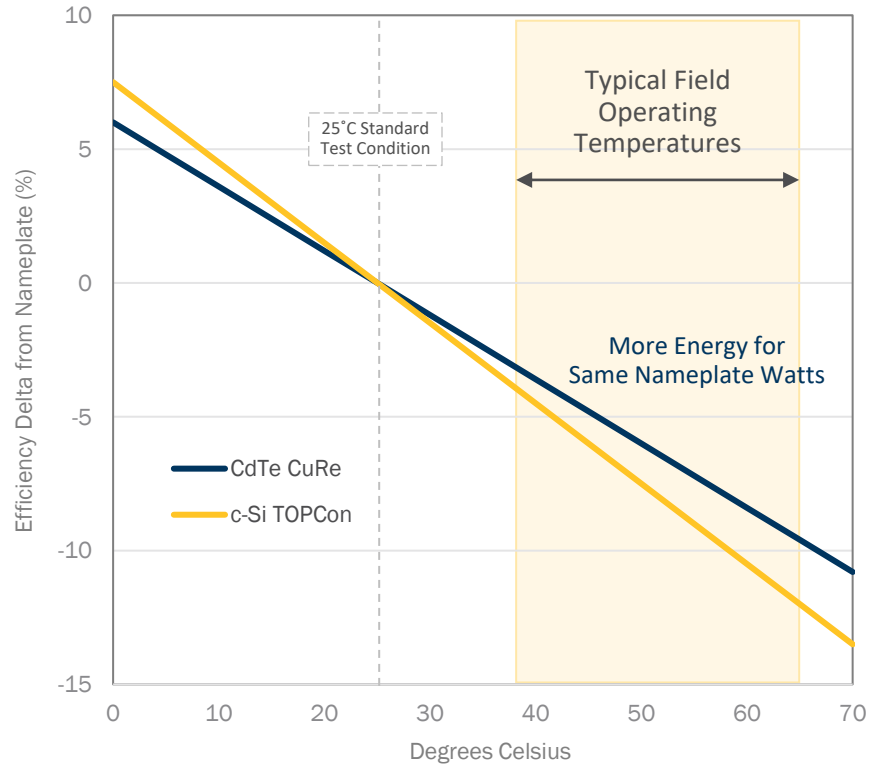
Module Attributes Real World Energy

- Efficiency
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- Degradation Rate
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- **Temperature Response**
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- Plant Useful Life

Temperature Response



Advantage: CuRe Energy Attributes

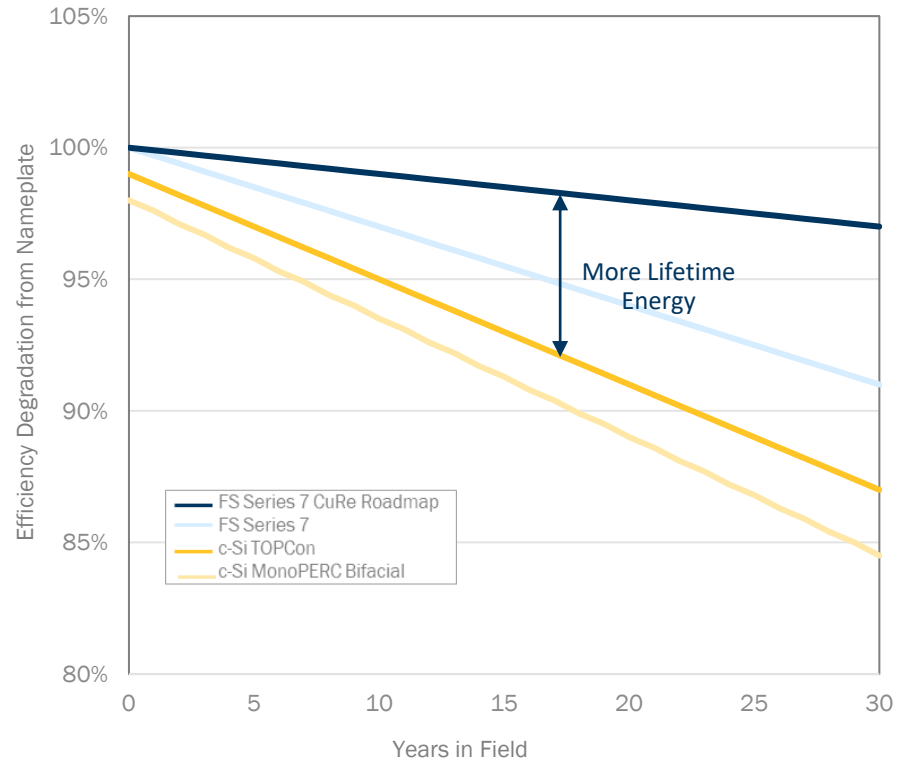
Module Attributes Real World Energy

- Efficiency
- Bifaciality
- **Degradation Rate**
- Shading Response
- Temperature Response
- Air Moisture Spectral Response
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- Incident Angle Response
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Project Design Attributes Real World Energy

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- Row Spacing Design
- Plant Useful Life

Guided Degradation Rate



Advantage: CuRe Energy Attributes

Module Attributes
Real World Energy

- Efficiency
- Bifaciality
- Degradation Rate
- Shading Response
- Temperature Response
- Air Moisture Spectral Response
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Project Design Attributes
Real World Energy

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Competitive Scorecard

Single Data Point	CdTe CuRe	c-Si TOPCon	Watts
Efficiency (Label Rating @ STC)			

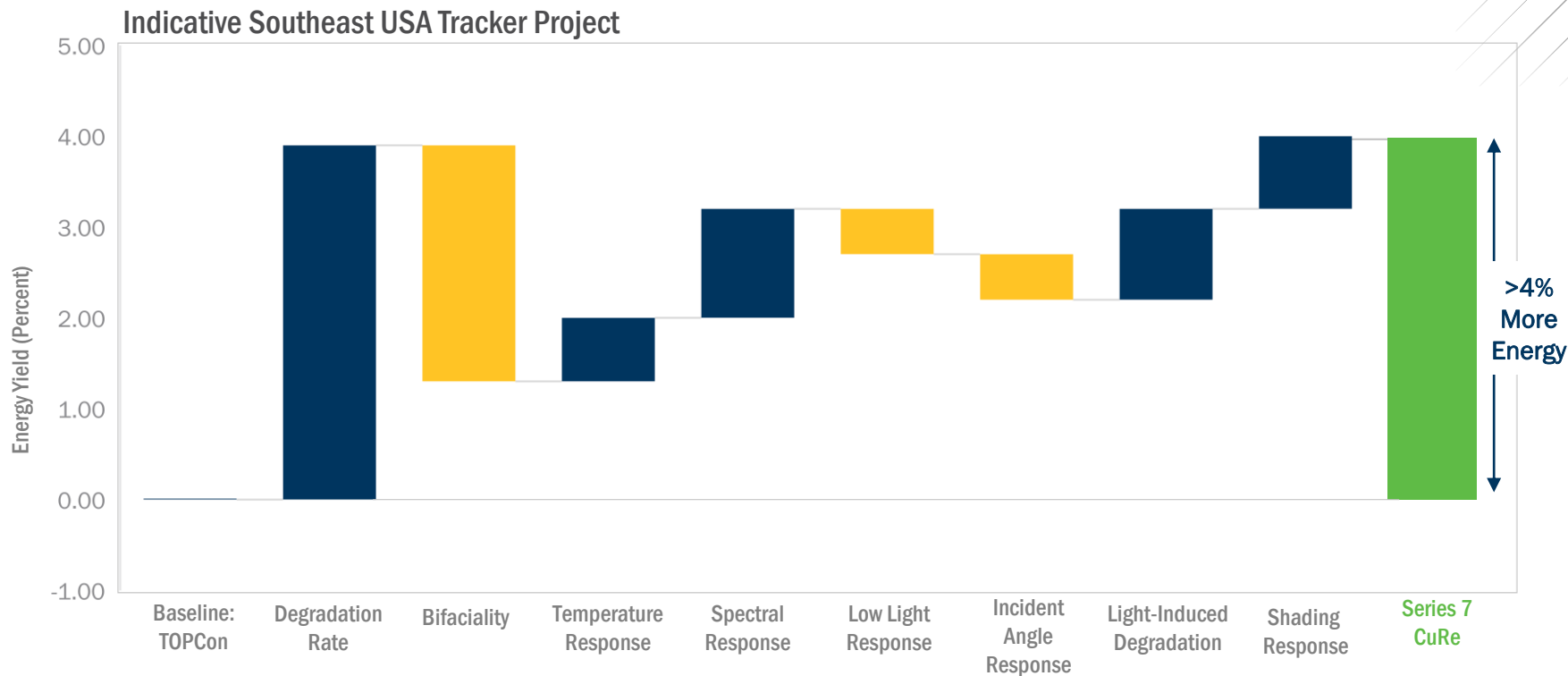
*STC per IEC61215: 25C Temp, 1000W/m2 sun, AM1.5 spectrum

Real World Performance	CdTe CuRe	c-Si TOPCon	Watt-Hours per Watt
Bifaciality			
Degradation Rate			
Shading Response			
Temperature Response			
Air Moisture Spectral Response			
Low Light Response			
Incident Angle Response			
Light-Induced Degradation			

 Strong Advantage
 Minor Advantage

Advantage: CuRe Energy Attributes

CuRe Outperforms TOPCon in Energy



Tier 1 c-Si TOPCon Module Datasheet & .pan file: 80% BiFaciality, -0.30 %/°C Temperature Coefficient, -0.4%/yr degradation rate, -1% LID/LeTID

CdTe CuRe Module: 25% Bifaciality, -0.24 %/°C Temperature Coefficient, -0.1%/yr degradation rate.

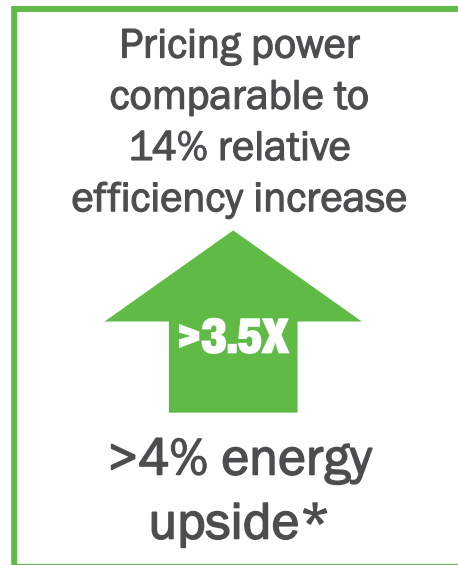
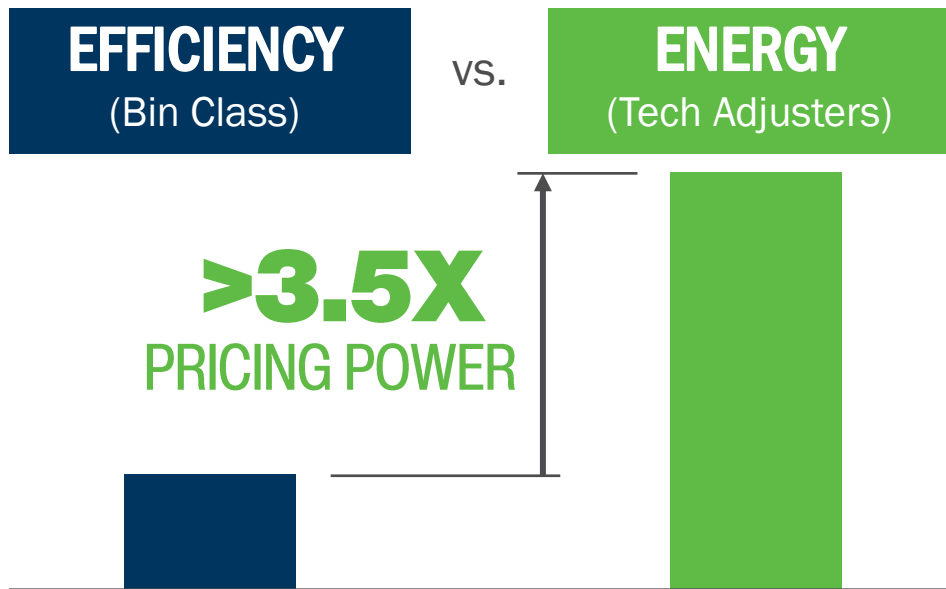
Plant Design: 180 MWdc, Tracker, 1.2 DC/AC Ratio, 35% ground coverage ratio, 30 year life (FS CuRe truetracking enabled, TOPCon backtracking enabled)

Energy analysis modelled with TMY3 weather files, NREL NSRDB albedo and PlantPredict V11 software averaging 58 locations distributed across 13 US states below 37 degrees latitude and greater than -100 degrees longitude (SE US)

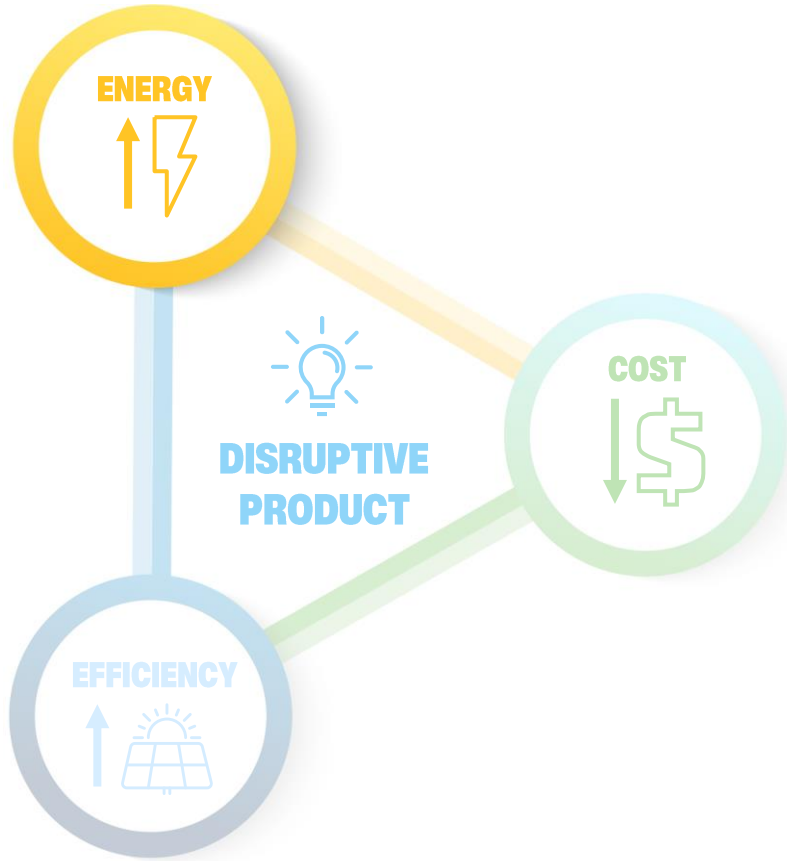
Our Customers Value Energy

Relative Market Value per One Percent Improvement

Calculated from +40GW of First Solar Backlog Contract Values




*Example for Southeast USA



Delivering **ENERGY** **ADVANTAGED** Technology

Thin Film Bifacial

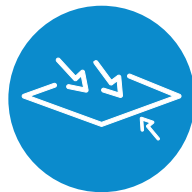
15% Bifaciality  **25%+** Bifaciality Roadmap

1-2%+
Real World Annual Energy



CuRe

Improving the Semiconductor



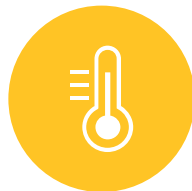
Improved Bifaciality

15% → 25%



Lower Degradation

-0.3 → -0.2 %/year



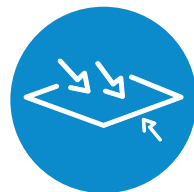
Improved Temperature Coefficient

-0.32 → -0.24 %/°C

CuRe

Launch
2024

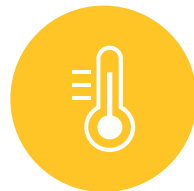
Improving the Semiconductor



Improved Bifaciality
15% → 25%

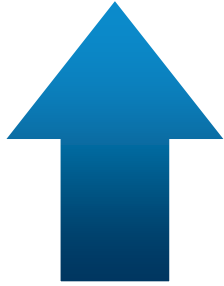


Lower Degradation
-0.3 → -0.2 %/year
Path to -0.1 %/year



Improved Temperature
Coefficient
-0.32 → -0.24 %/°C

Better Performance



Enhance entitlement,
improve properties



Reduce known
loss factors

Advanced Interconnect

United States Patent [19] McMaster

[54] PHOTOVOLTAIC CELL FABRICATION METHOD AND PANEL MADE THEREBY

[75] Inventor: Harold A. McMaster, Woodville, Ohio

[73] Assignee: Glasstech, Inc., Perrysburg, Ohio

[21] Appl. No.: 114,683

[22] Filed: Oct. 29, 1987

[51] Int. Cl.⁴ H01L 27/14; H01L 31/18

[52] U.S. Cl. 136/244; 136/256; 136/258; 437/2; 437/4

[58] Field of Search 437/2, 4, 51, 205; 136/244, 256, 258 AM

References Cited

[56] FOREIGN PATENT DOCUMENTS

60-149178	8/1985	Japan	136/244
62-154788	7/1987	Japan	136/244

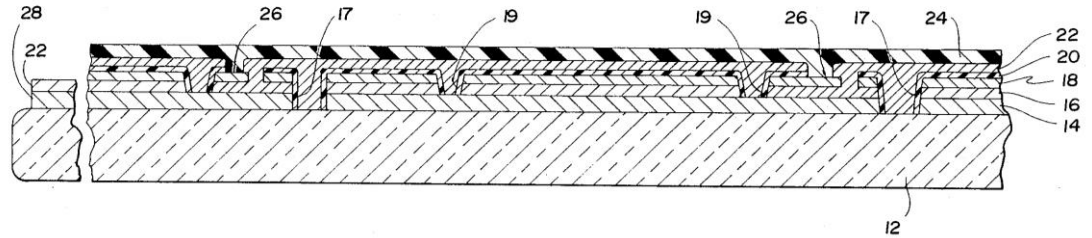
Primary Examiner—Aaron Weisstuch
Attorney, Agent, or Firm—Brooks & Kushman

