Investor Overview

April 29, 2021



First Solar.

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: our business strategy, including anticipated trends and developments in and management plans for our business and the markets in which we operate, our financial guidance for the full-year 2021, future financial results, operating results, net sales, revenues, cost of goods sold, gross margin, gross margin percentage, operating expenses, operating income, earnings per share, net cash balance, capital expenditures, products, product improvements, efficiency, energy density, projected costs (including estimated future module collection and recycling costs), warranties, shipments, bookings, booking opportunities, backlog, confirmations, sales, supply, production, nameplate manufacturing capacity, solar module technology and cost reduction roadmaps, restructuring, product reliability, photovoltaic ("PV") market growth and competitiveness, installed PV capacity growth, installed PV capacity growth, comparative levelized cost of energy, investments in unconsolidated affiliates, and capital expenditures; our ability to continue to reduce the cost per watt of our solar modules (and the impact of drivers to reduce such costs); our ability to expand manufacturing capacity worldwide; our ability to reduce the costs to construct PV solar power systems; research and development ("R&D") programs; the impact of our copper replacement (CuRe) program; sales and marketing initiatives; the impact of U.S. tax reform; and competition. 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" 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 these statements. These factors include, but are not limited to: the severity and duration of the COVID-19 pandemic, including its potential impact on the Company's business, results of operations and financial condition; structural imbalances in global supply and demand for PV solar modules; the market for renewable energy, including solar energy; our competitive position and other key competitive factors; reduction, elimination, or expiration 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; our ability to execute on our long-term strategic plans; our ability to execute on our solar module technology and cost reduction roadmaps; our ability to improve the wattage of our solar modules; interest rate fluctuations and both our and our customers' ability to secure financing; the creditworthiness of our offtake counterparties and the ability of our offtake counterparties to fulfill their contractual obligations to us; the ability of our customers and counterparties to perform under their contracts with us; the satisfaction of conditions precedent in our sale agreements; our ability to attract new customers and to develop and maintain existing customer and supplier relationships; our ability to successfully develop and complete our systems business projects; our ability to convert existing production facilities to support new product lines, such as Series 6 module manufacturing; 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 resulting from pending litigation; future collection and recycling costs for solar modules covered by our module collection and recycling program; 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 R&D; the supply and price of components and raw materials, including CdTe; our ability to attract and retain key executive officers and associates; 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.

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First Solar®

Corporate Overview

First Solar Overview

Providing modules globally to:


Utilities


Developers


IPPs


Distributors


EPCs


Financial Investors


Commercial & Industrial

20+ years
Founded in 1999



7.9GW
manufacturing capacity across 3 countries



98%
Less semiconductor compared to c-Si



45+
countries with First Solar modules



2.5 x
lower carbon footprint than c-Si PV



90%+
material recovery through recycling



$1.5B USD
Net cash(1)



$2.7B USD
2020 net sales



(1) Defined as cash, cash equivalents, marketable securities, and restricted cash less debt as of March 31, 2021

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Investment Thesis

Market Opportunity

- In the next five years, installed PV capacity globally is expected to double(1)
- Unsubsidized utility-scale solar has a lower levelized cost of energy compared to conventional generation including coal, nuclear, and natural gas peaking plants(2)
- Our Series 6 technology, product roadmap, and research and development are all key differentiators which we believe will enable us to meaningfully participate in this wave of demand for clean and affordable energy

Competitive Advantage

- Differentiated Cadmium Telluride (CdTe) thin-film technology with superior temperature coefficient and spectral response yielding an energy advantage in many climates
- Proprietary manufacturing process which enables production of a CdTe module in a matter of hours and utilizes less than 2% of the amount of semiconductor material that is used to manufacture conventional crystalline silicon solar panels
- Market leading Series 6 product, with an approximately 15 GW contracted backlog for deliveries in 2021 through 2024
- Strong balance sheet which enables investment in a disruptive technology roadmap





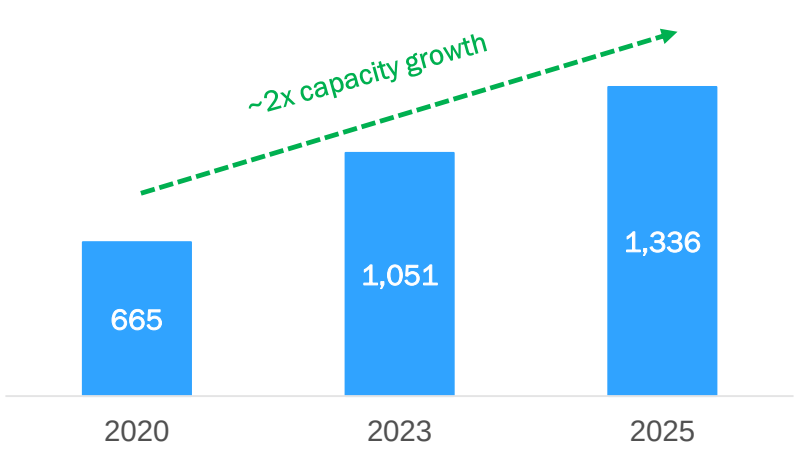


(1) IHS Market, Global Power and Renewables (2021)
(2) Lazard's Levelized Cost of Energy Analysis – Version 14.0 (October 2020)

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PV Market Growth and Competitiveness

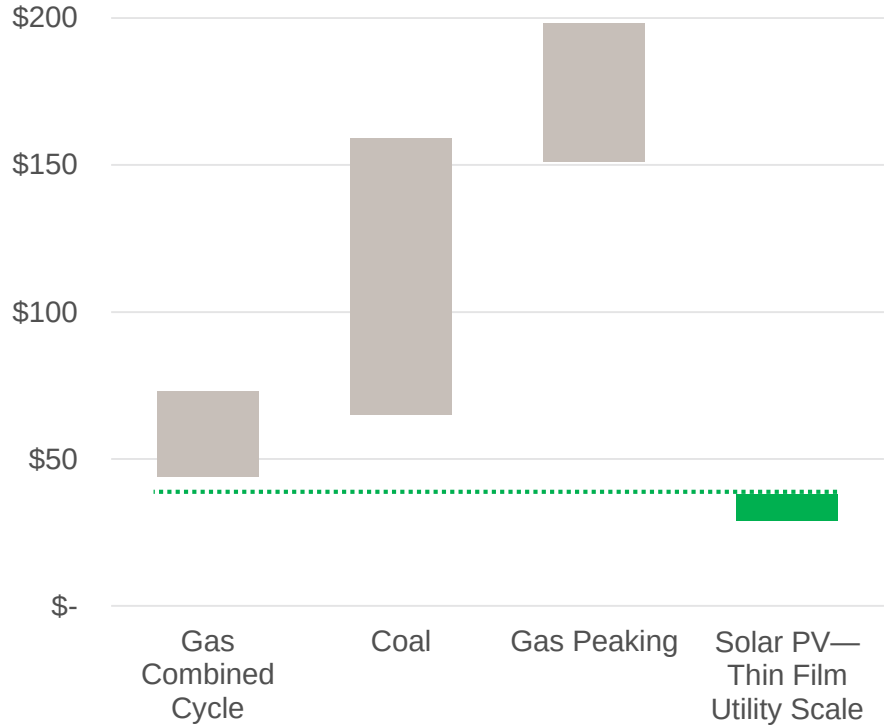
Cumulative Global Installed PV Capacity (GW)(1)



