

FIRST SOLAR

INVESTOR OVERVIEW

February 20, 2020



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: effects resulting from certain module manufacturing changes and associated restructuring activities; 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 2020, 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, efficiency, 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, 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 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: 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 project 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, including the opt-out action against us; 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 Conditions 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.



CORPORATE OVERVIEW

FIRST SOLAR AT A GLANCE

Over **25GW** of solar modules shipped worldwide since company founding

Global manufacturing footprint in the United States, Vietnam and Malaysia

Balanced business model of **growth, liquidity & profitability**

Differentiated technology, manufacturing process and balance sheet

Long term vision to excel in **technology & cost leadership**

Leading the world's **sustainable energy future**

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 market leading 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

First Solar Advantage

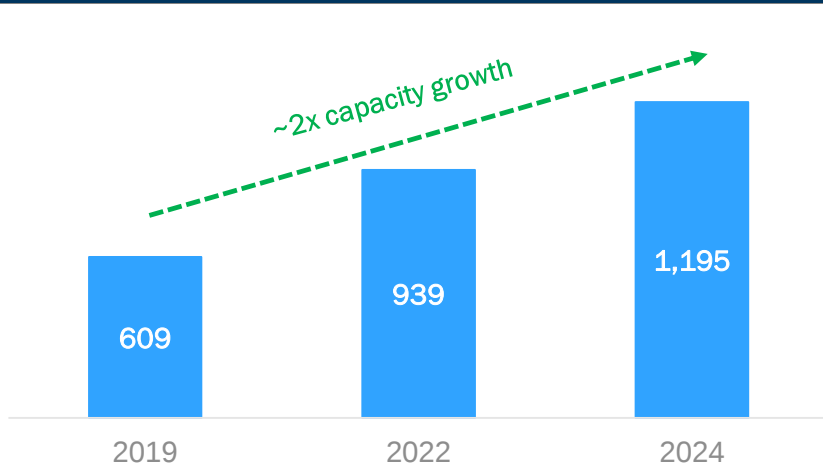
- Differentiated Cadmium Telluride (CdTe) thin-film technology with superior temperature coefficient and spectral response yielding an energy advantage
- Proprietary manufacturing process which enables production of a CdTe module in a matter of hours and utilizes less than 2% of the amount of semiconductor material that is used to manufacture conventional crystalline silicon solar panels
- Market leading Series 6 product, with an over 12 GW contracted backlog for deliveries in 2020 through 2023
- Industry leading balance sheet which enables investment in a disruptive technology roadmap



(1) EIA 'Renewables 2019'; (2) Lazard Levelized Cost of Energy Analysis – Version 13.0 (November 2019)

PV MARKET GROWTH AND COMPETITIVENESS

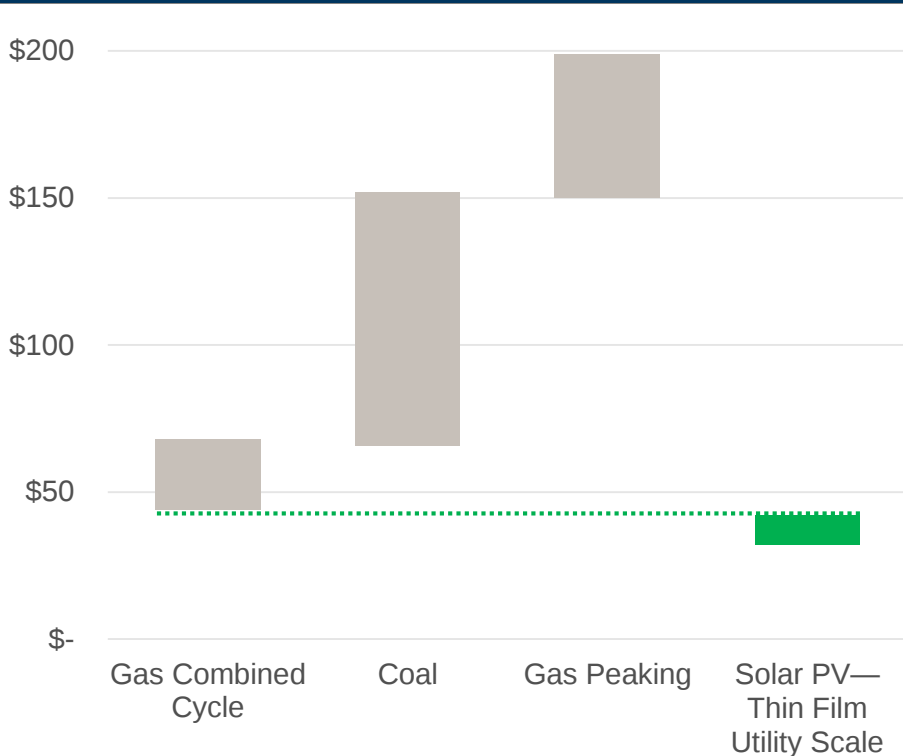
Cumulative Global Installed PV Capacity⁽¹⁾