ABSTRACT

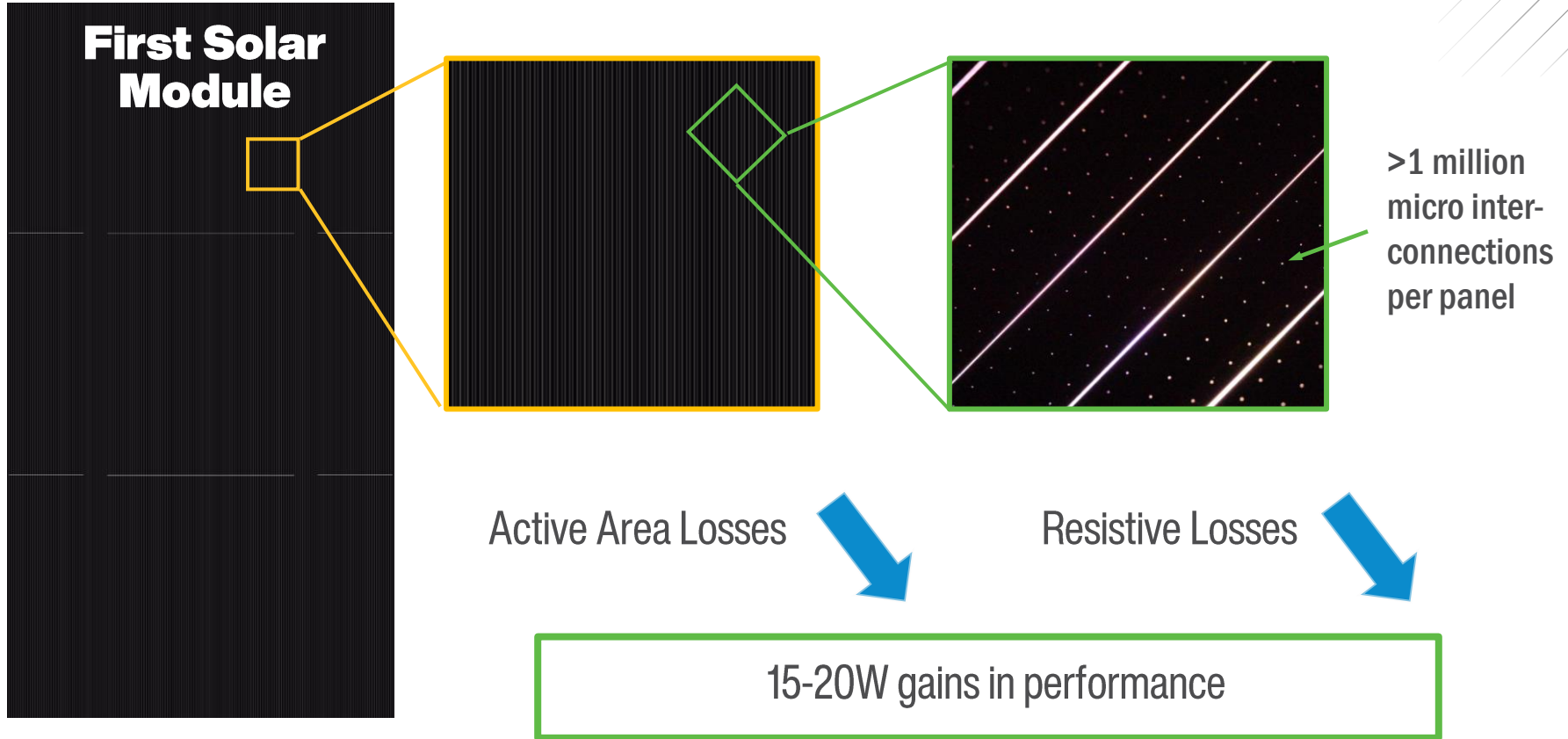
[57] A photovoltaic cell fabrication method and photovol-

[11] Patent Number: 4,872,925
[45] Date of Patent: Oct. 10, 1989

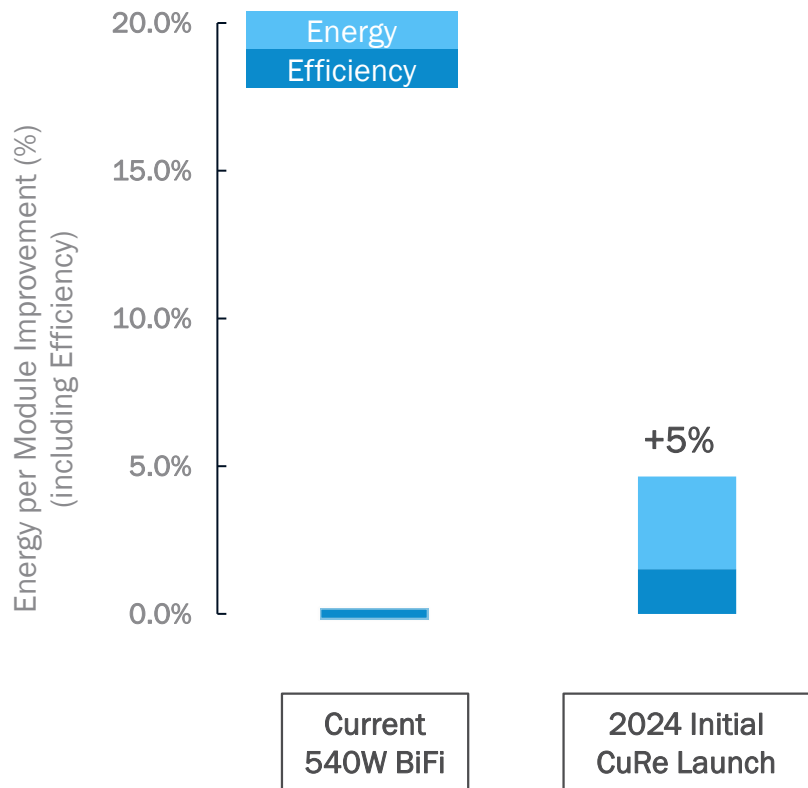
taic cell including a layer of amorphous silicon sandwiched between a transparent sheet electrode and a back sheet electrode. A third sheet electrode is insulated from the back sheet electrode and makes an electrical connection with the transparent sheet electrode at isolated areas by penetrating a dielectric layer which insulates the back and third sheet electrodes. The third sheet electrode also penetrates the back sheet electrode and the amorphous silicon layer at the isolated areas which preferably, form an array of dots or point contacts with the transparent sheet electrode. The transparent sheet electrode is preferably disposed on a glass substrate and the point contacts result in an increase in the active area on the light incident surface of the cell. The frequent electrical connections of the third sheet electrode to the transparent sheet electrode result in lower power losses in the cell.



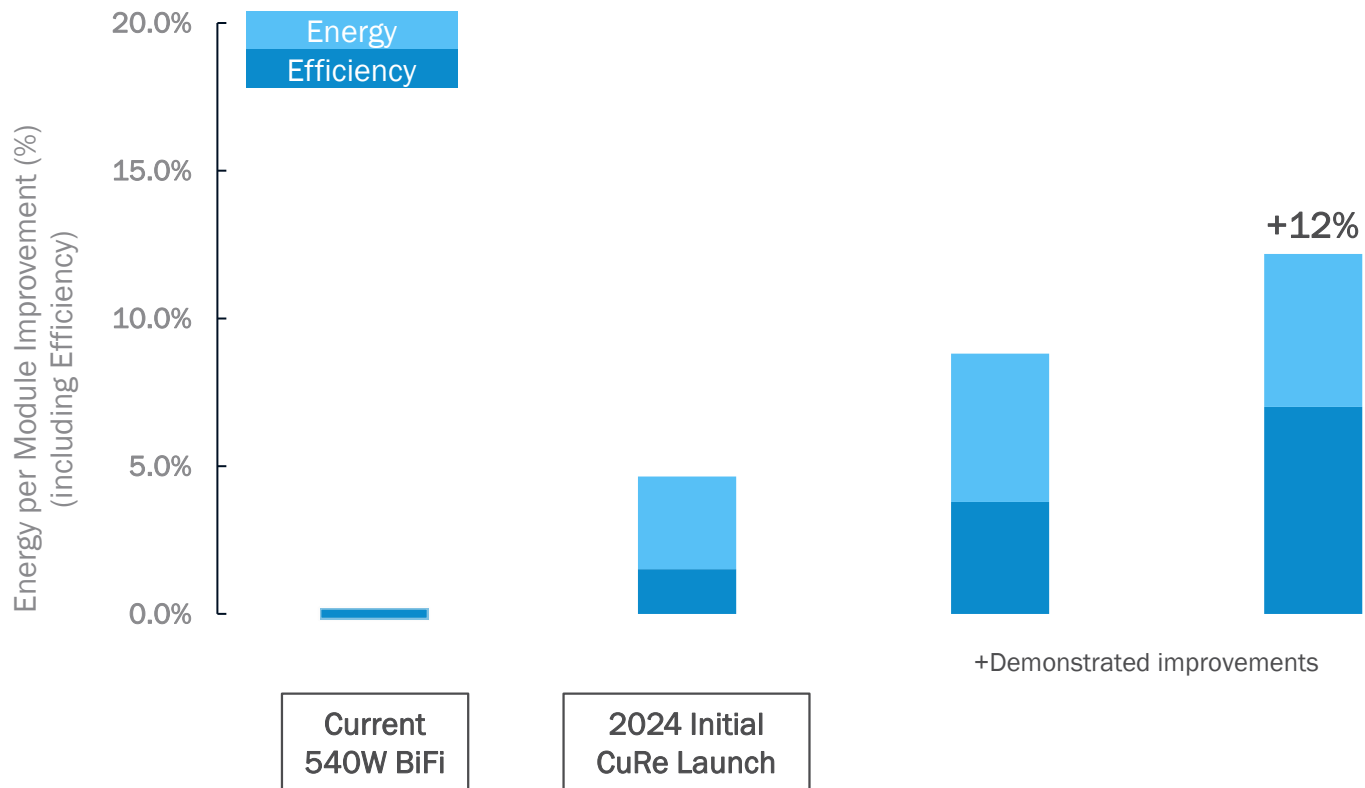
Advanced Interconnect: The Opportunity



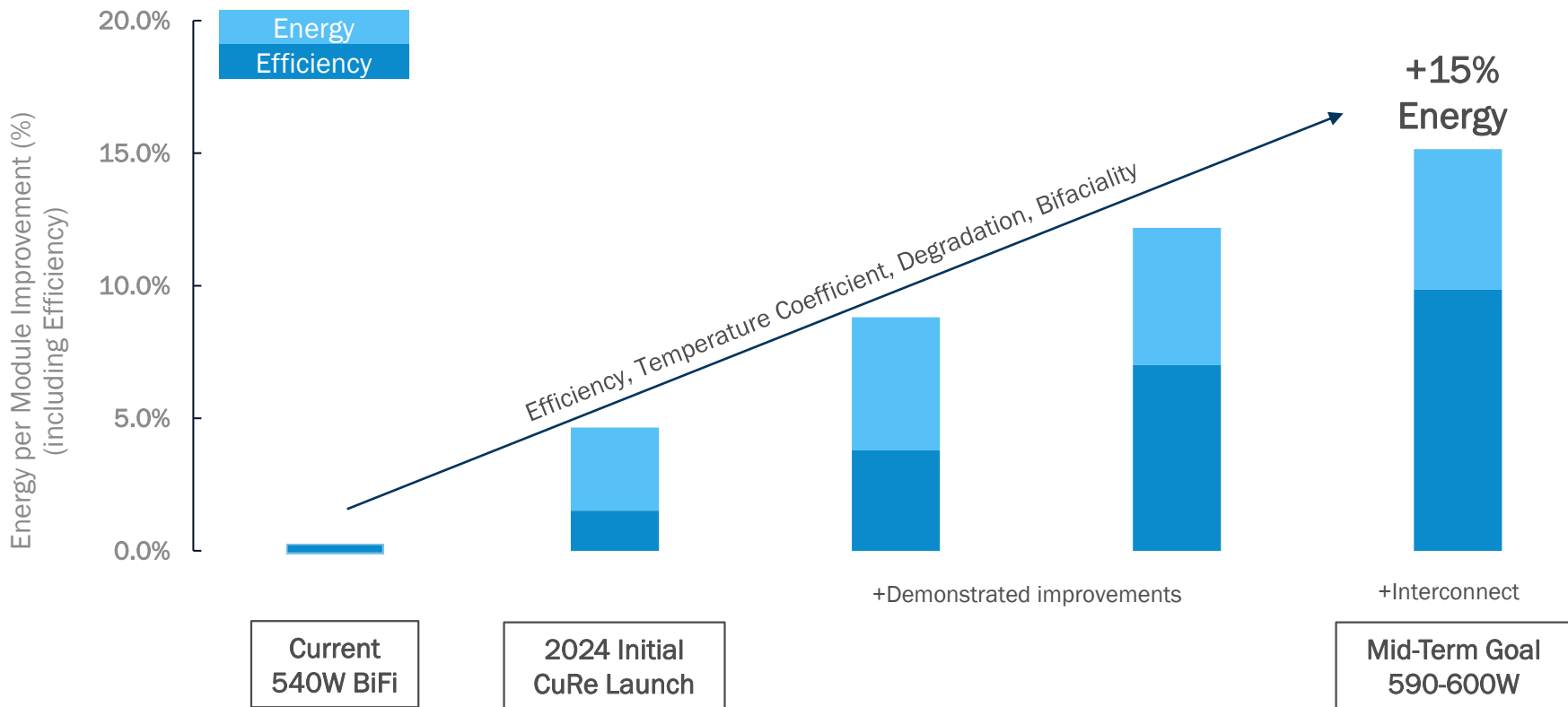
Cell Technology Roadmap



Cell Technology Roadmap



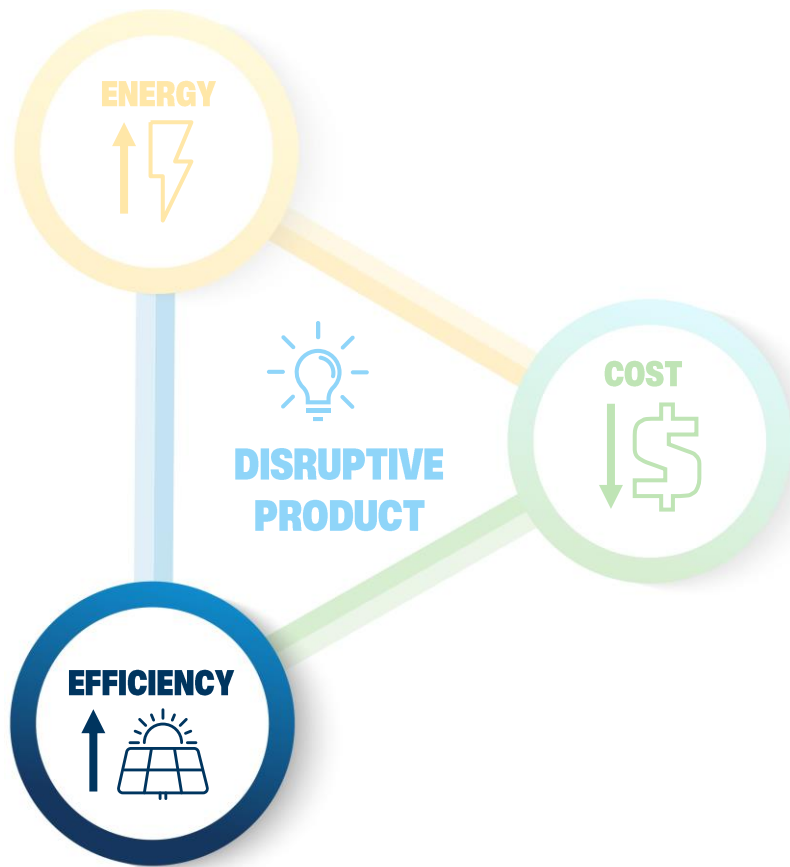
Cell Technology Roadmap





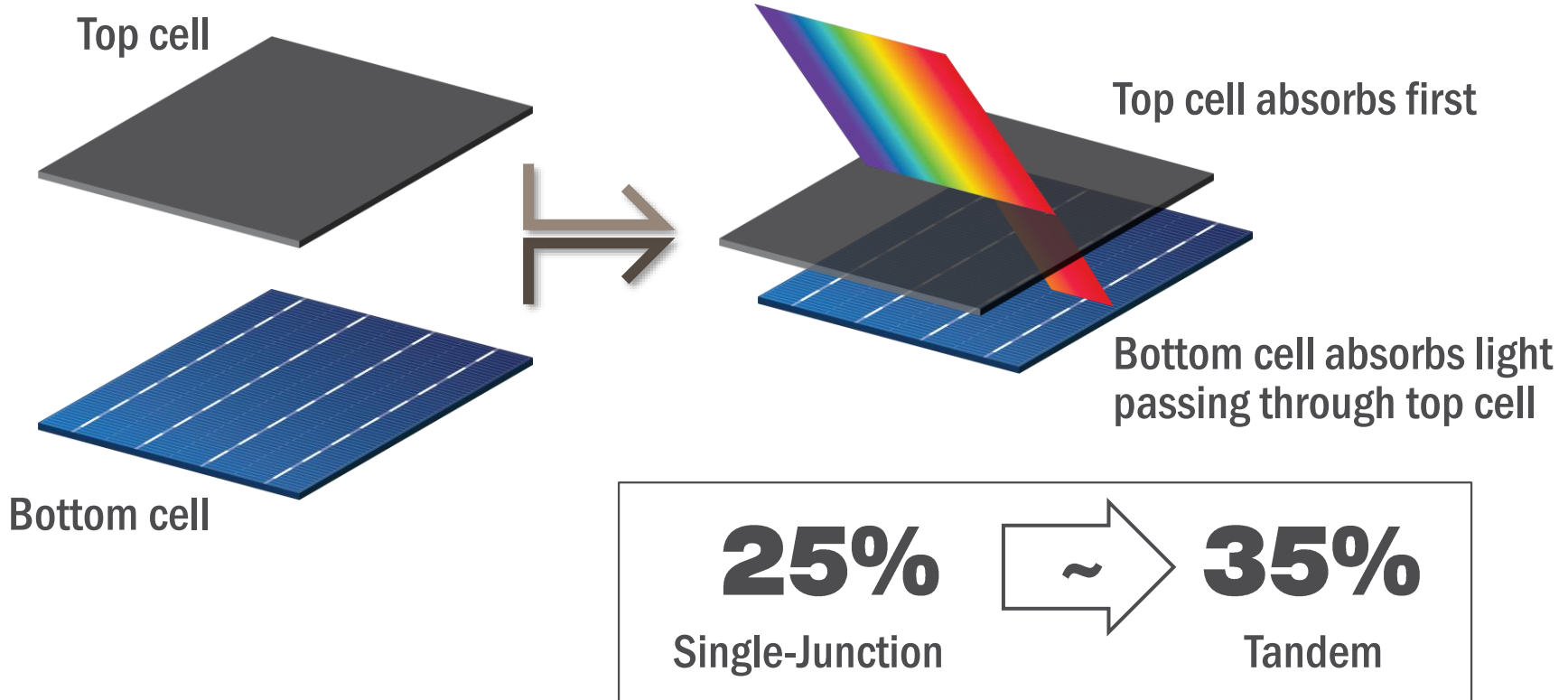
**Invested in
Innovation**





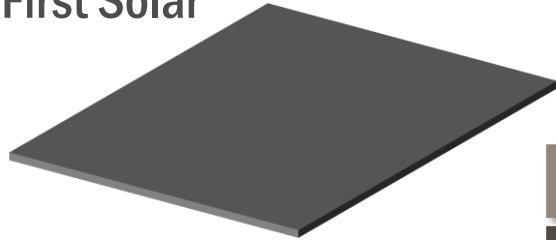
Path to a
DISRUPTIVE
EFFICIENCY
PV Technology