Cost Competiveness – A Driver of Growth

- Unsubsidized utility-scale solar has a **lower levelized cost** of energy compared to conventional generation including coal, nuclear and natural gas peaking plants(2)

Levelized Cost of Energy ($/MWh)(2)



(1) IHS Market, Global Power and Renewables (2021)
(2) Lazard's Levelized Cost of Energy Analysis – Version 14.0 (October 2020)

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Business Segments

Manufacturing

- As of Q1 2021, 6 manufacturing facilities across Ohio, Malaysia and Vietnam with a combined nameplate capacity of 7.9 GW
- Target nameplate manufacturing capacity of 8.7 GW and 9.4 GW by YE'21 and YE'22

Module Sales

- Module sales in the United States, Western Europe, India, Latin America, Brazil, Middle East, Japan, Australia, and South East Asia

Project Development (1)

- Continue developing in Japan with ~360 MW of projects with feed-in-tariff rights secured
- In March 2021 completed the sale of our U.S. Project Development business to Leeward Renewable Energy

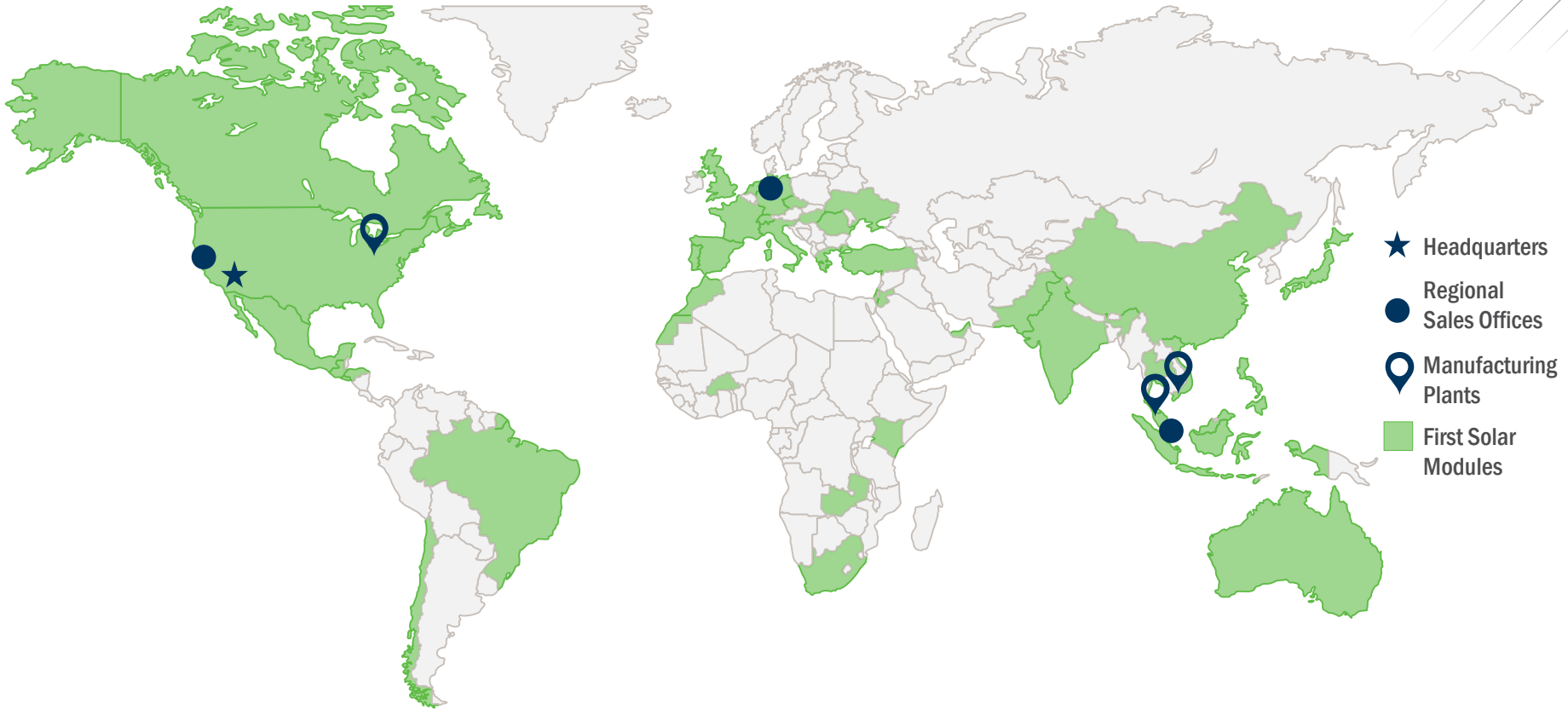
Operations and Maintenance

- In March 2021 completed the sale of our North American O&M business to NovaSource Power Services

(1) From time to time, we may temporarily own and operate, or retain interests in, certain of our systems projects for a period of time based on strategic opportunities or market factors

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First Solar Across the Globe



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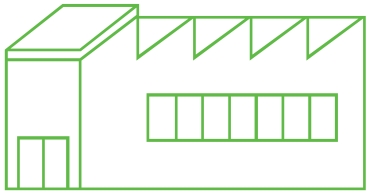
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Manufacturing and Technology Advantages

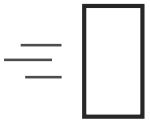
Vertically Integrated Manufacturing Process