Cost Competitiveness – 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⁾



BUSINESS SEGMENTS

Manufacturing

- **Series 6:** Anticipated 2020 production of 5.7 GW, and year end 2020 and 2021 nameplate capacity of 6.0 GW and 8.0 GW
- **Series 4:** In limited final production with expected discontinuation in Q2'20

Project Development^(1,2)

- Multi-GW project development pipeline across the United States and Japan
- Currently considering options to best position the project development business in the United States

Module Sales

- Direct sales presence in the United States, Western Europe, India, Latin America, Brazil, Middle East, Japan, and Australia

Operations and Maintenance

- 12 GW of self-developed and 3rd party projects under contract
- Largest PV O&M provider globally and in the United States

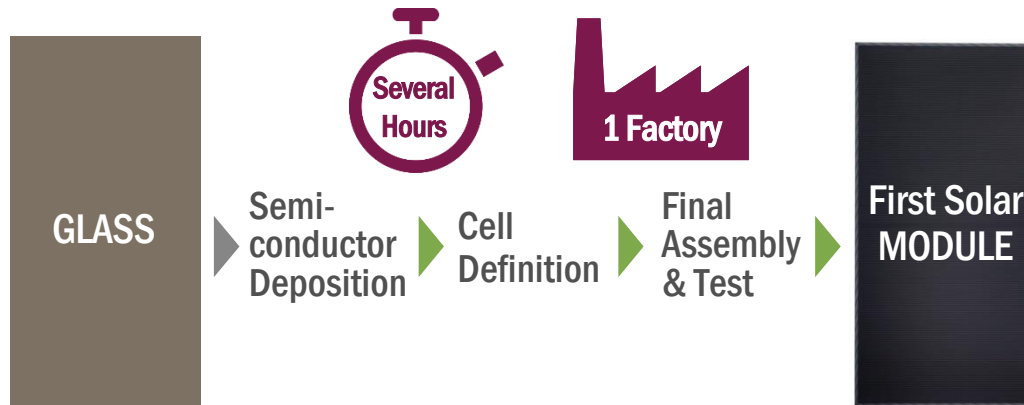
(1) Announced exit of the U.S. EPC business and transition to a third-party execution model in Q3'19; (2) From time to time, we may temporarily own and operate, or retain interests in, certain of our systems projects for a period of time based on strategic opportunities or market factors