A Tandem Future

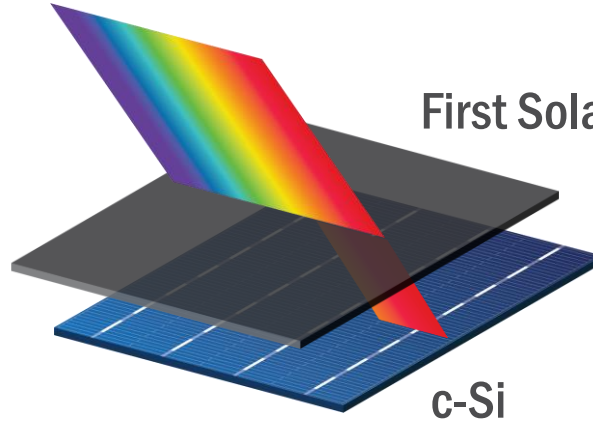


CdTe & c-Si Tandems

First Solar

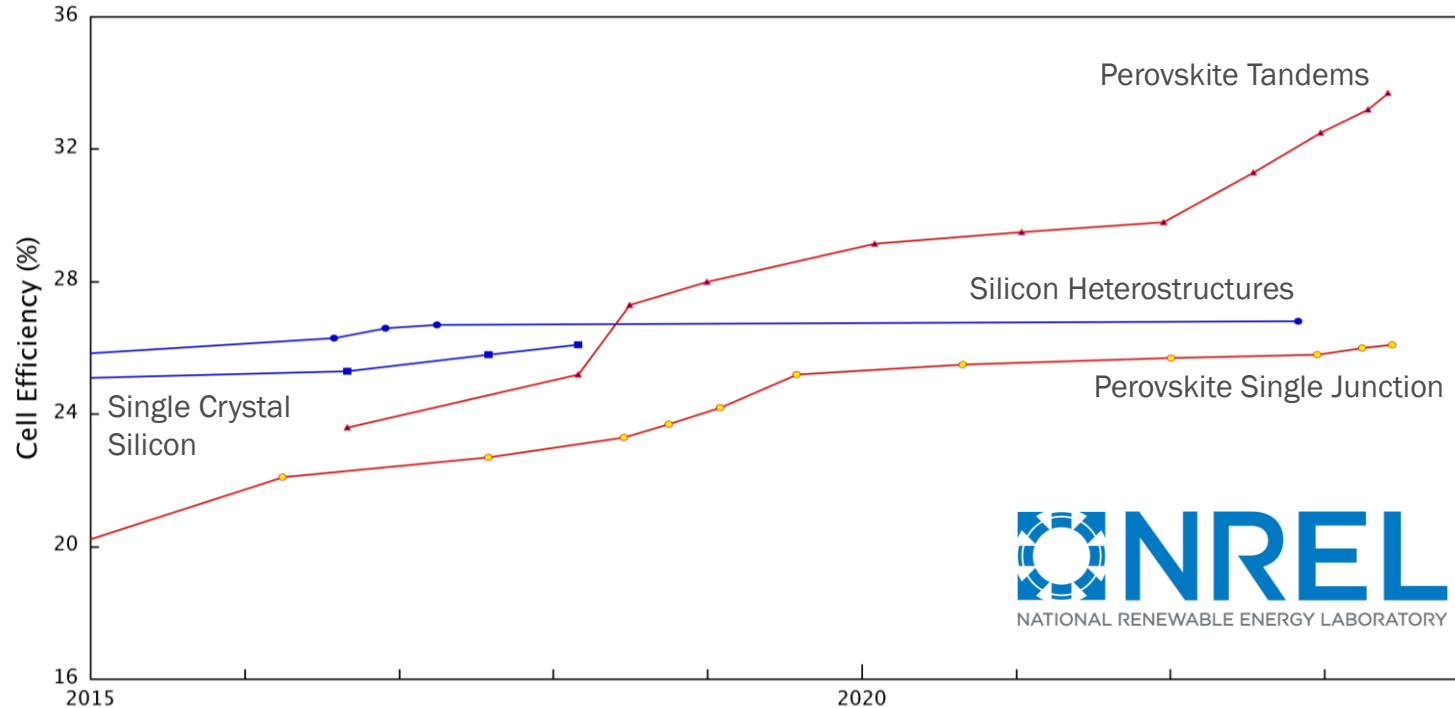


c-Si

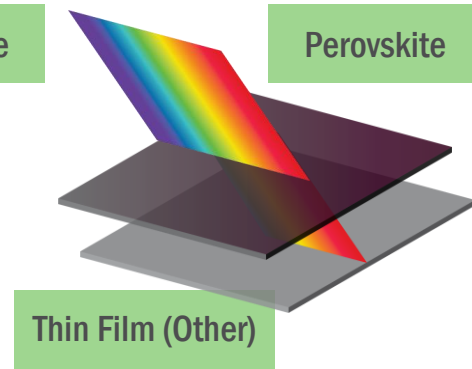
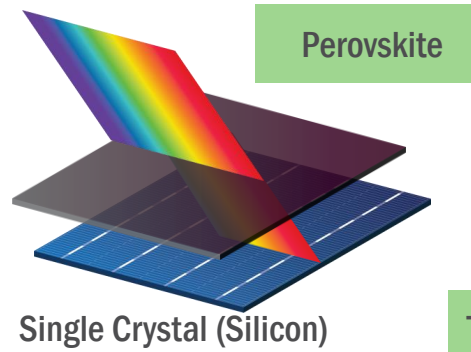
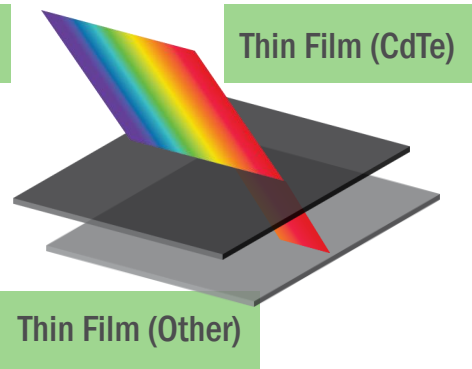
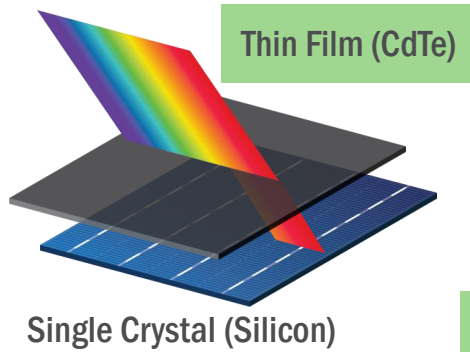


- Viable technology, high cost
- High-efficiency bottom cell required

Perovskites: Next Generation PV?

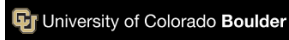


The Future of PV



**There Is No Tandem
Without Thin Film**

Thin Film Differentiation



Thin Film Innovation for the Future of PV



Academic Partnerships



Thin Film Innovation for the Future of PV



Academic Partnerships



Acquiring Know-How



- New dedicated ~\$78M perovskite development line
- Potential for full-scale pilot manufacturing line in the Jim Nolan Center for Solar Innovation

Thin Film Innovation for the Future of PV



Academic Partnerships



Acquiring Know-How



Investing in Scale

Key Takeaways



Efficiency is an incomplete measure



CuRe outperforms TOPCon in lifetime energy



There is no tandem without thin film



First Solar is invested in innovation

**The Future
Belongs to Thin Film.**



Financial Update

Alex Bradley
Chief Financial Officer



LEADING THE WORLD'S
SUSTAINABLE ENERGY FUTURE



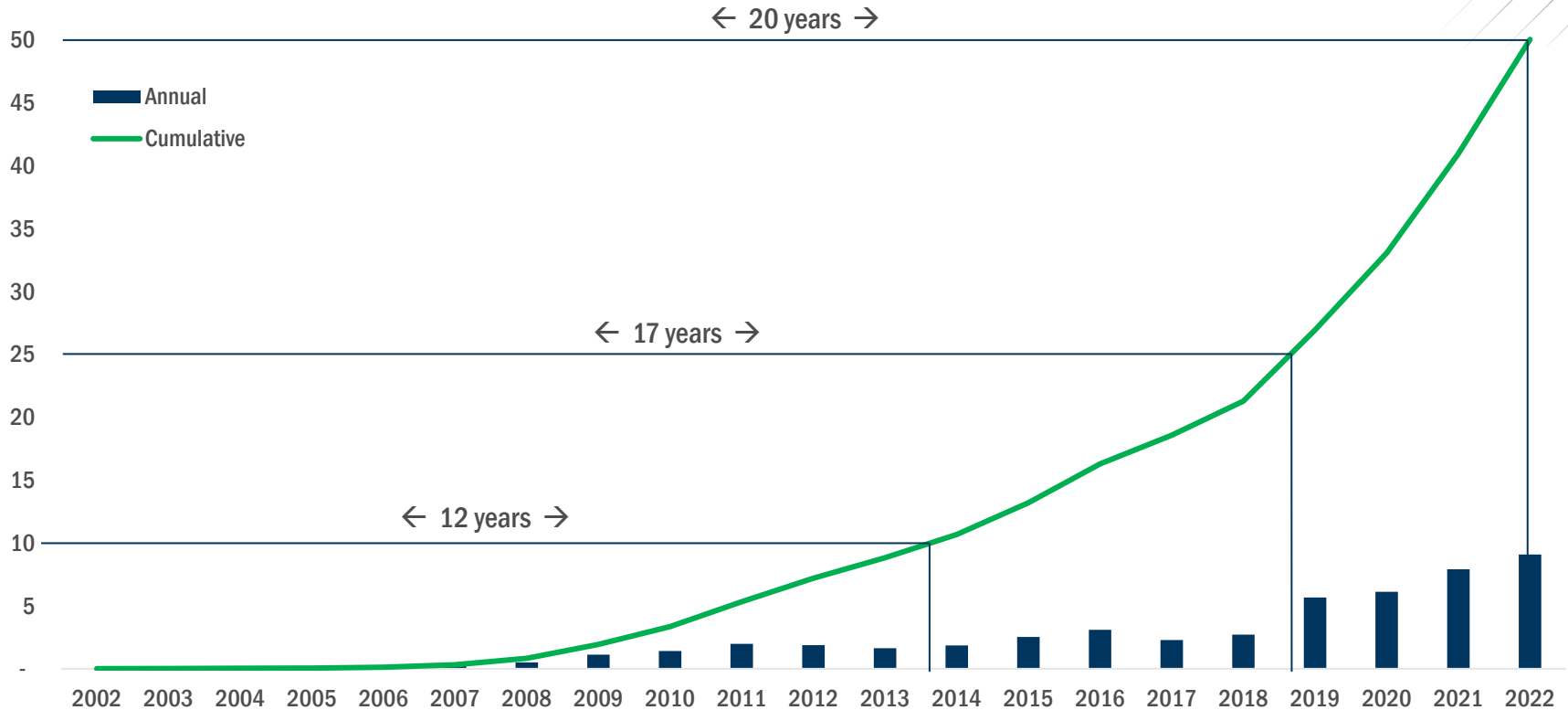
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Cautionary Note Regarding Forward Looking Statements

This presentation contains forward-looking statements which are made pursuant to safe harbor provisions of the Private Securities Litigation Reform Act of 1995. All statements in this presentation, other than statements of historical fact, are forward-looking statements. These forward-looking statements include, but are not limited to, statements concerning: demand for our technology, our business strategy, including anticipated trends and developments in and management plans for our business and the markets in which we operate; our ability to upgrade and expand manufacturing capacity worldwide, including investment in new U.S. manufacturing facilities; increased research and development (“R&D”) programs and investment; our ability to integrate recent strategic acquisitions, including Evolar; a new Series 7 product, including module/day capacity and top production bin; results of our Copper Replacement (“CuRe”) program; the production of bifacial modules; our financial guidance for 2023; projections for future periods including cost per watt, overhead, growth costs, gross and operating margin profile and capital expenditures; volume sold, bookings, booking opportunities, expected module shipments; products and our business and financial objectives; the availability of benefits under certain production linked incentive programs; the impact of the Inflation Reduction Act of 2022 (the “IRA”) including the total advanced manufacturing production credit available to us under Section 45X of the Internal Revenue Code; the ability of our updated contracting structure to provide ASP upsides and gross margin risk mitigation and a meaningful benefit to our current contracted backlog ASPs; our energy yield; our expectations regarding investment in the expansion of our domestic and international capacity and the dedicated R&D innovation center; our expectations regarding our work with partners; and our belief about recently passed legislation.

These forward-looking statements are often characterized by the use of words such as “estimate,” “expect,” “anticipate,” “project,” “plan,” “intend,” “seek,” “believe,” “forecast,” “foresee,” “likely,” “may,” “should,” “goal,” “target,” “might,” “will,” “could,” “predict,” “continue,” “contingent” and the negative or plural of these words and other comparable terminology. Forward-looking statements are only predictions based on our current expectations and our projections about future events and therefore speak only as of the date of this presentation. You should not place undue reliance on these forward-looking statements. We undertake no obligation to update any of these forward-looking statements for any reason, whether as a result of new information, future developments or otherwise. These forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to differ materially from those expressed or implied by our forward-looking statements. These factors include, but are not limited to: structural imbalances in global supply and demand for PV solar modules; our competitive position and other key competitive factors; the market for renewable energy, including solar energy and renewable energy projects; the reduction, elimination, expiration or introduction of government subsidies, policies, and support programs for solar energy projects; the impact of public policies, such as tariffs or other trade remedies imposed on solar cells and modules; the passage of legislation intended to encourage renewable energy investments through tax credits, such as the IRA, the impact of the IRA on our expected results of operations in future periods, which may be affected by technical guidance, regulations, subsequent amendments or interpretations of the law; interest rate fluctuations and both our and our customers’ ability to secure financing; changes in the exchange rates between the functional currencies of our subsidiaries and other currencies in which assets and liabilities are denominated; our ability to execute on our long-term strategic plans; the loss of any of our large customers, or the ability of our customers and counterparties to perform under their contracts with us; our ability to execute on our solar module technology and cost reduction roadmaps; our ability to improve the wattage of our solar modules; our ability to incorporate technology improvements into our manufacturing process, including the production of bifacial solar modules and next generation Series 7 modules; our ability to avoid manufacturing interruptions, including during the ramp of our Series 7 modules manufacturing facilities; the satisfaction of conditions precedent in our sales agreements; our ability to attract new customers and to develop and maintain existing customer and supplier relationships; general economic and business conditions, including those influenced by U.S., international, and geopolitical events; environmental responsibility, including with respect to cadmium telluride (“CdTe”) and other semiconductor materials; claims under our limited warranty obligations; changes in, or the failure to comply with, government regulations and environmental, health, and safety requirements; effects arising from and results of pending litigation; future collection and recycling costs for solar modules covered by our module collection and recycling program; supply chain disruptions, including demurrage and detention charges; our ability to protect our intellectual property; our ability to prevent and/or minimize the impact of cyber-attacks or other breaches of our information systems; our continued investment in research and development; the supply and price of components and raw materials, including CdTe; our ability to construct production facilities to support product lines, including Series 6 and Series 7 module manufacturing; our ability to attract and retain key executive officers and associates; the severity and duration of public health, and the potential impact on our business, financial condition, and results of operations; and the matters discussed under the captions “Risk Factors” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” of our most recent Annual Report on Form 10-K and our subsequently filed Quarterly Reports on Form 10-Q, as supplemented by our other filings with the Securities and Exchange Commission. You should carefully consider the risks and uncertainties described in these reports.

First Solar: Production (GW)



Business Model Philosophy

Differentiation

Competitively advantaged CdTe

Thin Film advantage

Vertically integrated
manufacturing

Sustainability ideology

CREATING
SHAREHOLDER
VALUE

Execution

Disciplined

Data-driven

Agile

Collaborative

Accountable

Balance

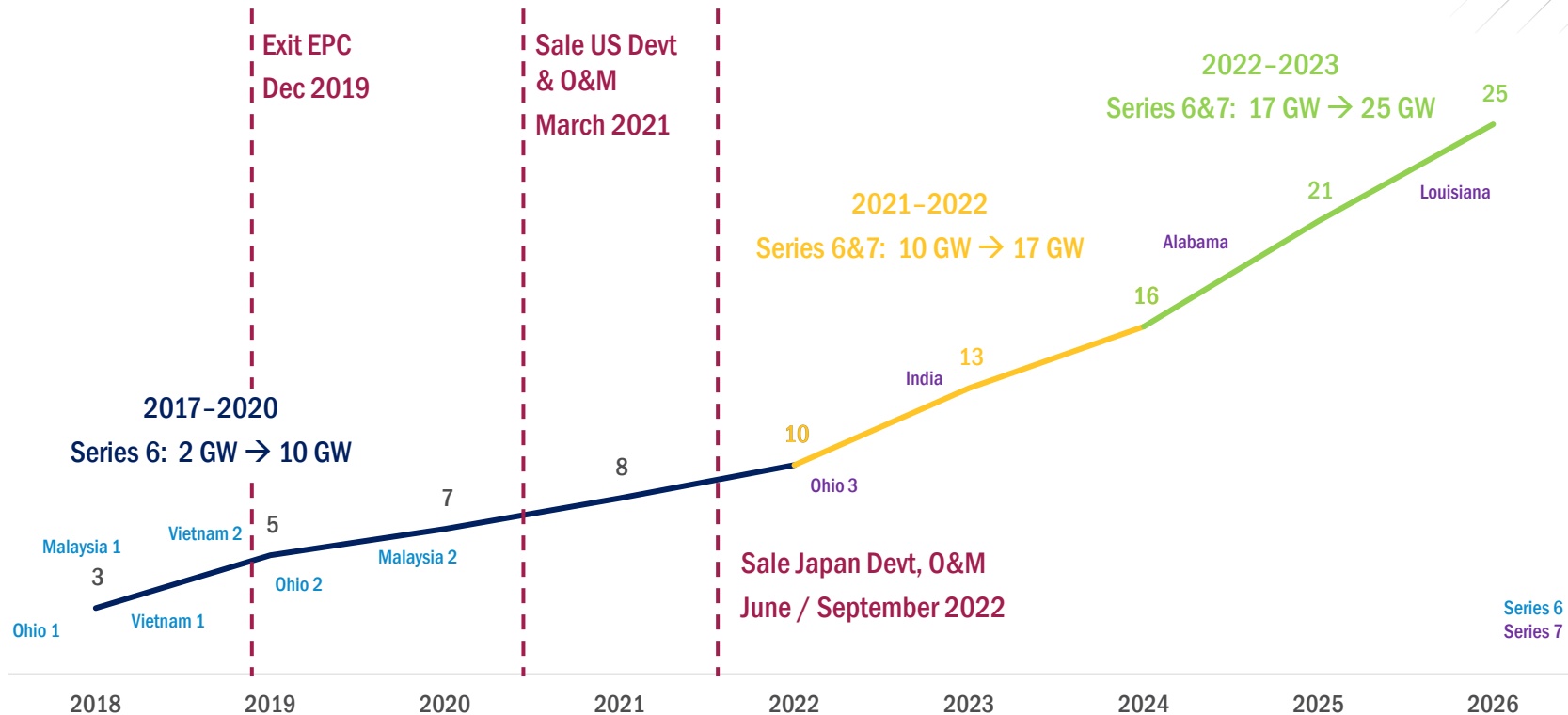
Growth

Profitability

Liquidity

Strategic Intent

Return to our roots as a Technology & Manufacturing Company → Set the stage for Growth ^(GW)