First Solar's CdTe Thin Film Technology

1 factory **1** process

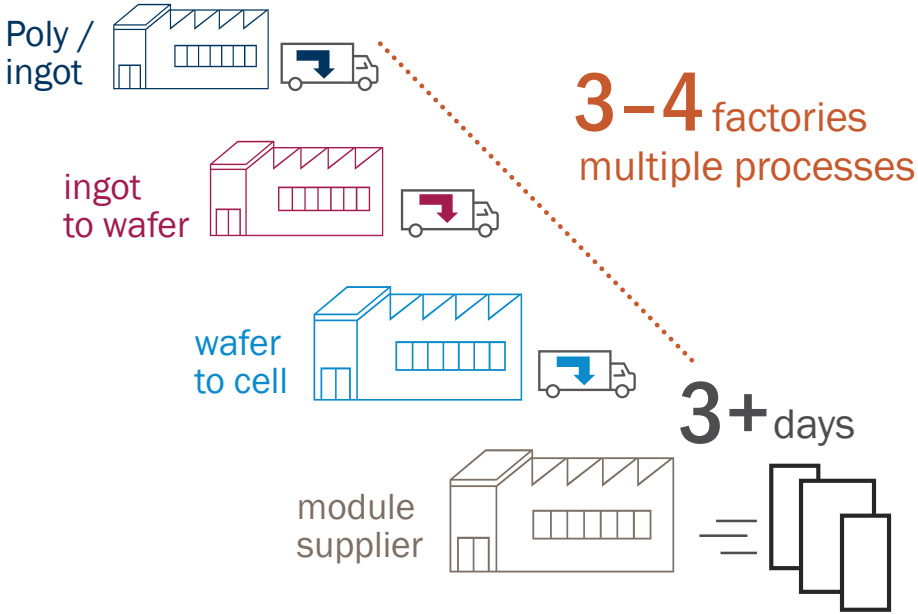


~4.5 hours



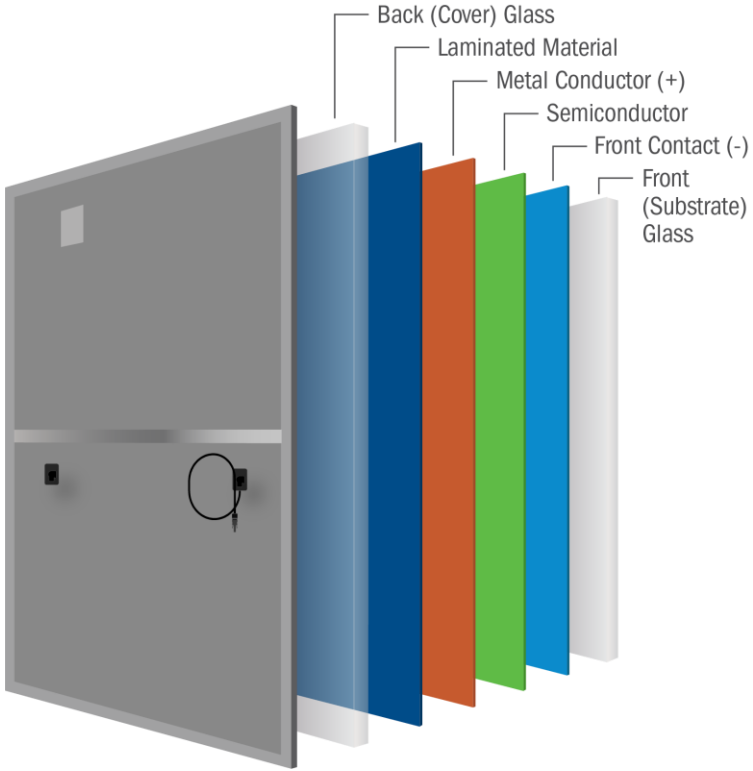
- Fully integrated, continuous process is quality-controlled under one roof
- Supply chain traceability and transparency
- 98% less semiconductor material vs c-Si
- Single glass substrate vs. multiple c-Si wafers
- Lowest carbon footprint and fastest energy payback time available in the market today

c-Si Batch Processing



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What's Inside 20+ Years of Innovation?



- Leading-edge performance derived from over $1.4 billion in R&D investments
- Continuous technology enhancements lower LCOE and boost module efficiency consistently year-over-year
- Ultra-thin semiconductor film is 3% the thickness of a human hair
- Durable and encapsulated glass-on-glass construction stands up to rigorous lab and field testing
- Optimized design from manufacturing through shipping, installation, and recycling

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Technology, Cost, and Risk | Levers of ASP

	Increased Energy	Lower Cost per Watt (CpW)	Higher BOS	Higher Dev. Costs	Additional Risk
Series 6 CuRe Expectations	Improved efficiency, temperature coefficient, and long-term degradation	Improved efficiency reduces fixed and variable CpW	Minimal change to installation process or support structures	Minimal change to project development or operating costs	No risk associated with backside energy
c-Si Bifacial	Backside energy gain, partially offset by lost front-side wattage	Additional PV glass and reduction in front-side wattage modestly increases variable and fixed CpW	Taller posts needed to maximize backside energy gain	Increased vegetation management costs and insurance premiums associated with cell cracking risk	Energy prediction and albedo uncertainly associated with backside energy gain
c-Si Large Form Factor	Wattage increase often driven by larger form factor, not improved efficiency	Larger form factor reduces fixed CpW, partially offset by added variable costs	Machinery required for installation; Additional support structures needed	Increased insurance premiums associated with cell cracking risk	Larger form factor increases cell cracking and wind load risk

Accretive to ASP | Dilutive to ASP

Relative value ascribed to energy, capex, and operating expenses...