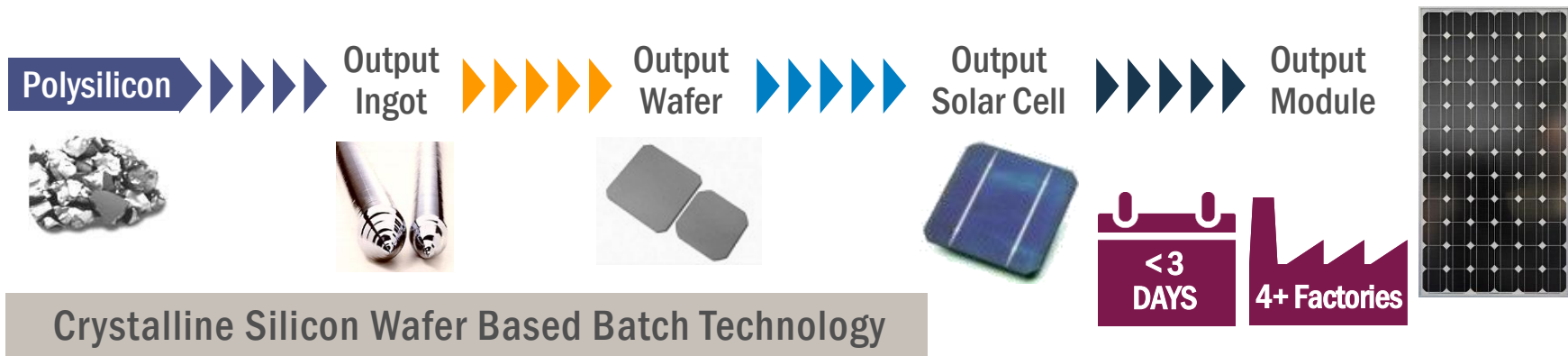
MODULE MANUFACTURING

FIRST SOLAR MANUFACTURING ADVANTAGE

First Solar Fully Integrated, Automated and Continuous Thin Film Process



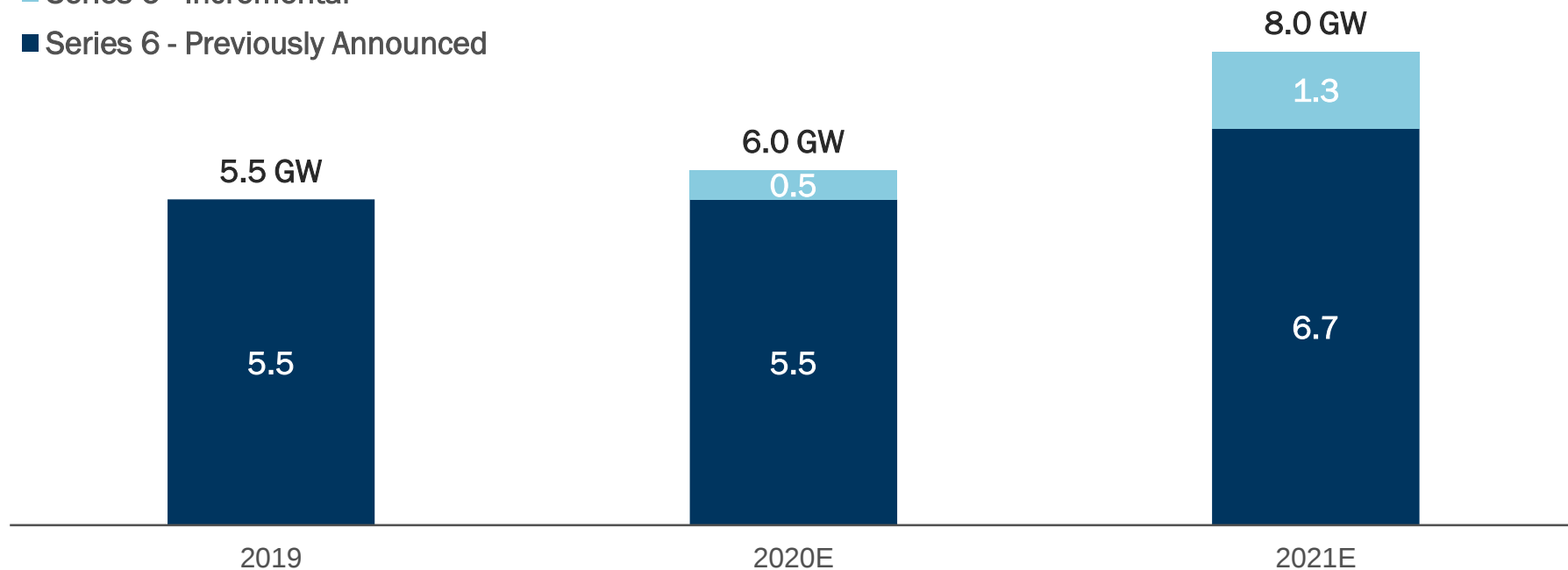
- Large glass substrate vs. individual Si wafers
- Fully integrated, continuous process
- 98% less semiconductor material vs Si
- Quality controlled under one roof
- [Link: Manufacturing Process Video](#)