Business Model Philosophy → Investment Thesis

Differentiation

Competitively advantaged CdTe

Thin Film advantage

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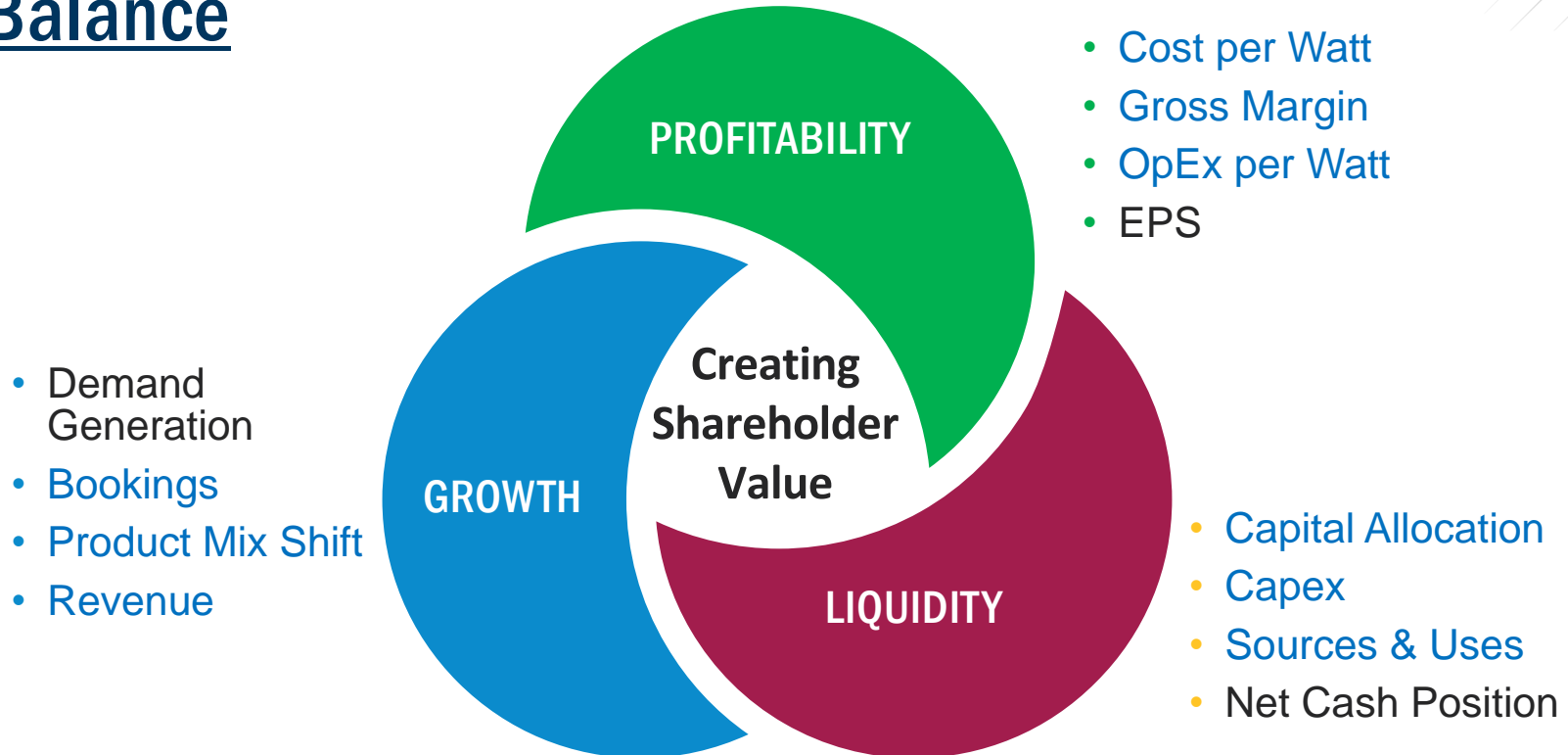
Growth

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Business Model Philosophy → Investment Thesis

Balance



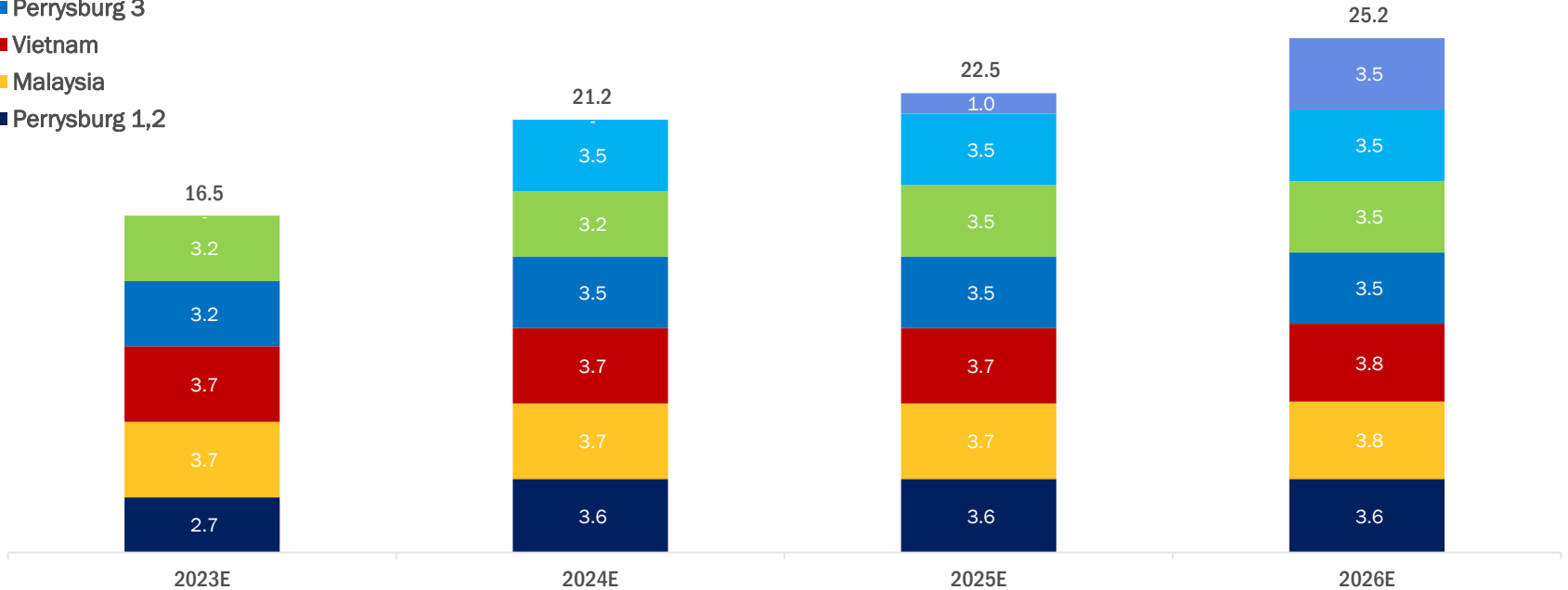


P&L

Manufacturing: Nameplate Capacity (GW)

By Plant

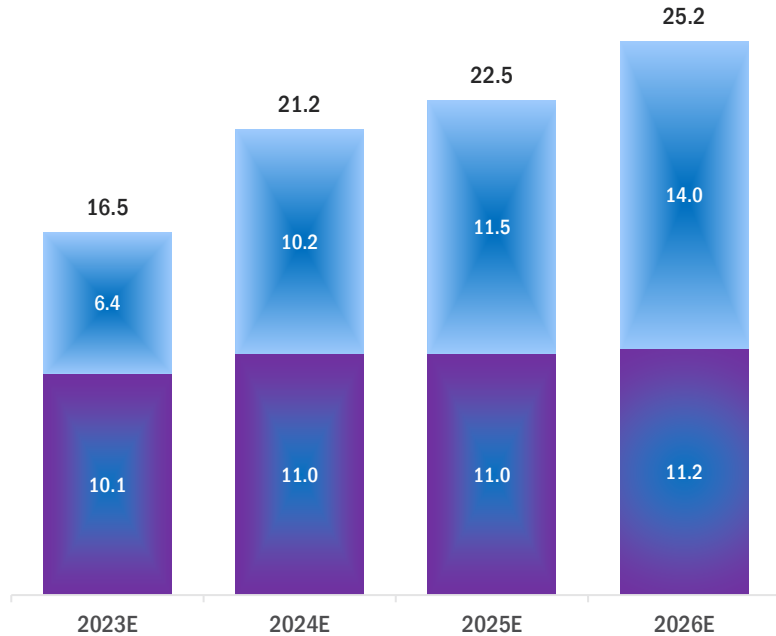
- Louisiana
- Alabama
- India
- Perrysburg 3
- Vietnam
- Malaysia
- Perrysburg 1,2



Manufacturing: Nameplate Capacity (GW)

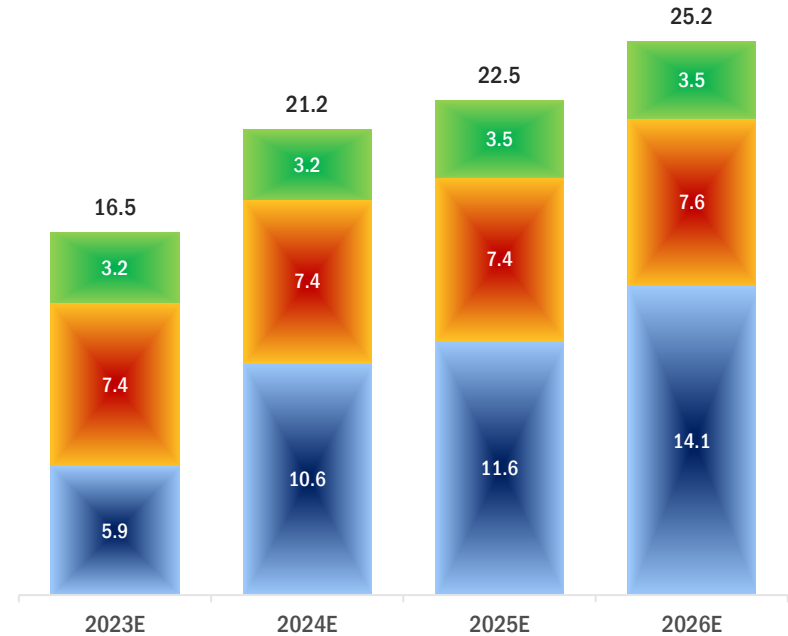
Product Type

- S7
- S6



Geography

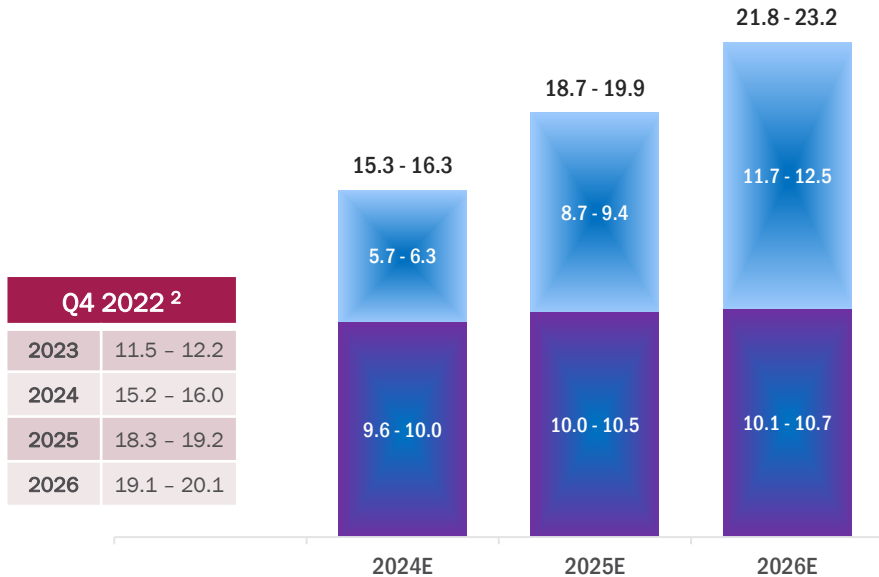
- India
- International ex-India
- US



Manufacturing: Production¹ (GW)

Product Type

- S7
- S6

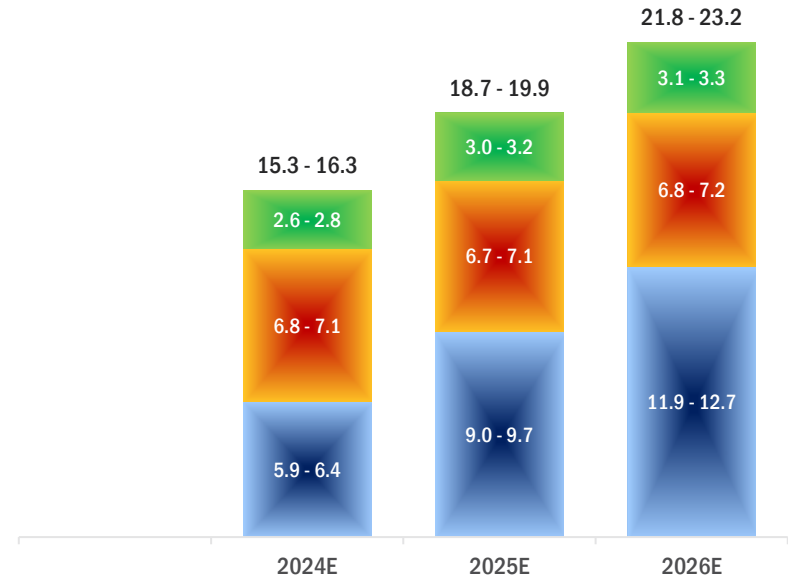


Q4 2022²

2023	11.5 - 12.2
2024	15.2 - 16.0
2025	18.3 - 19.2
2026	19.1 - 20.1

Geography

- India
- International ex-India
- US



(1) Forecast based on management estimates and assumptions as of September 7, 2023

(2) Forecast production as of Q4 2022 earnings call (Feb 28, 2023)

Contracted Position

Structure

Classification (US)

Booked: Signed contract, varied security

Confirmed: Signed contract subject to conditions precedent, options

Classification (India)

Booked: Signed contract, 100% security

Confirmed: Signed contract <100% security, or subject to conditions precedent

Contract types

Individual asset

Framework (Multi year/GW)

Key terms

Price: Fixed price (may have adjustors)

Timing: Fixed (may have flexibility within boundaries)

Certainty: ~14% backlog contains termination for convenience clause (penalty typically ~20% of ASP)

Volume

US / Rest of World

Booked 2024 →: 70.8 GW

Confirmed 2024 →: 4.8GW

(Q2 2023 Earnings call reconciliation)

Booked: 2023: 7.0 GW, 2024 → 70.8 GW, total 77.8 GW

Confirmed: Ex India 4.8 GW, India 1.9 GW, total 6.7 GW

Sold position (Ex-India)

Fully sold / over-allocated through 2026

Over-Allocation

Provides resiliency to (i) project timing shifts, and (ii) framework agreement uncertainty

Risk mitigated through (i) India supply into U.S., (ii) long term customer relationships

Pricing¹

US / Rest of World

Fleet average base ASP 29.8 c/w

2024 ASP ~28.6 c/w

2025/2026 ASP ~30 c/w

Technology upside

Updated technology rollout schedule pushes out technology upside

\$0.4B / 40 GW / ~1 c/w ASP

(\$0.1B 2024 / \$0.1B 2025 / \$0.2B 2026 →)

Risk Mitigation

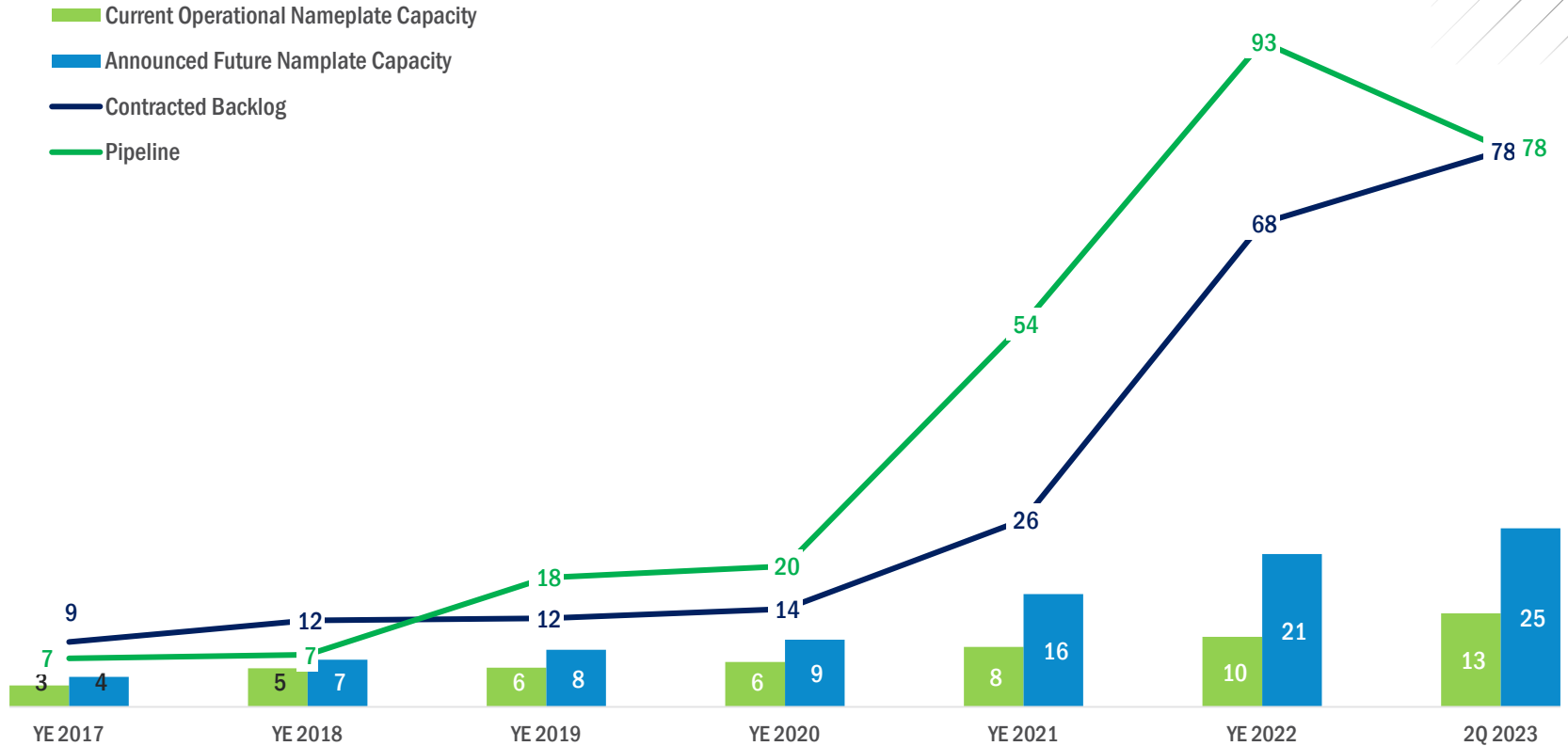
Contractual cost risk mitigation:

Frame (Steel / Aluminum): 85%

Sales Freight: 95%
(% of backlog covered)

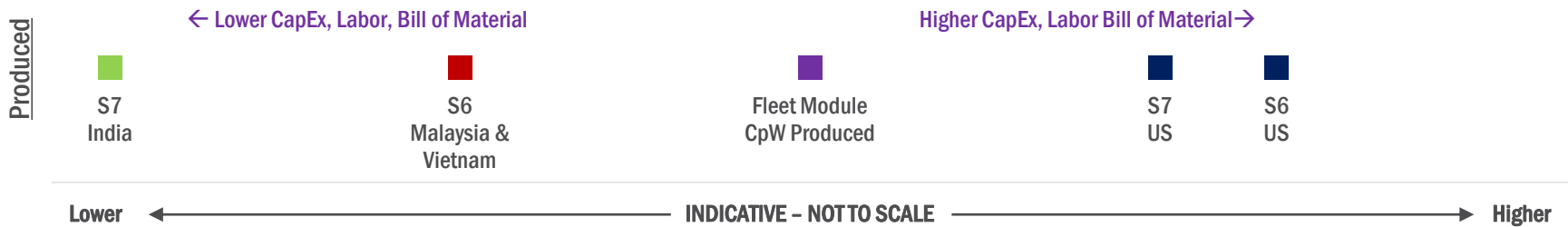
(1) Fleet average ASP of 29.8 c/w normalized by 2.5 c/w for 6.5GW of backlog with FCA incoterms and no associated sales freight cost, impacts fleet average ASP by 0.2 c/w

Contracted Position: Historical Context (GW)

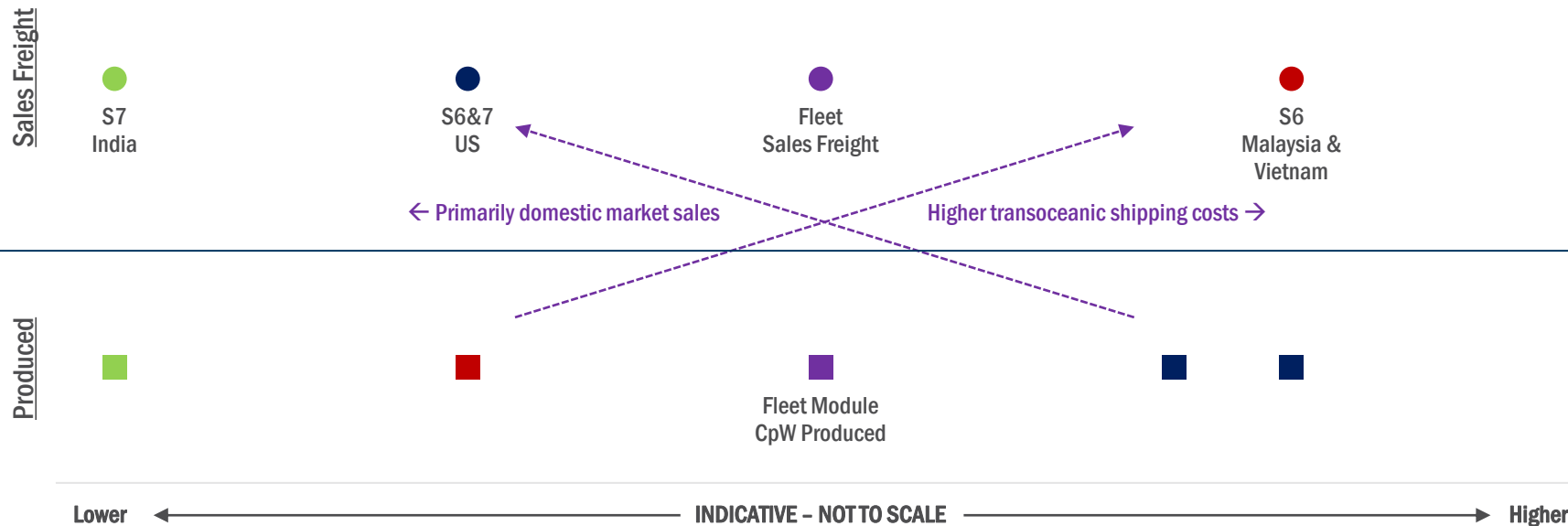


Contracted backlog (bookings) and pipeline as of Q4 earnings calls for the years 2017-2022, and as of the Q2 earnings call for Q2 2023. Pipeline shown is total bookings opportunities except 2017 and 2018, which include only mid to late stage bookings opportunities