...varies by project site, geography, market, energy price, and buyer

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First Solar®

Sustainability

Creating More Value with Less Environmental Impact

2.5x LOWER

Up to 2.5x lower carbon footprint than c-Si PV

90%+

90%+ module recycling material recovery rate

2x FASTER

Up to 2x faster energy payback time than c-Si PV

Vertically Integrated Manufacturing

Enhances end-to-end supply chain transparency

3x LOWER

Up to 3x lower water footprint than c-Si PV

First Solar's sustainability advantage supports a circular economy

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Responsible Leadership through Stewardship

Leading eco-efficient PV technology

- Higher energy yields at competitive cost with the industry's smallest environmental footprint

Globally recognized for environmental performance and excellence

- Joint winner of PV Magazine's inaugural Sustainability Award

Member of RE100, a global consortium of companies committed to operating using clean energy

- Committed to powering 100 percent of global operations with renewable energy by 2028

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Electronic Product Environmental Assessment Tool (EPEAT)

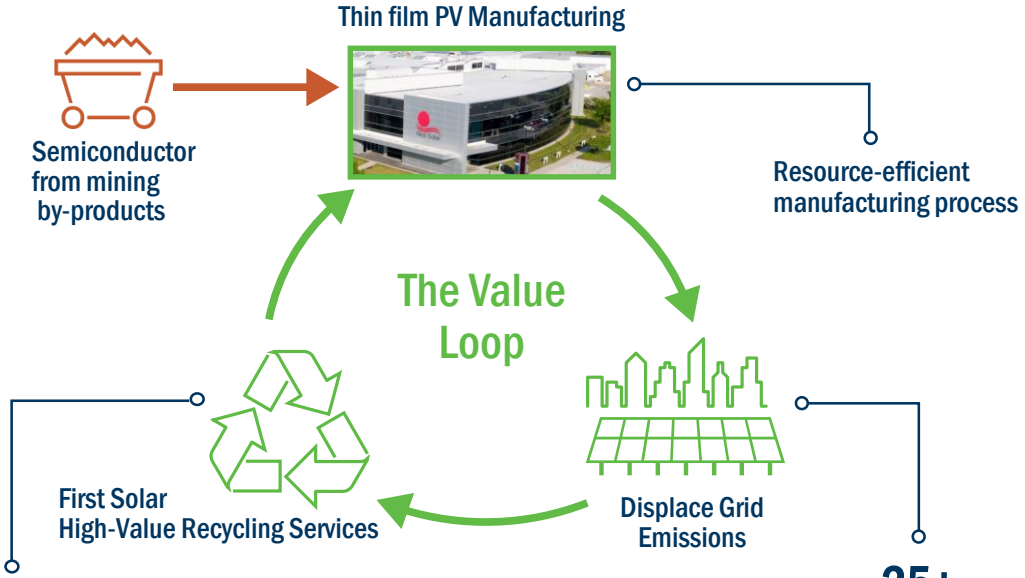


- ✓ Establishes corporate and product sustainability performance criteria that exemplify sustainability leadership in the market, which conforms to NSF 457, the industry's first sustainability leadership standard
- ✓ Globally recognized and independently verified Type 1 Ecolabel (designated under ISO 14024)
- ✓ Gives customers confidence that they are purchasing an environmentally-leading product from a socially-responsible company

First Solar Series 6 modules are the first PV products included in the EPEAT registry for sustainable electronics

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Contributing to a Circular Economy



90% Recovery Rate

- **Glass:** reused in new glass products
- **Semiconductor:** reused in new First Solar modules
- **Frame:** reused in new aluminum products

1Kg	40x	1,230 years
of CdTe Semiconductor	Times it can be recycled	Years it can generate electricity

Typical Recycling Rates

Automotive
~75%

Information Technology
~45%

First Solar Modules
~90%

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First Solar's Module Recycling Process



Shredder



Hammermill



Crushed/ Milled Scrap Holding Bin



Film Removal Solid/ Liquid Separation



Metals Precipitation



EVA/Glass Separation



Unrefined Semiconductor Material

Third-party Cd/Te Separation & Refining



CdTe



FS PV modules



Clean Glass Cullet



Glass Products



Laminate Material



Rubber Products

+ 90% Recycling of Semiconductor Material and ~ 90% Recycling of Glass

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Partnering for Responsible PV End of Life Management

- Cost-effective contracts with 2-year termed renewable pricing
- No up-front fees: “pay as you go” model using future project cash flows
- Recycling Services offered in all regions of the world
- Scalable from construction through decommissioning
- Flexible start date: at module sale, throughout plant life, and decommissioning
- Owner is responsible for module removal, packaging and logistics to First Solar recycling facility
- Owner always has the discretion to elect alternate recycling vendor or responsible disposal



Flexible. Commercially attractive. Environmentally responsible.

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Operations, Bookings and Financials as of April 29, 2021

Module Segment Update

Manufacturing Updates

- 2.4 GW of year-to-date production[1]; consistently producing 455 watt modules
- Second Series 6 factory in Malaysia exited ramp period; nameplate manufacturing capacity to 7.9 GW

Performance Metrics

- Delivered strong manufacturing results despite planned and unplanned downtime
- 92%[2] and 99%[3] fleet-wide capacity utilization
- 20.2[2] / 22.0[3] MWs produced per day and 96.7%[2] / 97.4%[3] manufacturing yield
- 442[2] / 445[3] average watts per module and 98%[2] / 97%[3] ARC bin distribution from 440 to 455

Supply Chain and Logistics

- Continuing to manage through elevated shipping rates via improved module efficiency, implementation of Series 6 *Plus* and expansion of distribution network footprint in U.S.
- Utilizing long-term supply agreements for raw materials and commodities to help de-risk value of backlog
- Mitigating a portion of cost challenges related to aluminum through a hedge structure

Financial

- Module segment gross margin percentage in-line with Q1 guidance
- On track to achieve target 11% cost per watt produced reduction between Q4'20 and Q4'21
- Targeting 6% to 7% cost per watt sold reduction between Q4'20 and Q4'21

(1) Data from January 1, 2021 through April 28, 2021
(2) Data from March 1, 2021 through March 31, 2021
(3) Data from April 1, 2021 through April 28, 2021

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Systems Segment Update

Project Sales

- In March completed the sales of the Sun Streams 2, 4, and 5 projects
- In April completed the sale of the Sun Streams 3 project
- Across these four projects, Longroad Energy intends to utilize approximately 1 GW of Series 6 modules, of which 785 MW represent new bookings