YEAR-END NAMEPLATE MANUFACTURING CAPACITY

■ Series 6 - Incremental

■ Series 6 - Previously Announced

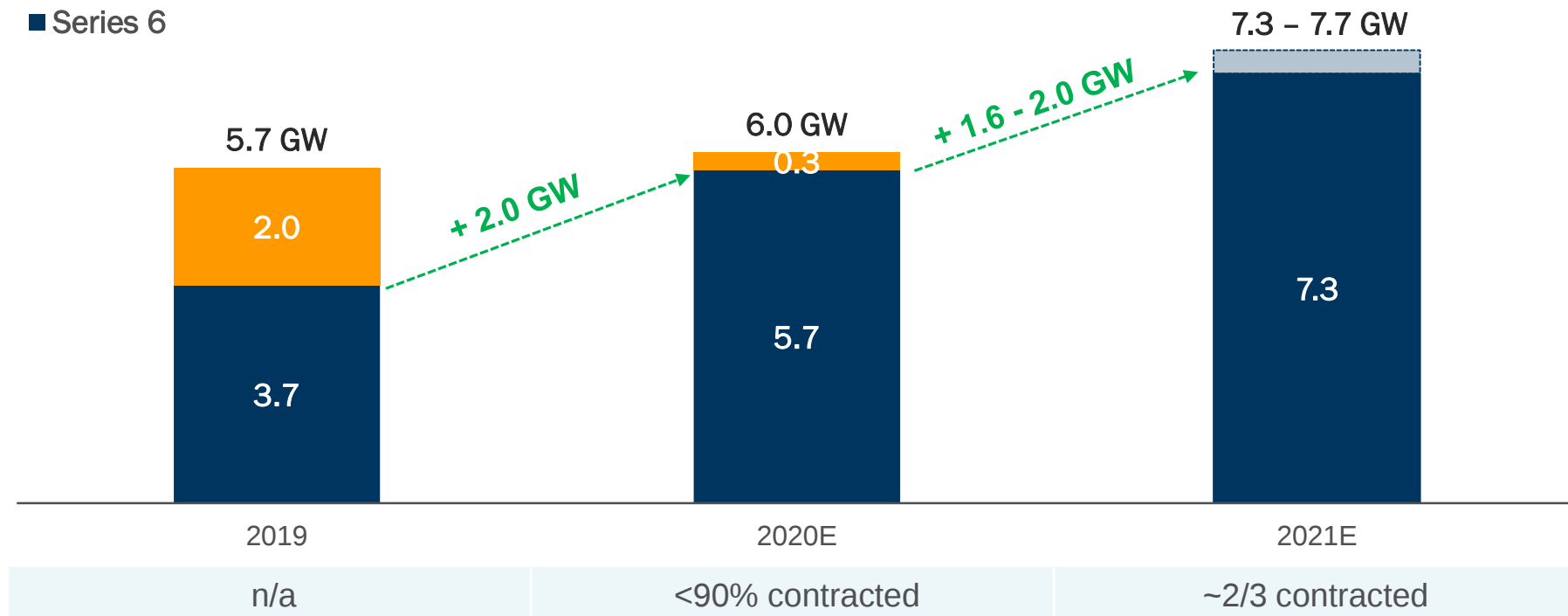


2.5 GW of Series 6 capacity growth expected from year end 2019 to 2021

PRODUCTION VOLUME

■ Series 4

■ Series 6



Series 6 volume expected increase of 3.6 – 4.0 GW between 2019 and 2021

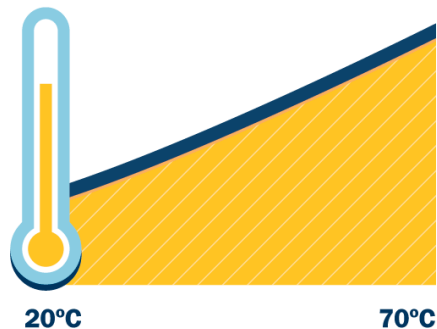


FIRST SOLAR THIN-FILM ADVANTAGES

SPECIFIC ANNUAL ENERGY YIELD ADVANTAGE

(RELATIVE TO FRAMED BSF AND PERC, MULTI AND MONO)