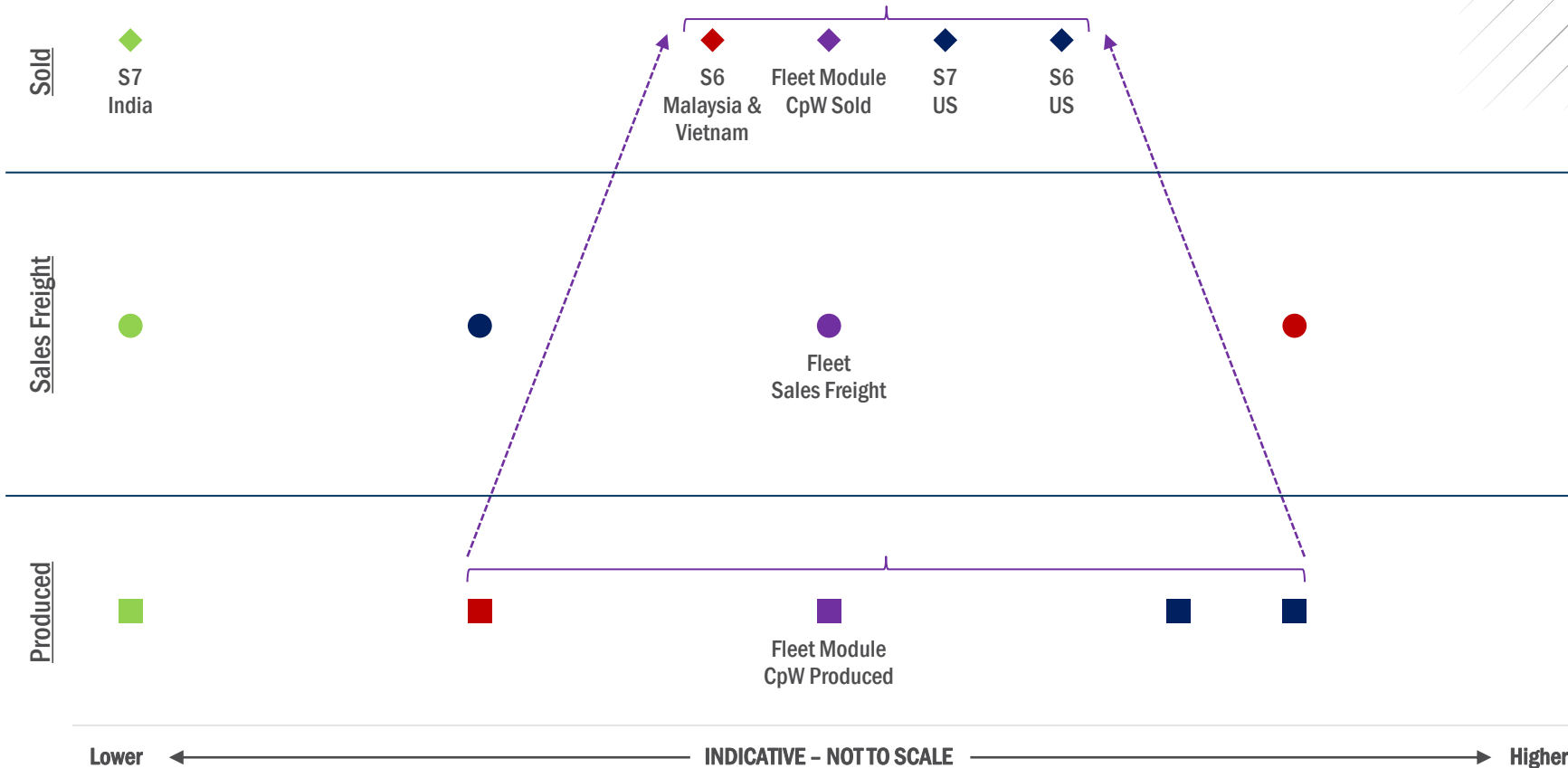
Cost per Watt



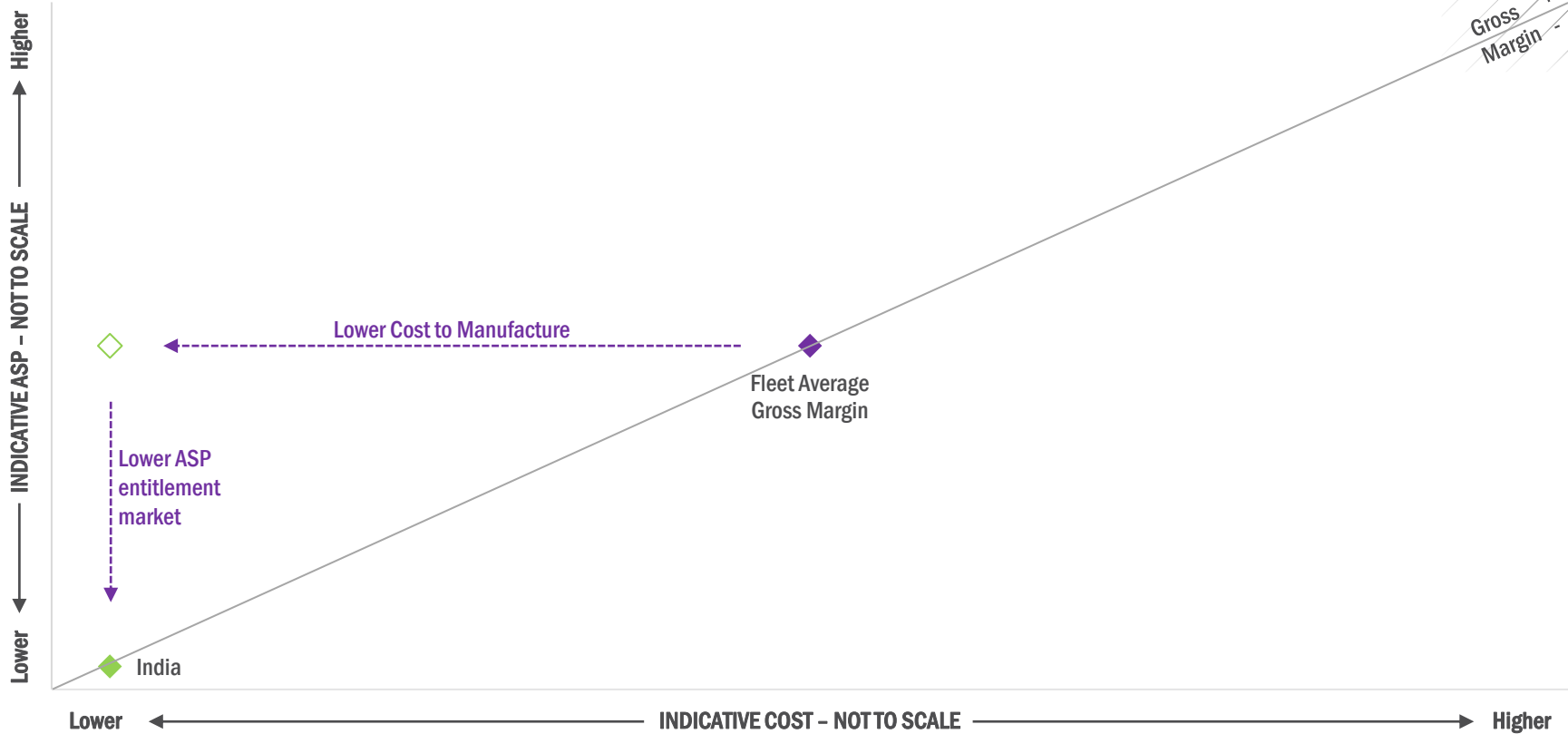
Cost per Watt



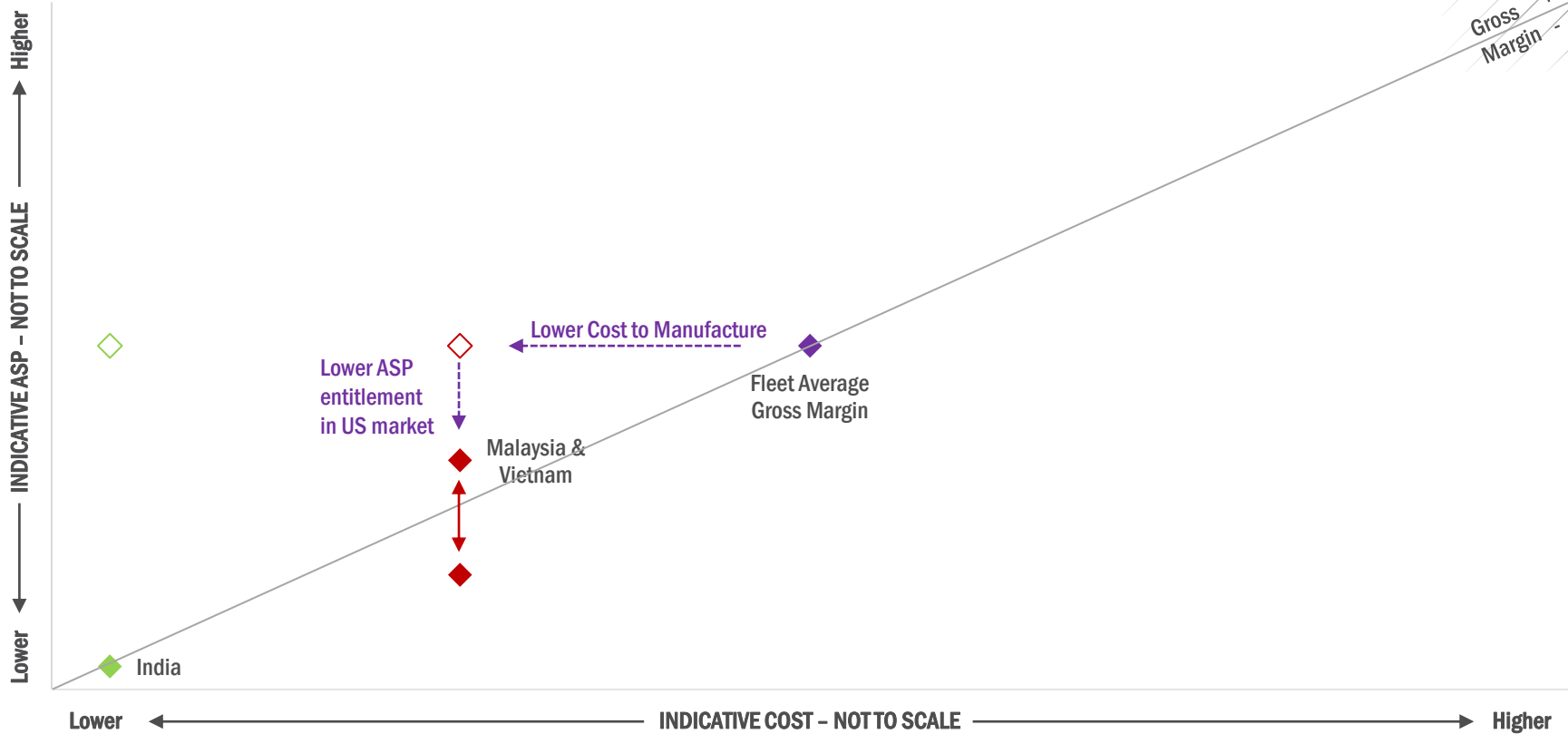
Cost per Watt



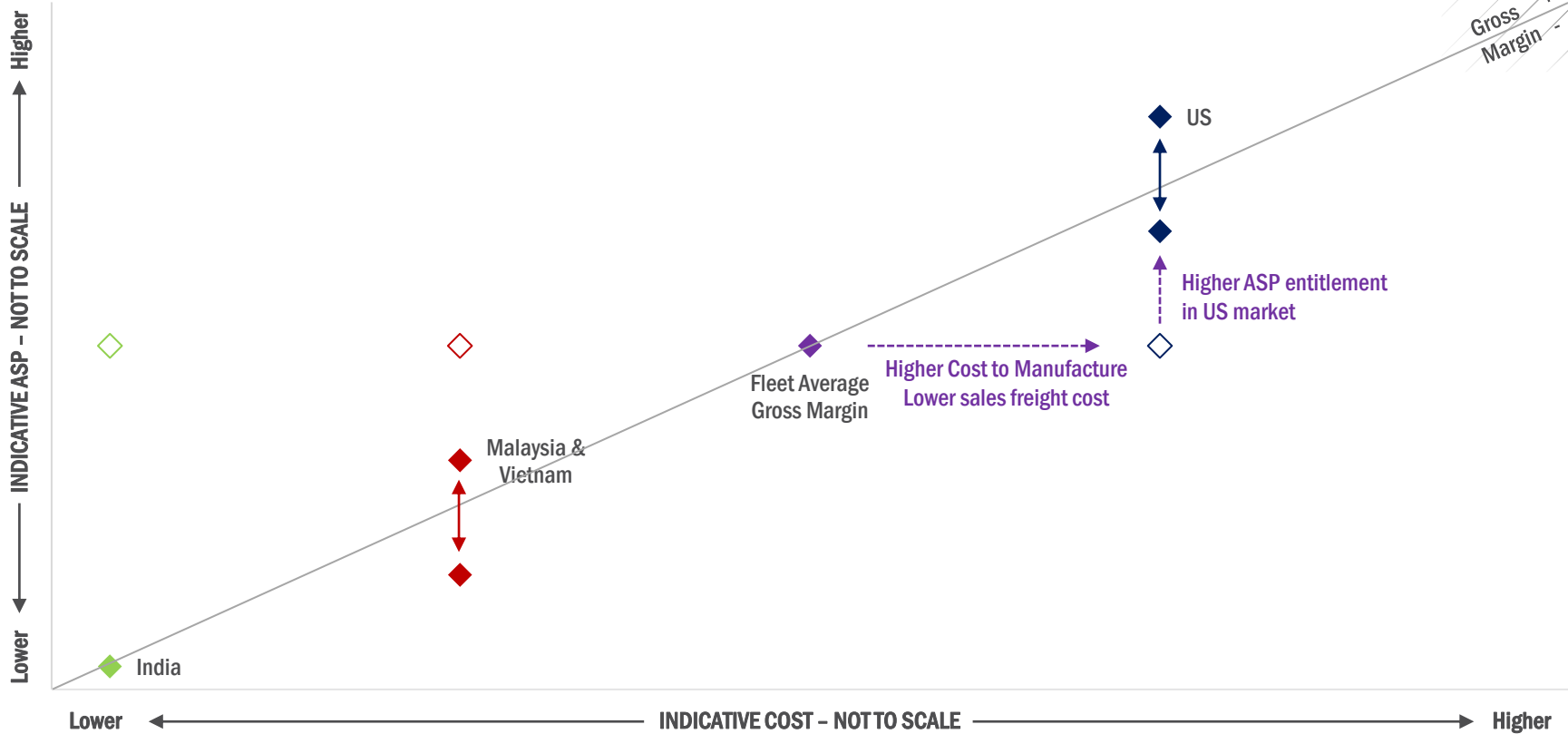
Cost per Watt: Gross Margin Impact



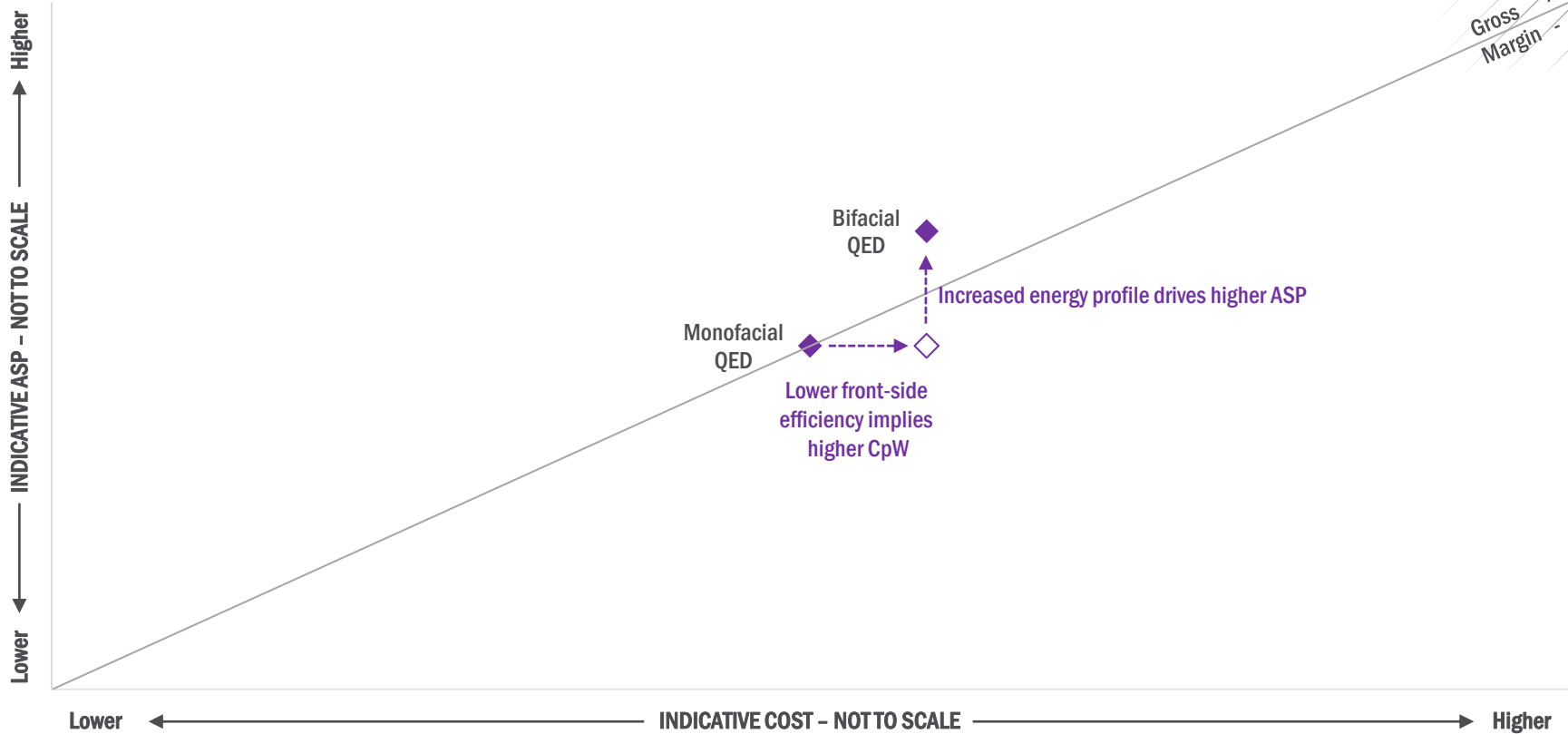
Cost per Watt: Gross Margin Impact



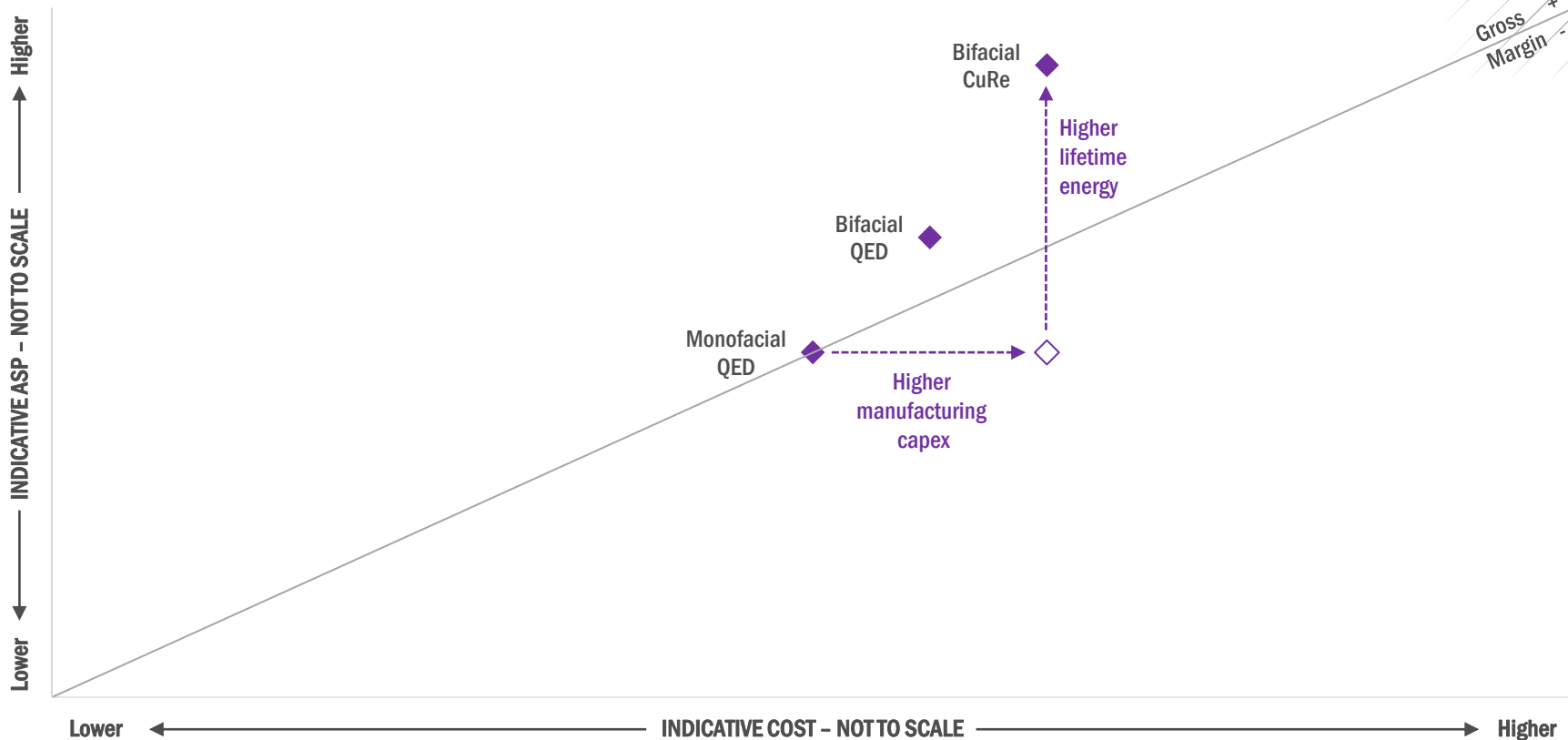
Cost per Watt: Gross Margin Impact



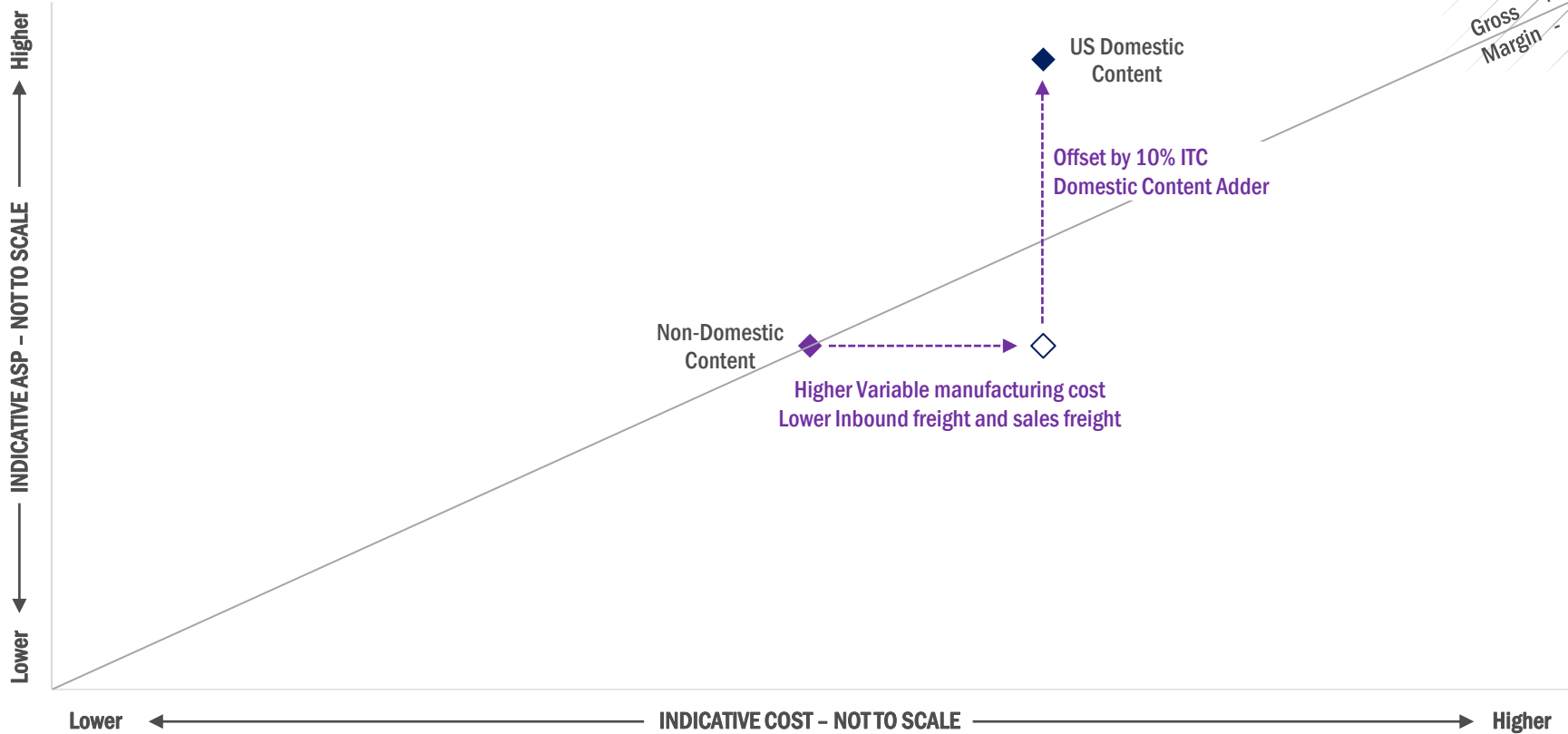
Cost per Watt: Gross Margin Impact



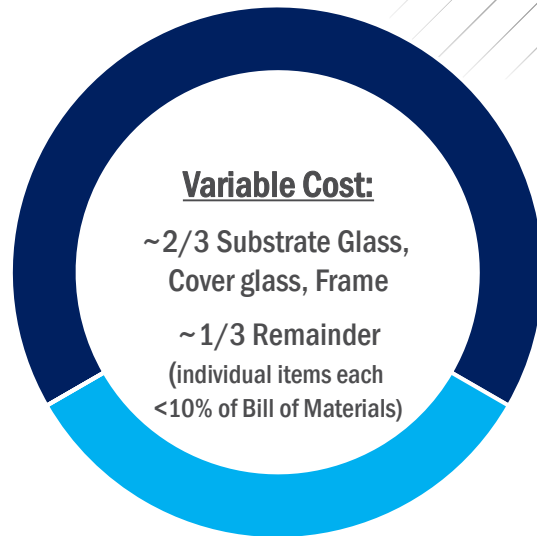
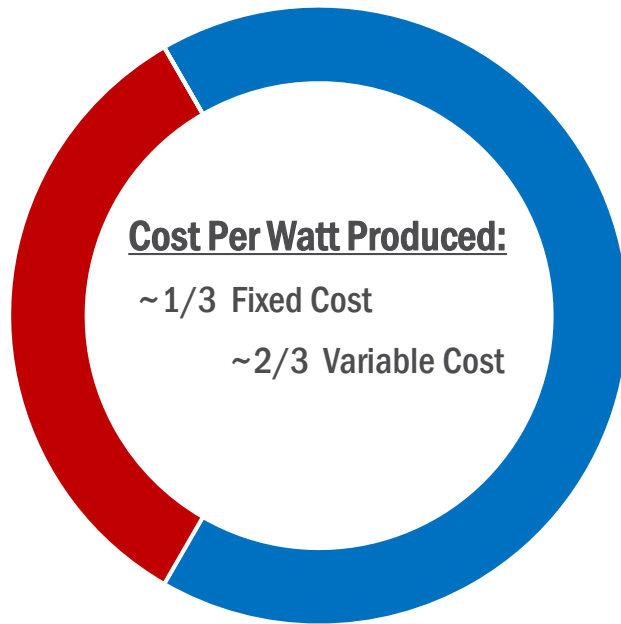
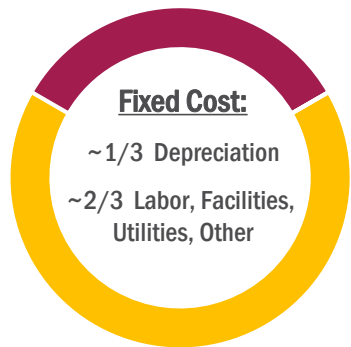
Cost per Watt: Gross Margin Impact



Cost per Watt: Gross Margin Impact



Cost per Watt: Risk Mitigation



Cost per Watt Produced:

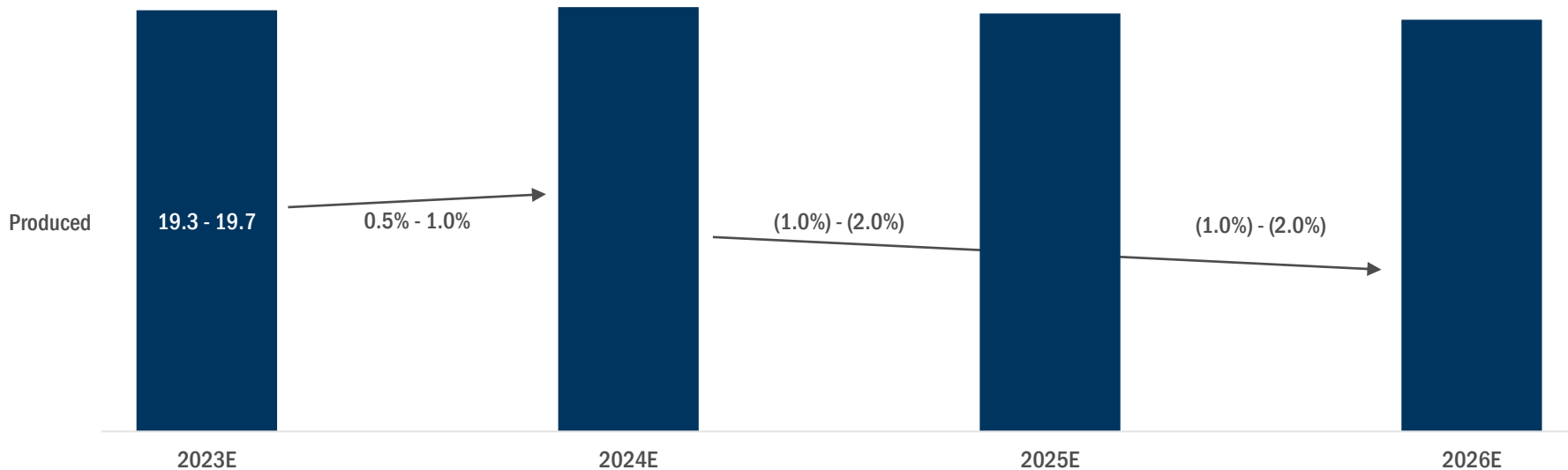
~75% of module production cost de-risked through ~5+ year period through combination of (i) fixed costs¹; (ii) long term supplier agreements (including glass); (iii) customer risk pass through (frame)

Sales Freight:

~95%+ of contracts de-risked through customer pass through (Incoterms or excess freight pass through clause)