Strategic Updates

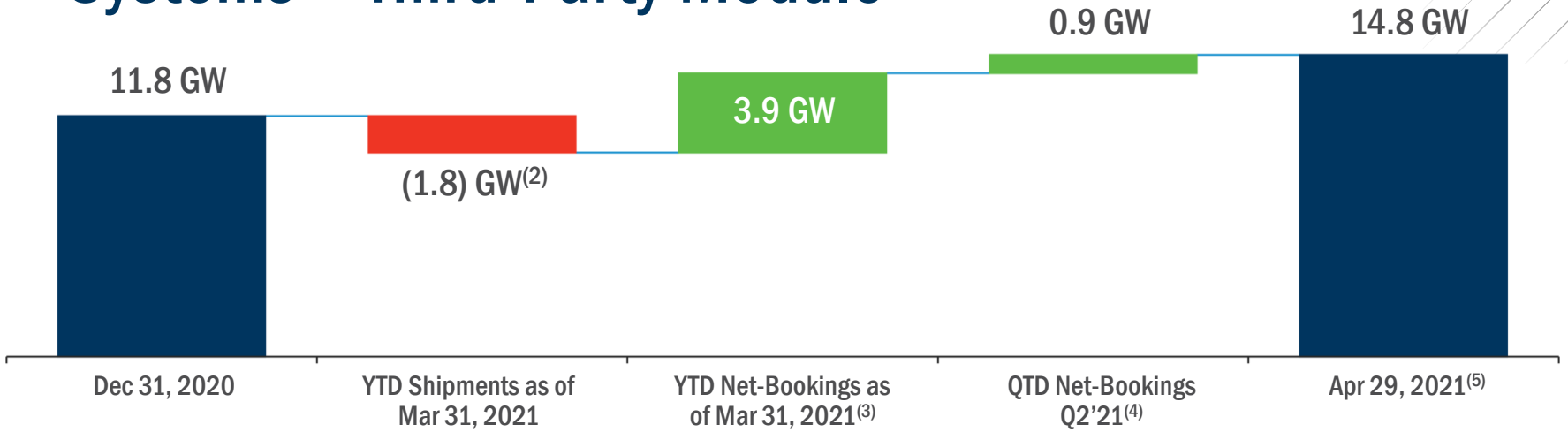
- In March completed the sale of our U.S. Project Development business to Leeward Renewable Energy
- In March completed the sale of our North American O&M business to NovaSource Power Services

Japan Systems Business

- 320 MW booked systems backlog in Japan; includes 55 MW since previous earnings call
- 40 MW of opportunities with feed-in-tariff rights secured but pending the satisfaction of certain permitting requirements
- Across the portfolio of currently contracted assets in Japan, have the potential to capture approximately $250 million of gross profit in the next 3 to 5 years
- With a $15 million per year overhead cost structure, anticipate the sell-down of systems projects in Japan will continue to contribute to operating income

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Expected Module Shipments[(1)] (GW_{DC}): Systems + Third-Party Module



The above table presents the actual module shipments for 2021 through Mar 31, 2021, new module volume net-bookings through Apr 29, 2021, and the expected module shipments beyond Mar 31, 2021. A module is considered to be shipped when the delivery process to a customer commences and the module leaves one of our facilities or the module has been recognized as revenue. Expected module shipments do not have a direct correlation to expected revenues as expected module shipments do not represent total systems revenues and do not consider the timing of when all revenue recognition criteria are met, including timing of module installation.

(1) Expected Module Shipments includes systems projects and contracted 3rd party module-only sales. Systems projects include (a) under sales agreement, (b) executed PPA not under sales agreement, and (c) no PPA and not under sales agreement, but electricity to be sold on an open contract basis.

(2) 1.8 GW of net shipment volume deducted from backlog; 0.2 GW of modules previously shipped to safe harbor the U.S. investment tax credit for future systems projects.

(3) Reflects net-bookings from Jan 1, 2021 to Mar 31, 2021, reduced by 0.1 GW of debookings.

(4) Reflects net-bookings from Apr 1, 2021 to Apr 29, 2021, reduced by 0.2 GW of debookings.

(5) Balance includes remaining shipment volumes as of Mar 31, 2021 and net-bookings through Apr 29, 2021. Shipments from Apr 1 to Apr 29, 2021 not deducted.

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Quarterly Income Statement Highlights

(In millions, except per share amounts)[1]	Q1 2021A	Q4 2020A	Q1 2020A	QoQ Change	YoY Change
Net sales	**$803**	**$609**	**$532**	**$194**	**$271**
Gross profit %	*23.0%*	*26.2%*	*17.0%*	*(3.2%)*	*6.0%*
Selling, general and administrative	52	63	59	(11)	(7)
Research and development	20	23	26	(3)	(6)
Production start-up	11	17	4	(5)	7
Gain on sales of businesses, net[2]	151	-	-	151	151
Operating income	**252**	**58**	**2**	**195**	**251**
Income tax (expense) benefit	(46)	66	89	(113)	(136)
Net income	**210**	**116**	**91**	**94**	**119**
Net income per share - diluted	**1.96**	**1.08**	**0.85**	**0.88**	**1.11**

(1) Actual, QoQ, and YoY amounts rounded to the nearest million and may not tie due to rounding
(2) Realized gain on the sales of our North American O&M and U.S. Project Development businesses

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Quarterly Balance Sheet Highlights

(In millions)[1]	Q1 2021A	Q4 2020A	Q1 2020A	QoQ Change	YoY Change
Cash and marketable securities[2]	$1,797	$1,794	$1,598	3	198
Accounts receivable[3]	817	292	411	525	406
Inventories (current and noncurrent)	755	769	662	(13)	93
Property, plant and equipment, net	2,398	2,402	2,244	(4)	154
PV solar power systems, net	236	243	471	(7)	(234)
Project assets - current and noncurrent	291	373	389	(82)	(98)
Assets held for sale[4]	-	156	-	(156)	-
Total assets	**7,109**	**7,109**	**6,949**	**(0)**	**160**
Long-term debt - current and noncurrent	257	279	472	(22)	(215)
Liabilities held for sale[4]	-	26	-	(26)	-
Total liabilities	**1,414**	**1,588**	**1,781**	**(174)**	**(366)**
Total stockholders' equity	**5,695**	**5,521**	**5,169**	**174**	**526**

(1) Actual, QoQ, and YoY amounts rounded to the nearest million and may not tie due to rounding
(2) Includes cash and cash equivalents, marketable securities, and restricted cash
(3) Includes accounts receivable trade, net & accounts receivable, unbilled, net
(4) Assets and liabilities related to the agreement to sell our North American O&M and U.S. Project Development businesses

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2021 Guidance as of April 29, 2021