SUPERIOR TEMPERATURE **COEFFICIENT**



UP TO **3%**
MORE THAN C-Si
IN HOT CLIMATES

BETTER SPECTRAL **RESPONSE**



UP TO **4%**
MORE THAN C-Si
IN HUMID CONDITIONS

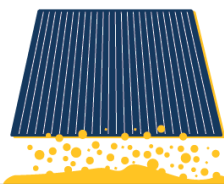
TRUE-TRACKING **ADVANTAGE**



1%
MORE THAN C-Si
ON TRACKERS

REDUCED SOILING & BETTER SNOW-SHEDDING

CdTe

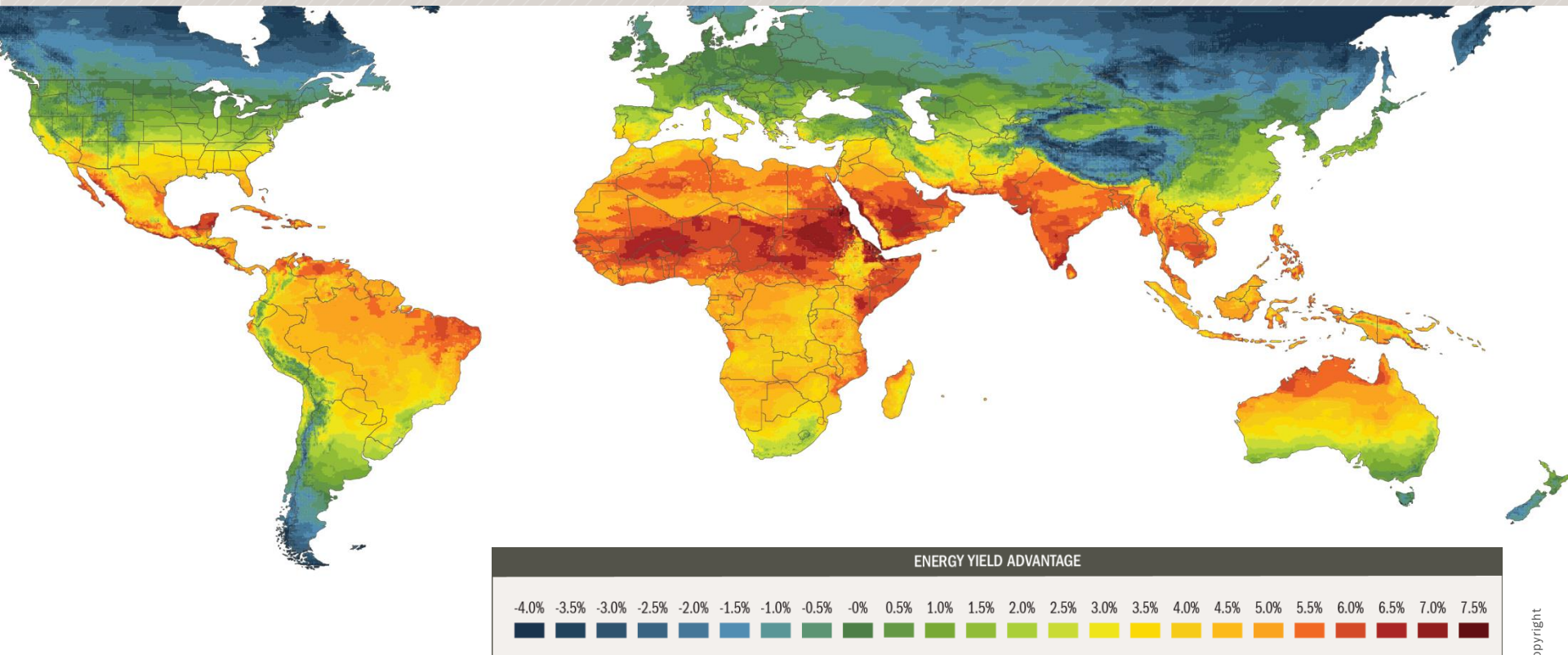


C-Si



BETTER
PERFORMANCE
THAN C-Si

ENERGY YIELD ADVANTAGE VS. C-SI



Powered by:



PROVIDING THE LEADING ECO-EFFICIENT PV TECHNOLOGY



proven energy
advantage



economically
competitive
with fossil fuel



lowest
environmental
impacts

- Validated by 3rd party research and global peer reviews
- Higher energy yields at a competitive cost
- Fastest energy payback time < 1 year
- Carbon footprint of First Solar PV modules is up to six times lower than conventional crystalline silicon modules
- Series 6 modules use up to 400 times less water per kWh than conventional energy and up to 24 times less water than other PV technologies
- Industry leading PV recycling program