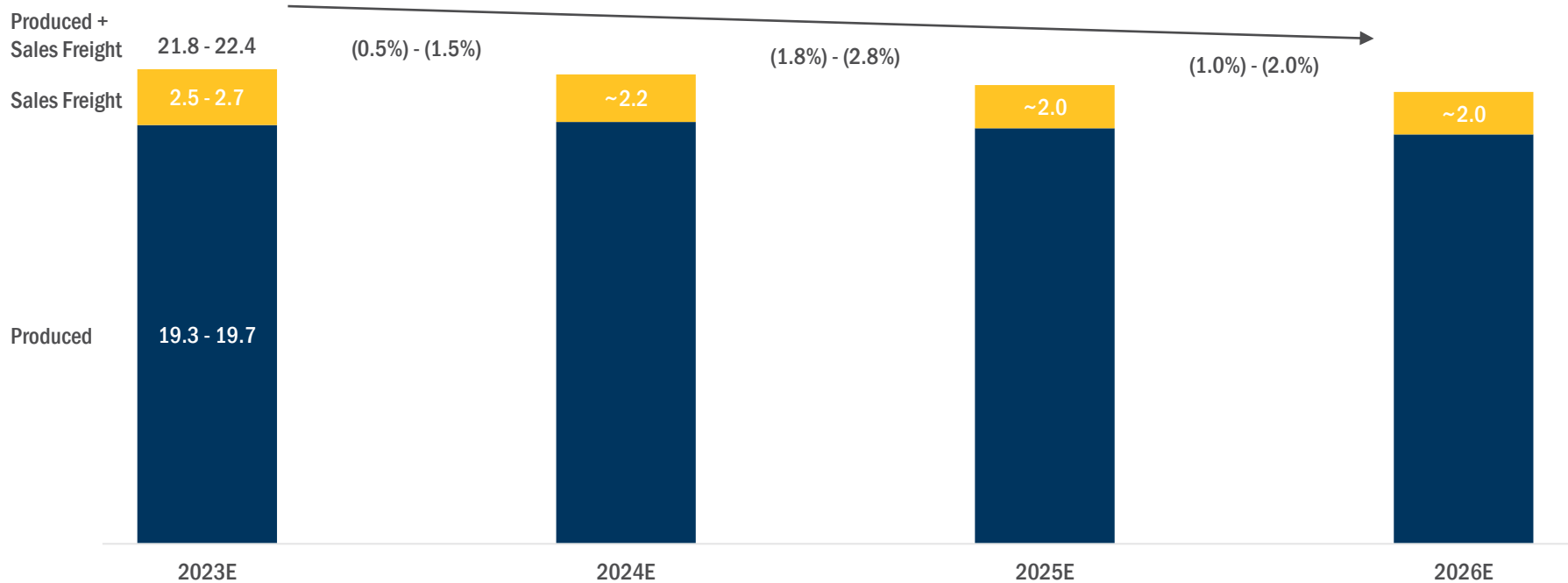
(1) Assumes utility and labor usage fixed, utility and labor rates indexed to inflation

Cost per Watt: Expected (cents/w & % change)



Fleet average cost per watt, excluding ramp cost
Forecast based on management estimates and assumptions as of September 7, 2023

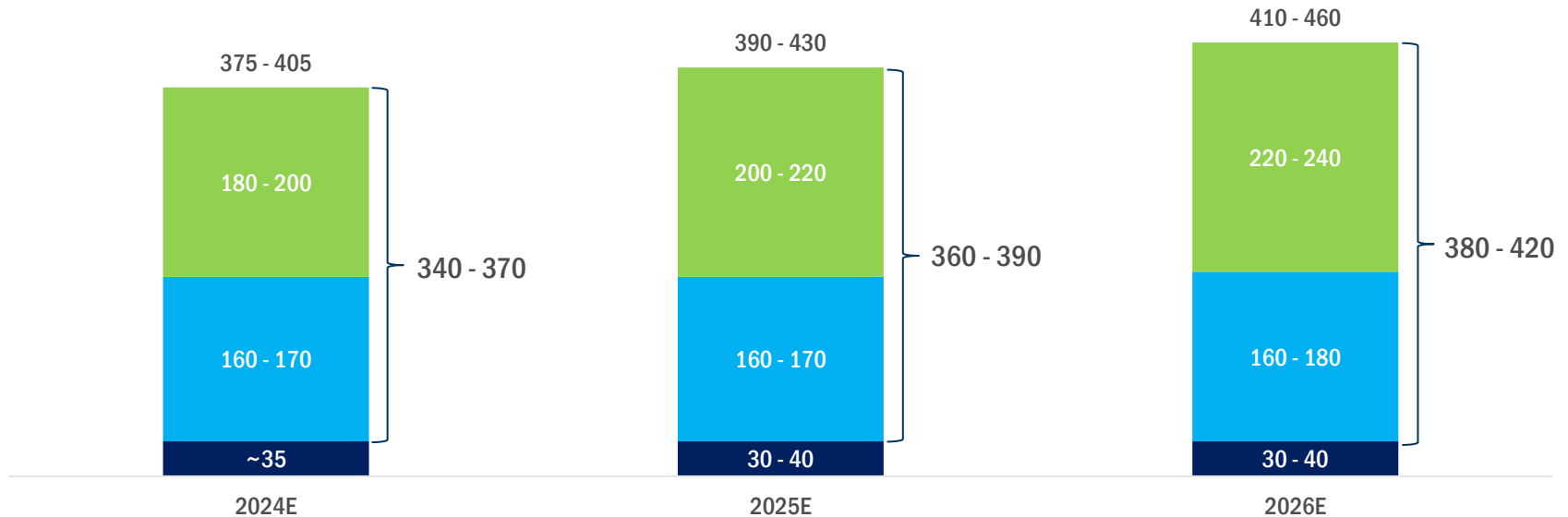
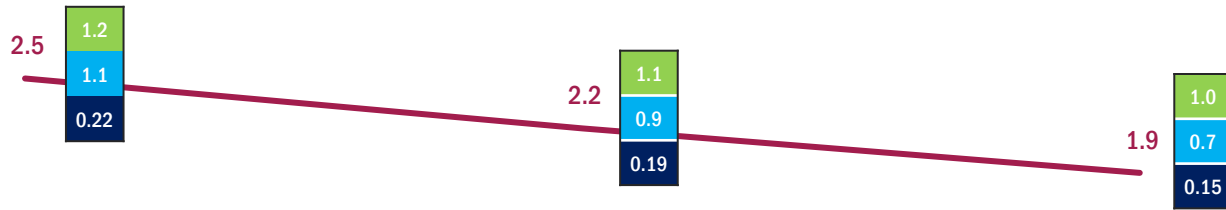
Cost per Watt: Expected (cents/w & % change)



Fleet average cost per watt, excluding ramp cost
 Forecast based on management estimates and assumptions as of September 7, 2023

Overhead¹ (\$m & cents/w)

- R&D
- SGA
- Mfg Period Charges
- Implied c/w



(1) Forecast expenses for R&D and SGA (reported within Operating Expenses) and manufacturing period charges (reported within Cost of Sales) Based on management estimates and assumptions as of September 7, 2023.

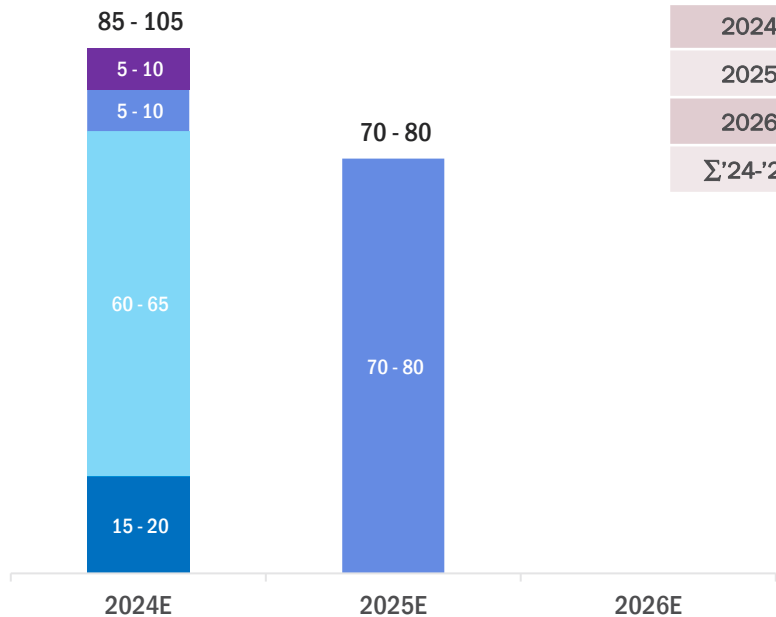
Growth Costs

	Production start-up	Ramp
Definition	<ul style="list-style-type: none"> • New / existing sites • Fixed & variable production costs • Costs for (i) new site selection, (ii) operating a production line before qualified for commercial production, and (iii) implementing manufacturing improvements 	<ul style="list-style-type: none"> • New / existing sites • Fixed production overhead costs • Incurred when plant production is below normal capacity (i.e., <75% utilization)
Timing	<ul style="list-style-type: none"> • Pre-production • Typically occurs during periods of initial ramp or manufacturing process improvements 	<ul style="list-style-type: none"> • In production • During periods of initial ramp and unplanned downtime
Financial Statements	<ul style="list-style-type: none"> • Period Expense through production start-up expense (OpEx) 	<ul style="list-style-type: none"> • Period Expense through cost of sales

Growth Costs (\$m)

Production start-up

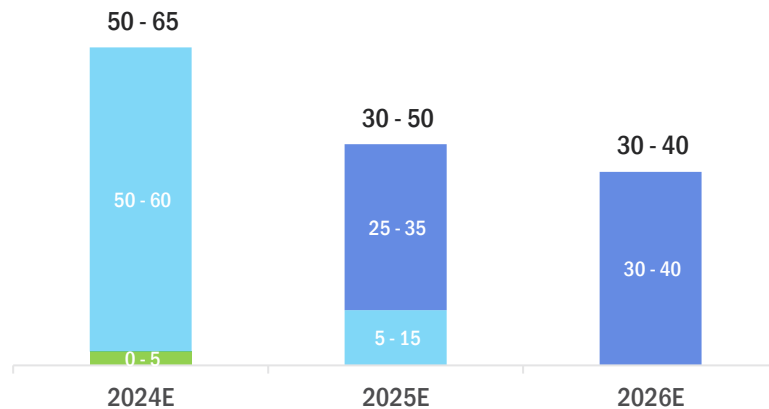
Ohio India Alabama Louisiana CuRe



Total	
2024	135 - 170
2025	100 - 130
2026	30 - 40
Σ '24-'26	265 - 340

Ramp

Ohio India Alabama Louisiana CuRe

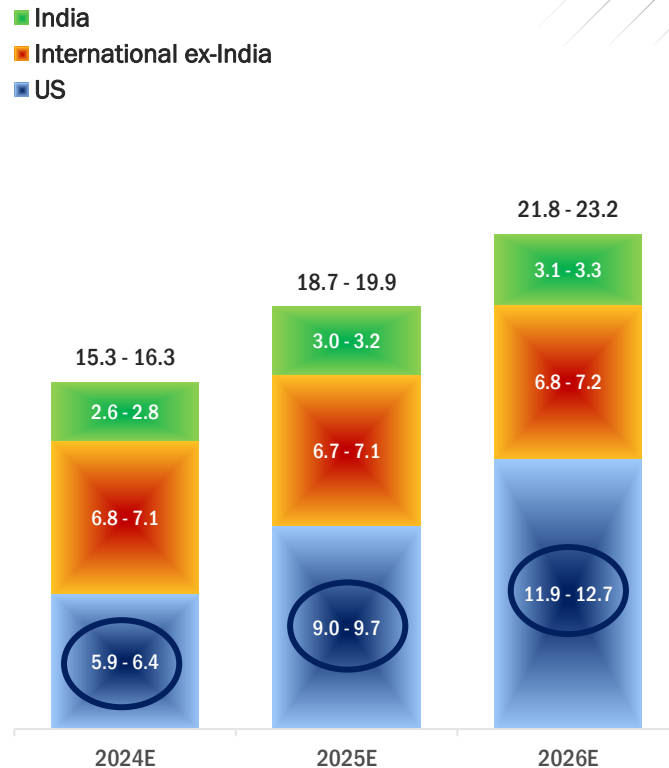


IRA: Section 45X Production Tax Credit

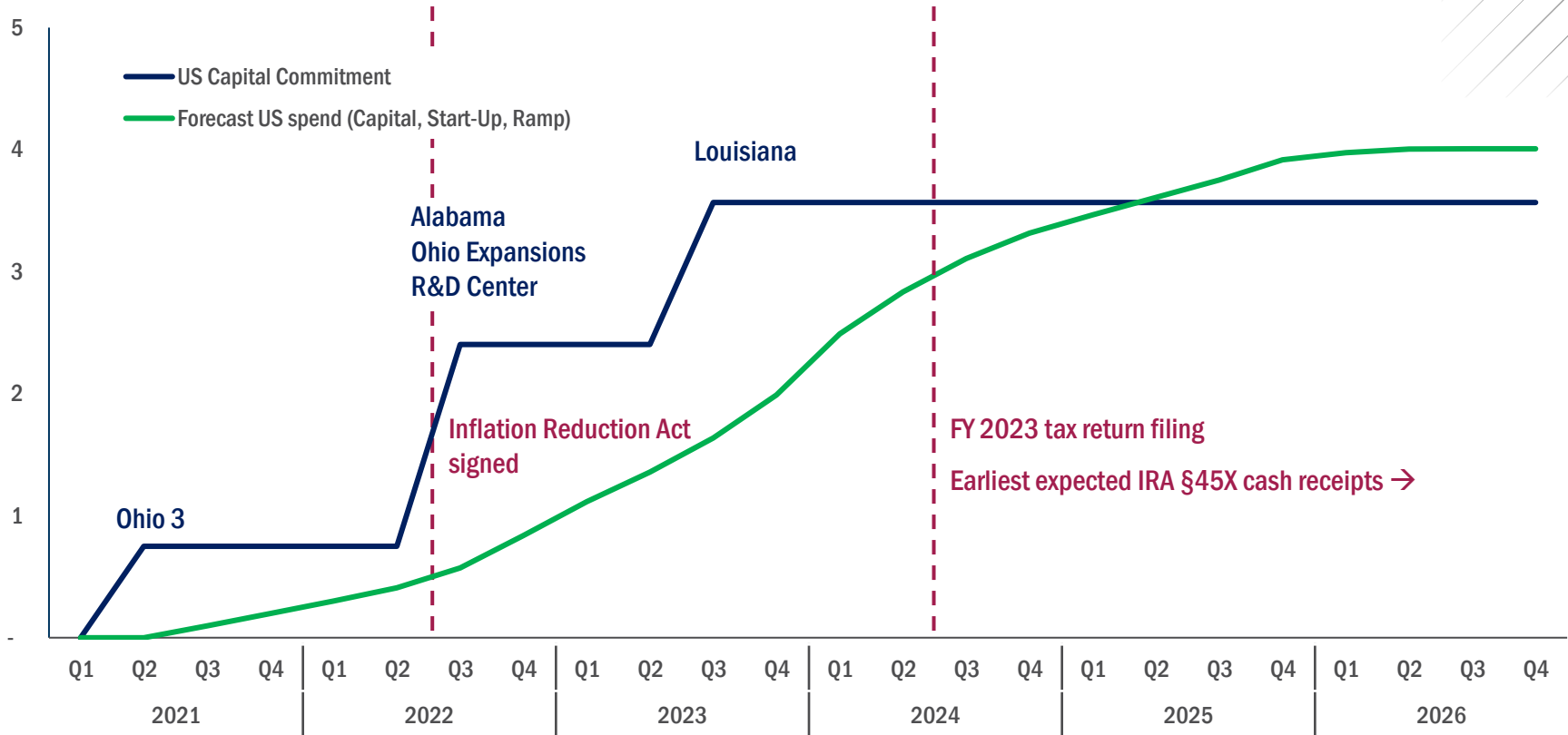
Tax Credit Assumptions

Eligibility	<ul style="list-style-type: none"> Manufactured in United States after 1/1/2023
Amount	<ul style="list-style-type: none"> Wafer \$6/m² (Efficiency ↑ = Credit/watt ↓); implies 6.1-6.4 c/w for Series 6 (460W-480W) and S7 (525W-540W) modules Cell: 4.0 c/w Module 7.0 c/w
Duration	<ul style="list-style-type: none"> 100% credit 2023 → 2029 Phase out 2030 → 2032 (75% 2030; 50% 2031; 25% 2032)
Structure	<ul style="list-style-type: none"> Election for continuous 5 year refundability period, at individual facility level (not corporate level) Remaining periods (pre or post election of transferability), credits are one-time transferable
Accounting	<ul style="list-style-type: none"> Quarterly recognition in financial statements P&L: Recognized as reduction to cost of goods sold in the period in which modules are sold BS: Credit reflected as government grant receivable
Cash Timing	<ul style="list-style-type: none"> Timing uncertain, linked to annual tax filing plus IRS / treasury period of review FS full year tax filing expected Q2/Q3 in subsequent year

Production by Geography (GW)



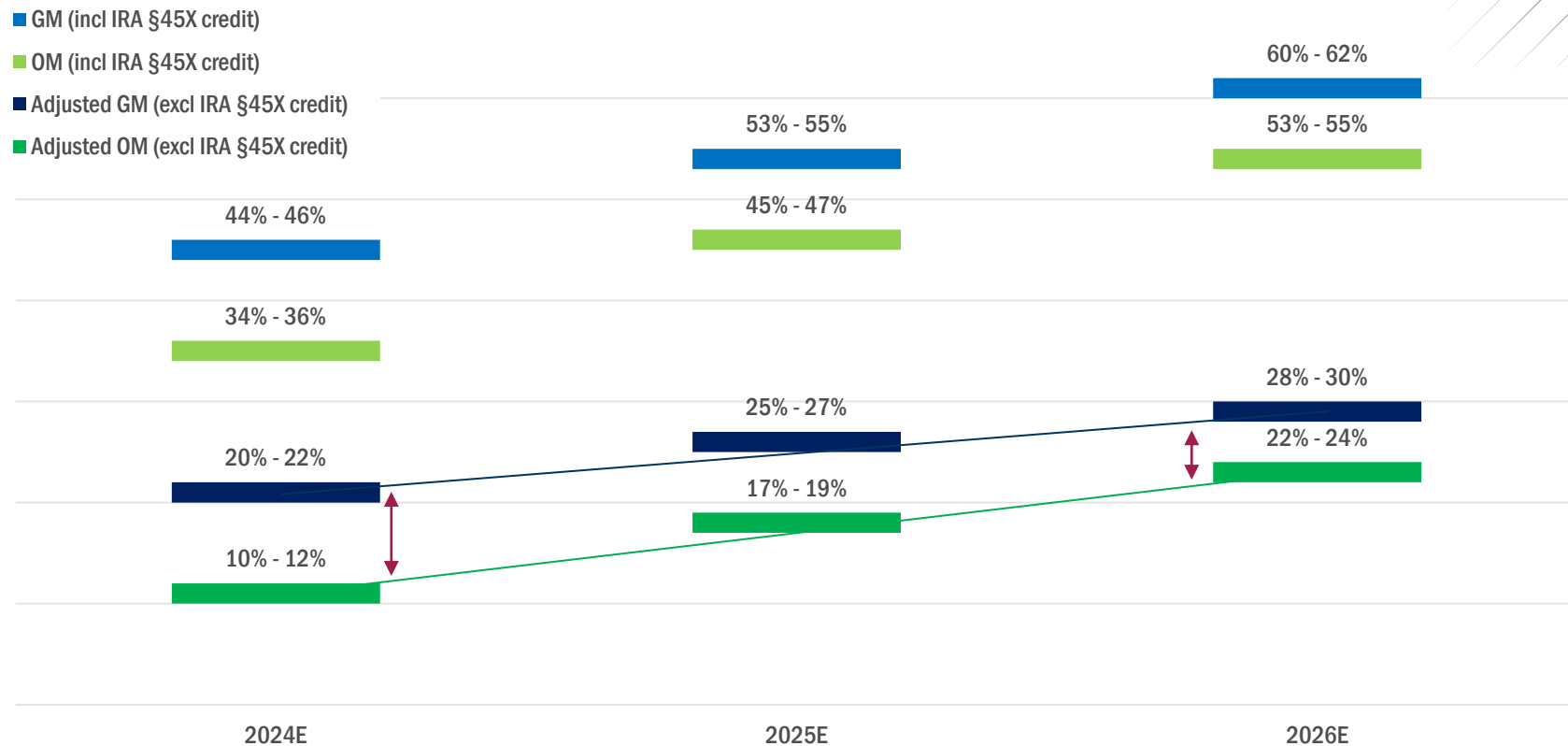
IRA: Investing Ahead of the Credit (\$B)



India

Why? (Investment Thesis)	• Macro fundamentals	• Population growth, energy growth
	• Politics	• Preference for western vs Chinese partnerships
	• Policy (National)	• Support for renewables, level playing field for domestic manufacturing (“Make in India”)
	• Policy (State)	• Capex incentive for plant construction (~24% capex repaid over 6 year period)
	• Trade and tariff	• Basic customs duties on imported cells (25%) and modules (40%)
	• Technology	• Hot humid climate, relative FS competitive advantage (temperature coefficient / spectral advantage)
Financials	• Sold position	• 1.9 GW confirmed, for delivery In India, between 4Q 2023 and 3Q 2026
	• Pipeline	• 16 GW of total opportunities: 5.5 GW mid-late stage
	• Revenue	• ASPs for domestic sales in confirmed backlog at ~24-25 c/w
	• Gross margin	• % GM entitlement in line with fleet average (excluding US IRA §45X impact)
	• Tax rate	• Concessional manufacturing tax rate of 15% (vs 22%)
Other	• Booking policy	• Contracts confirmed but not reflected in bookings until 100% liquid security posted against delivery
	• Export	• Assumes ~1GW (2024) and 0.5GW (2025) exported to U.S.