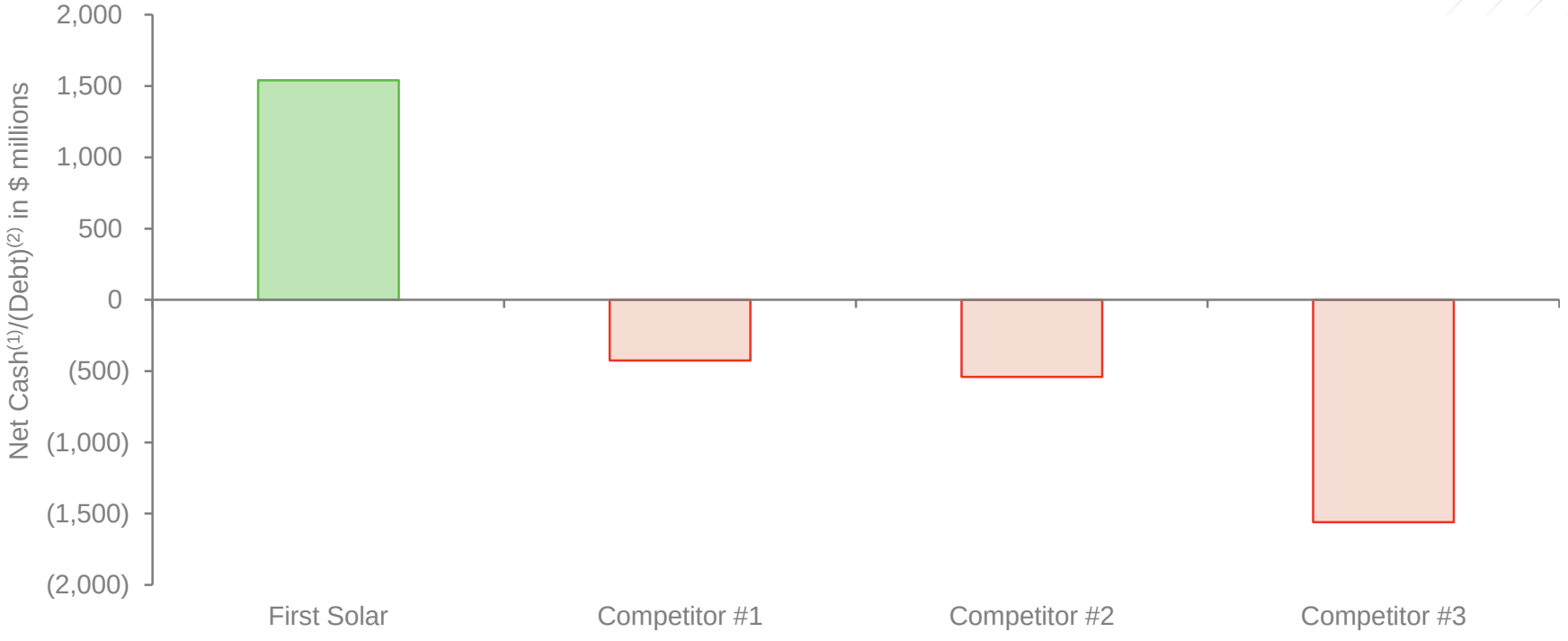
	Prior	Current
Net Sales	$2.85B to $3.0B	$2.85B to $3.025B
Gross Margin ($)(1)	$710M to $775M	$695M to $775M
Operating Expenses(2)	$285M to $300M	Unchanged
Operating Income(3,4)	$545M to $640M	Unchanged
Earnings Per Share	$4.05 to $4.75	Unchanged
Net Cash Balance(5)	$1.8B to $1.9B	Unchanged
Capital Expenditures	$425M to $475M	Unchanged
Shipments	7.8GW to 8.0GW	Unchanged


Photo © Swinerton Renewable

(1) Includes of $1 million of related ramp expense ($5 million to $10 million previously) and $40 million of underutilization losses (unchanged)
(2) Includes $20 million to $25 million of production start-up expense ($15 million to $20 million previously)
(3) Includes $61 million to $66 million of ramp expense, production start-up expense, and underutilization losses ($60 million to $70 million previously)
(4) Includes a $151 million pre-tax gain related to the sales of the North American O&M and U.S. project development businesses ($135 million to $150 million previously)
(5) Defined as cash, cash equivalents, marketable securities, and restricted cash less expected debt at the end of 2021

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Strong Balance Sheet | U.S. Listed Competitors



Note: 'Net (Debt) / Cash' is based on latest quarterly financial filings as of 4/29/2021; (1) Cash includes cash, cash equivalents, marketable securities and restricted cash; (2) Debt includes current portion of long-term debt, long-term debt and convertible debt

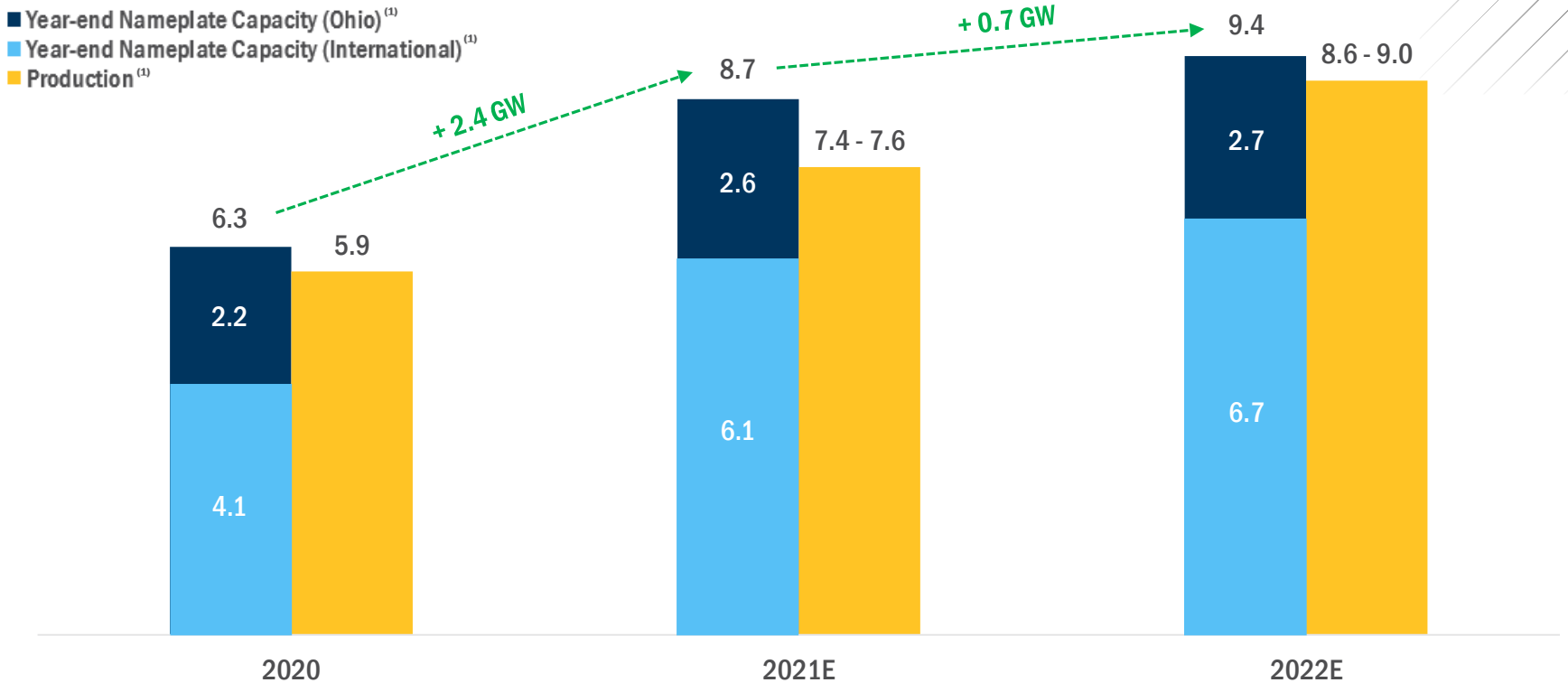
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Manufacturing, Cost, and Technology Roadmap