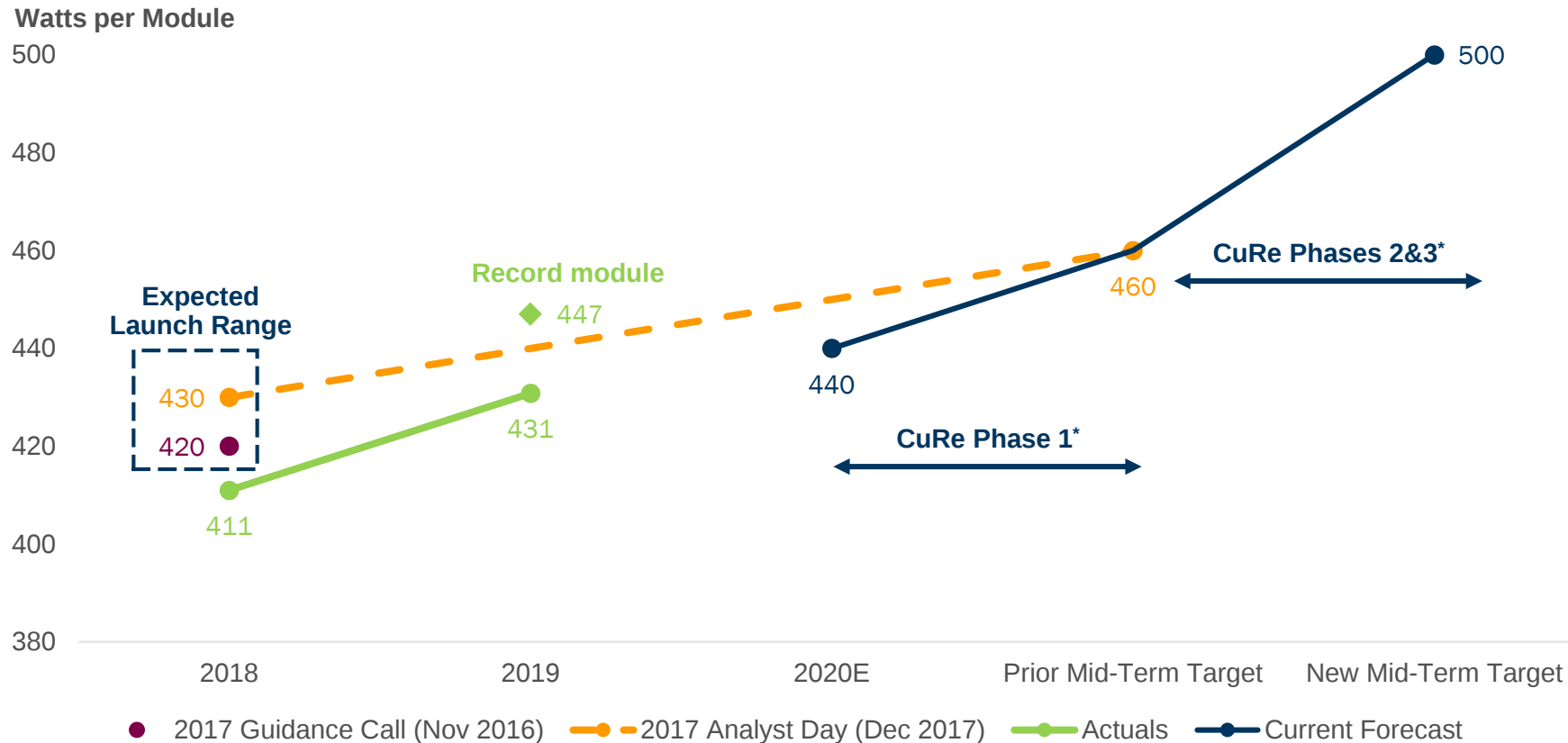
Creating **More Value** with **Less Environmental Impact**

Source: Seitz et al., Eco-Efficiency Analysis of Photovoltaic Modules, Bavarian State Ministry of Environment and Health, 2013; M. de Wild-Scholten, Energy Payback Time and Carbon Footprint of Commercial Photovoltaic Systems, Solar Energy Materials & Solar Cells 119, 296-305, 2013; Fthenakis and Kim. Life cycle uses of water in U.S. electricity generation. Renewable and Sustainable Energy Reviews vol. 14, pp. 2039-2048, 2010.