Margin Profile: Forecast



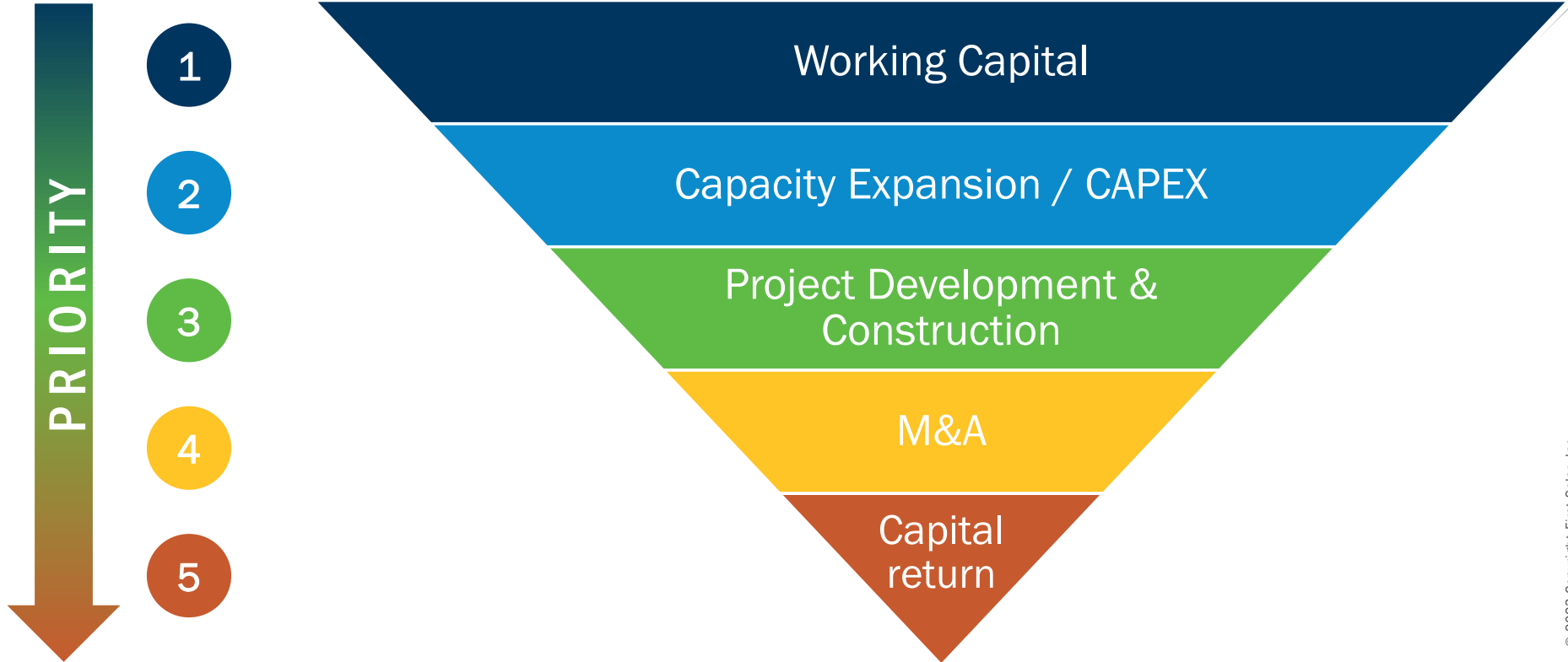
Forecast margins based on management estimates and assumptions as of September 7, 2023.
 Gross Margin includes forecast ramp costs, Operating Margin includes forecast ramp costs and production startup expenses



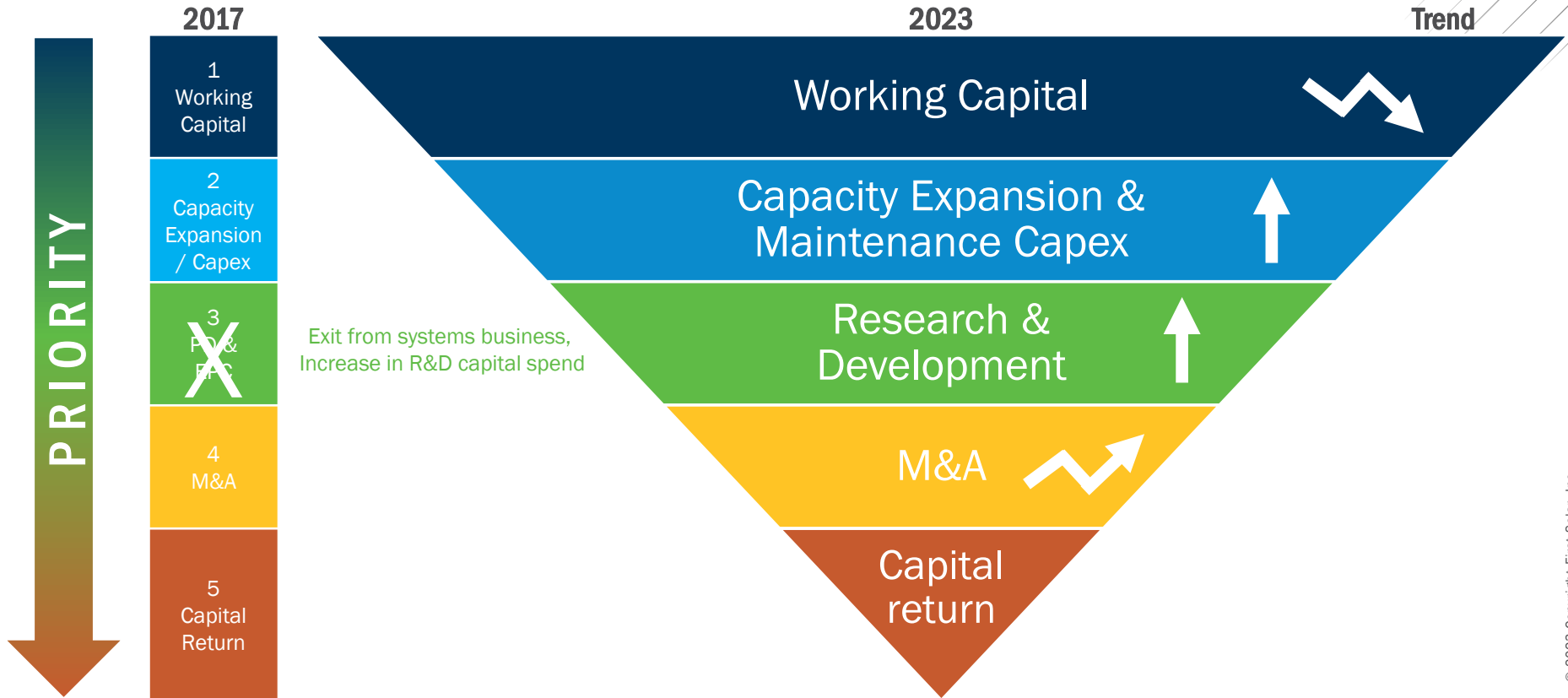
Capital



Capital Allocation: 2017 Analyst Day

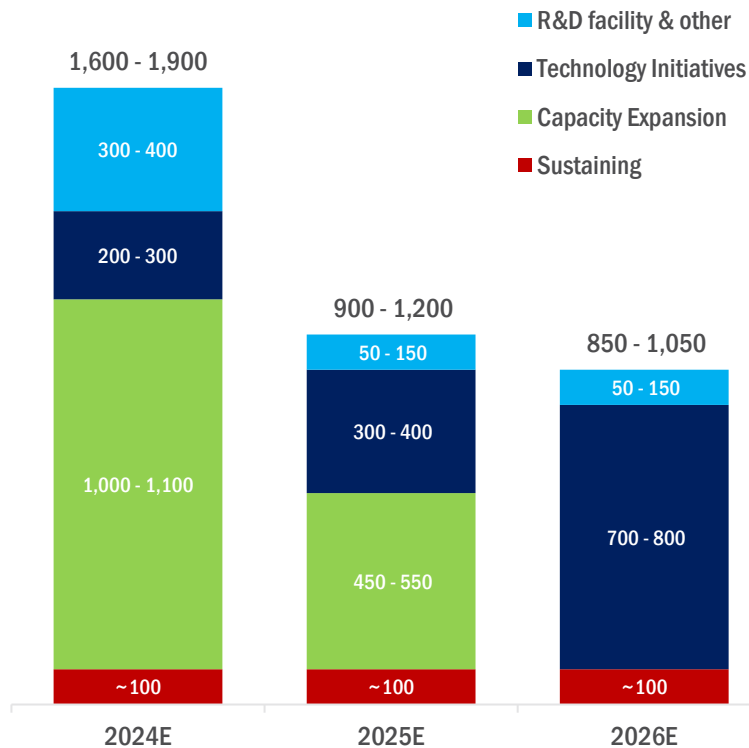


Capital Allocation: 2023 Analyst Day

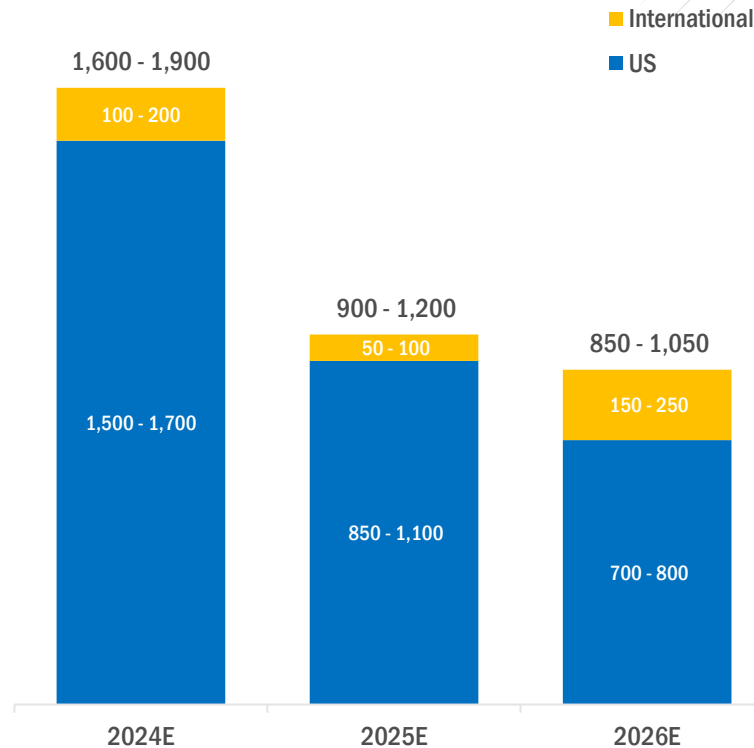


Capital Expenditures (\$m)

By Use



By Geography



Uses, Sources, and Considerations

Key Uses

Maintenance CapEx

Forecast annual ~\$100m

Expansion and R&D CapEx

Committed expansion ~\$1.45 - 1.65B

Forecast R&D ~\$0.4 - 0.7B

Technology CapEx

Forecast 2024-2026 ~\$1.2 - 1.5B

CuRe capital need pending further R&D

Potential Other Cash Uses

Equipment vendor and supply chain development capital

M&A

Key Sources

Net Cash Balance

Year-end 2023 forecast net-cash balance of

\$1.5-1.8B

(as of Q2 2023 earnings call)

Excludes 2023 cash impact from announcement of new Louisiana facility

Core Operating Cash Flow

Operating facilities provide strong cash generation

Customer Deposits

~\$1.5B cash deposits associated with future module deliveries

(as of Q2 2023 earnings call)

IRA §45X Credit

Cash receipt timing uncertain

Liquidity and Other considerations

Existing Debt

\$500m DFC credit facility

Associated with India manufacturing facility

Fully drawn

Revolving Credit Facility

\$1.0B, 5-year facility

Undrawn

Jurisdictional Cash

~90% forecast CapEx spend is U.S.

Cash holding ~1/3 US, ~2/3 offshore

2017 tax reform reduced federal repatriation costs: state repatriation costs remain

Bridge Financing

Continue to evaluate potential need for short term bridge financing



Key Messages



Summary: Growth, Profitability, Liquidity

Investment Thesis

Core Differentiation

across technology and business model

Execution

Balanced

Growth, Profitability, Liquidity

Strategic Growth

Strategic Intent

Exit systems

Grow core manufacturing

2026 forecast production¹

~22.5 GW

(55% US / 45% International)

Contracted Position

Volume

76GW, sold out through 2026

ASP²

Backlog 29.8 c/w

2024 ~28.6 c/w

2025 / 2026 ~30 c/w

Cost 2023-2026

CpW (excluding ramp)¹

Produced: 1.5-3.0% reduction

Sold: 4-6% reduction

Includes technology and domestic content
cost increases (GM% accretive)

Overhead¹

Flat SGA \$, increasing R&D \$, declining c/w

Margins 2024-2026

Gross Margins¹

Excluding IRA \$45X reaching 30%

Including IRA \$45X at 60%+

Operating Margins¹

Excluding IRA \$45X reaching 24%

Including IRA \$45X at 50%+

Capital and Liquidity

Strong operating cash flow:

Module sales, customer deposits, IRA \$45X

Capex program¹

~\$3.75B 2024-2026

Supporting capacity growth and technology

Liquidity

\$1B Revolver capacity (undrawn)

(1) Management expectations as of September 7, 2023

(2) Fleet average ASP of 29.8 c/w normalized by 2.5 c/w for 6.5GW of backlog with FCA incoterms and no associated sales freight cost, impacts fleet average ASP by 0.2 c/w

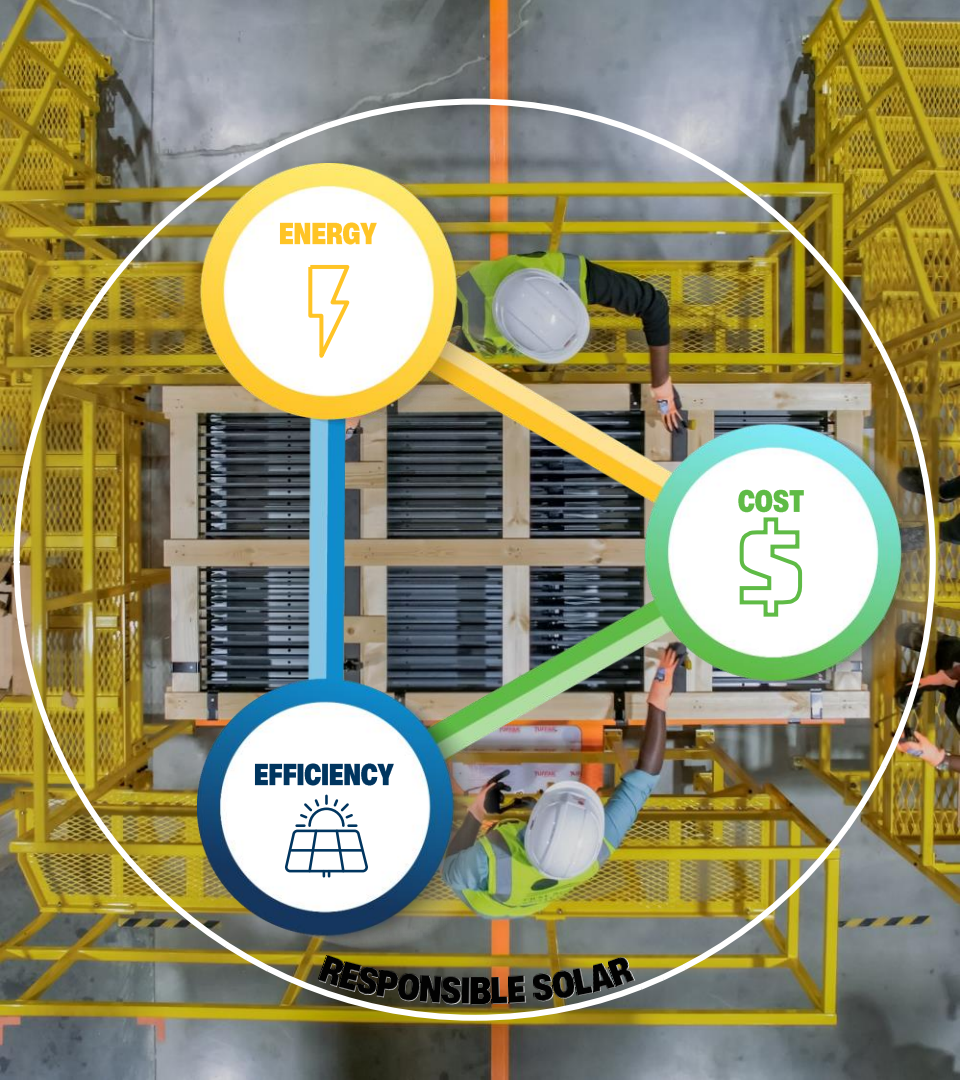


Closing Remarks

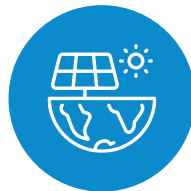


LEADING THE WORLD'S
SUSTAINABLE ENERGY FUTURE





**EXIT THIS
DECADE IN A
STRONGER
POSITION
THAN WE
ENTERED IT.**



**Be positioned to serve all
addressable markets**



**Commercialize the
next generation of PV**



**Create the potential
to double in size**