Expanding Manufacturing Footprint (GW)

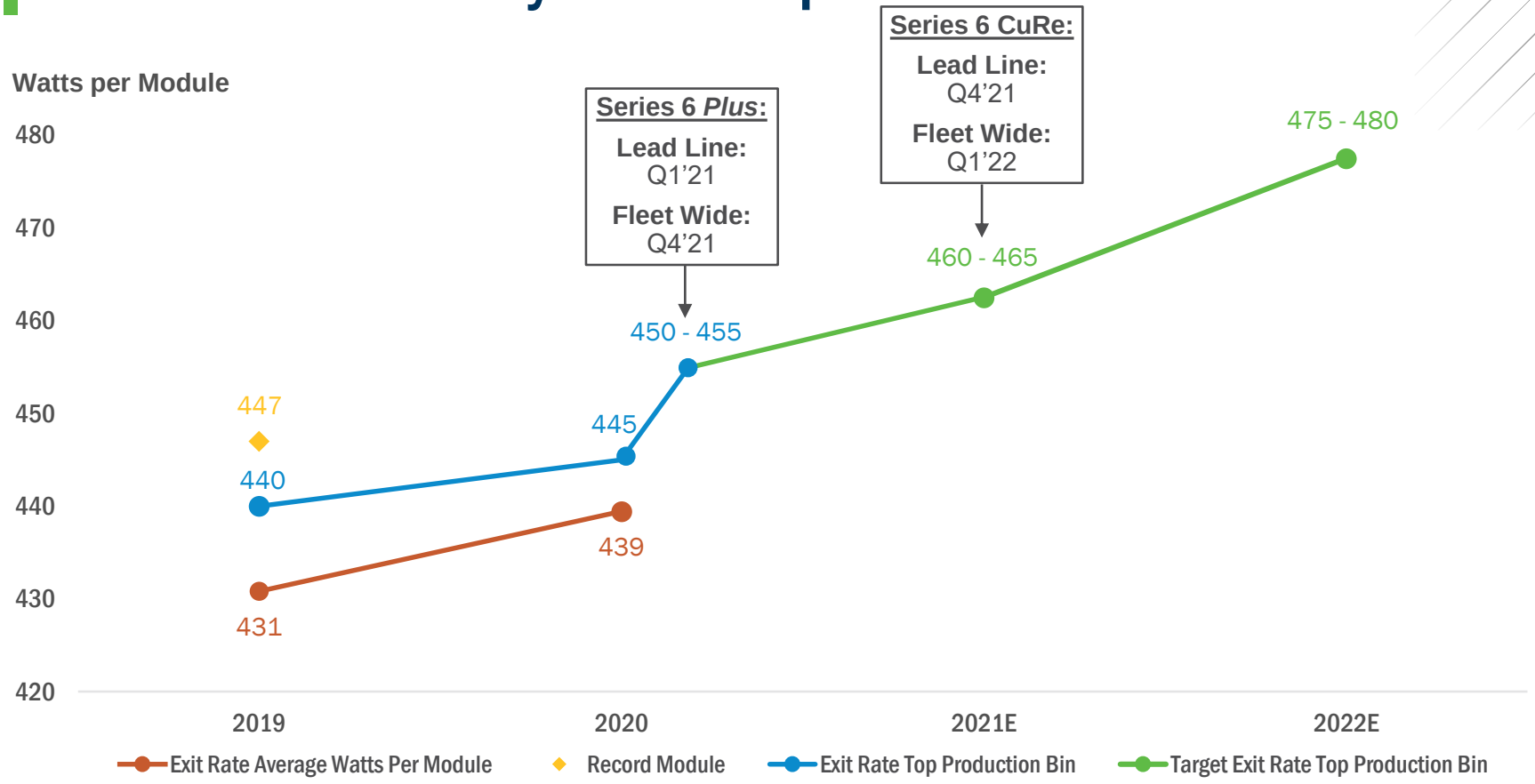


New Malaysia factory and optimization of existing fleet expected to increase capacity

(1) GW per year

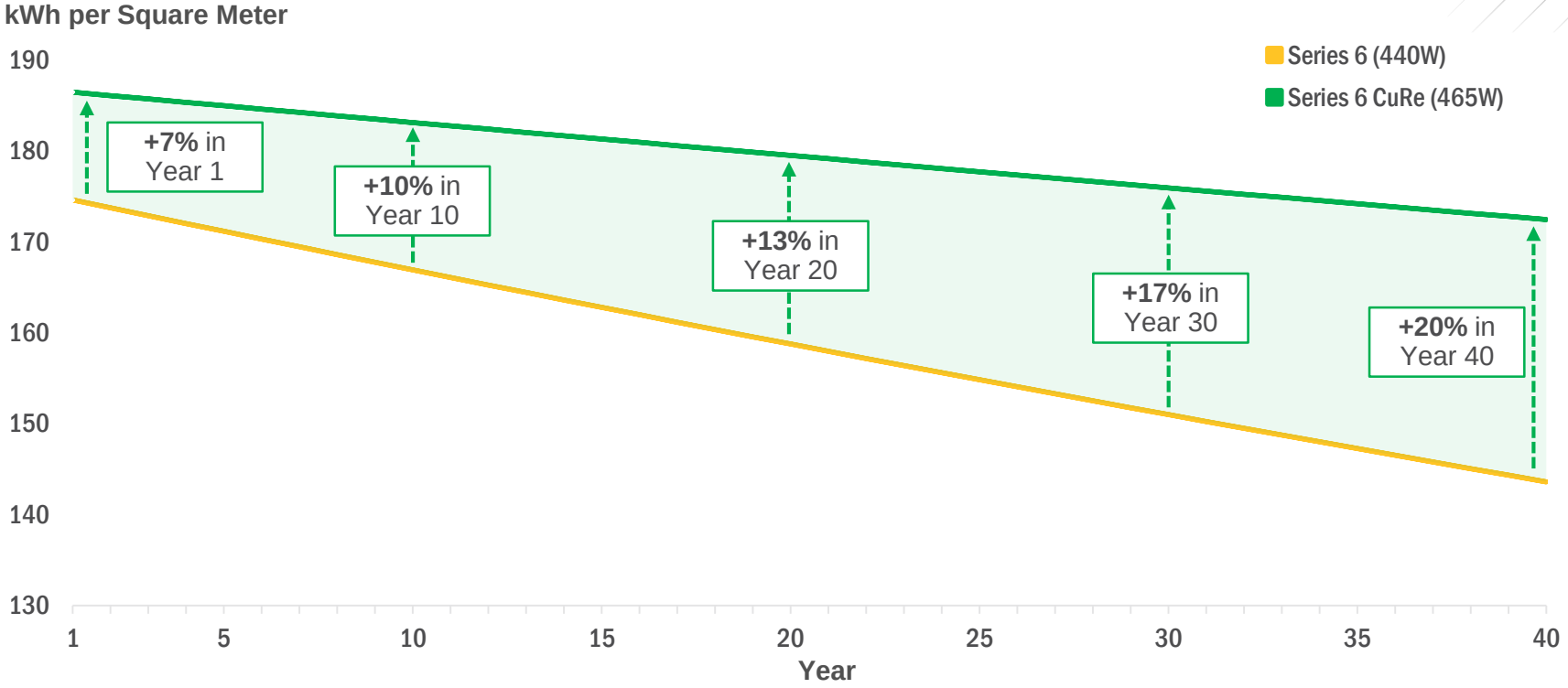
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Series 6 Efficiency Roadmap



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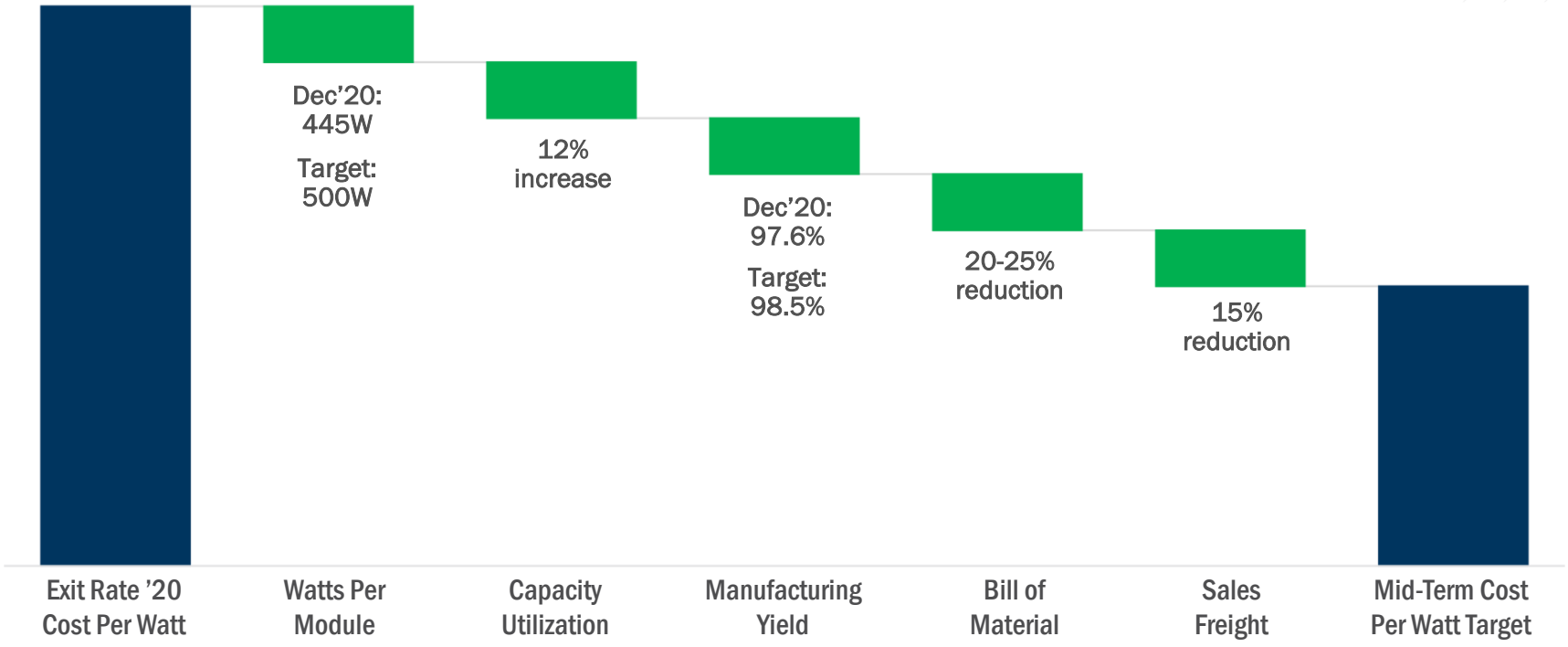
Series 6 (440W) vs. Series 6 CuRe (465W) Expected Energy Density Improvement(1)



(1) Reflects expected energy density improvement of our next generation Series 6 CuRe modules, over a 40-year project life. Assumes degradation rate for 40 years and assumes the environmental conditions of West Texas

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Indicative Drivers of Cost Per Watt Reduction



Note: Not to scale

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