TECHNOLOGY AND COST ROADMAP

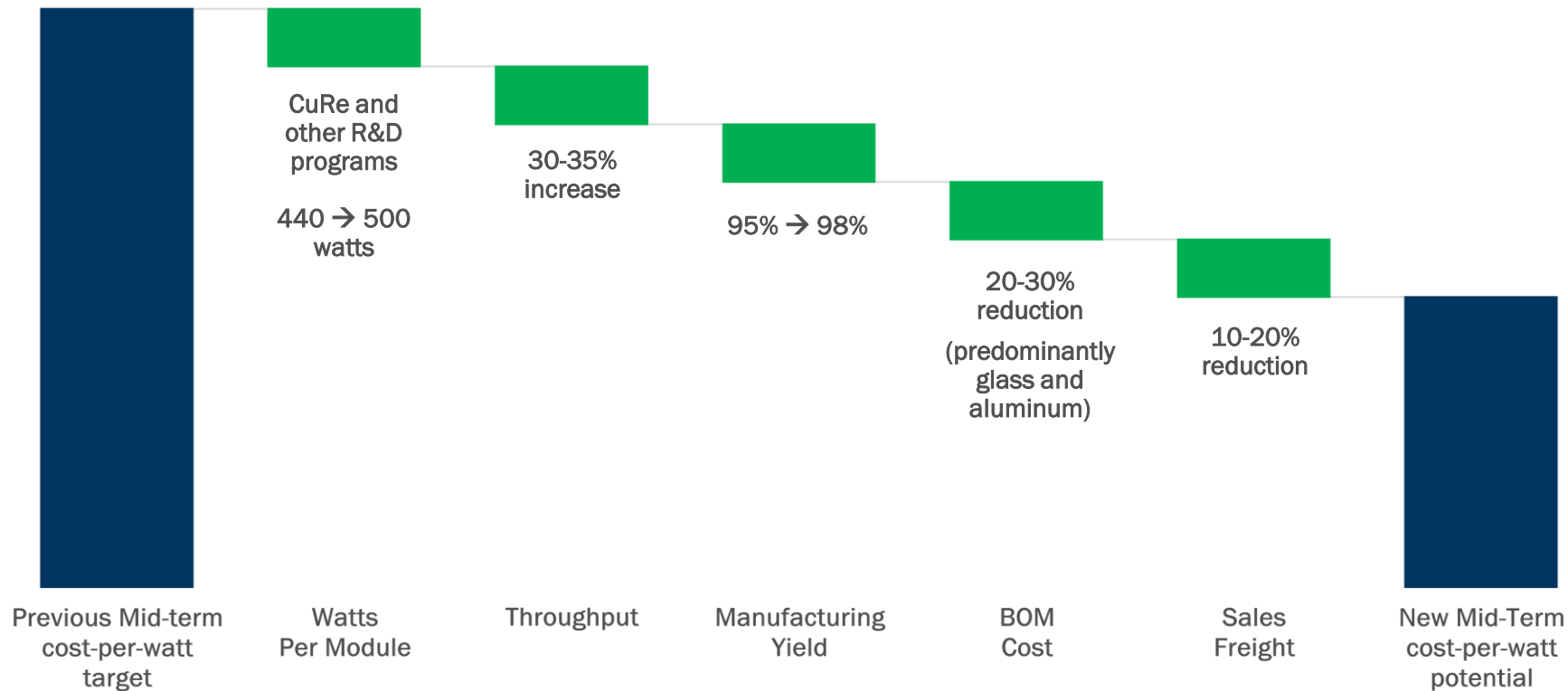
SERIES 6 EFFICIENCY ROADMAP



Note: Actuals represents fleet average year end exit rate

* = Forecast improvements inclusive of all R&D program, primarily driven by CuRe Phases 1-3

INDICATIVE DRIVERS OF MODULE COST REDUCTION

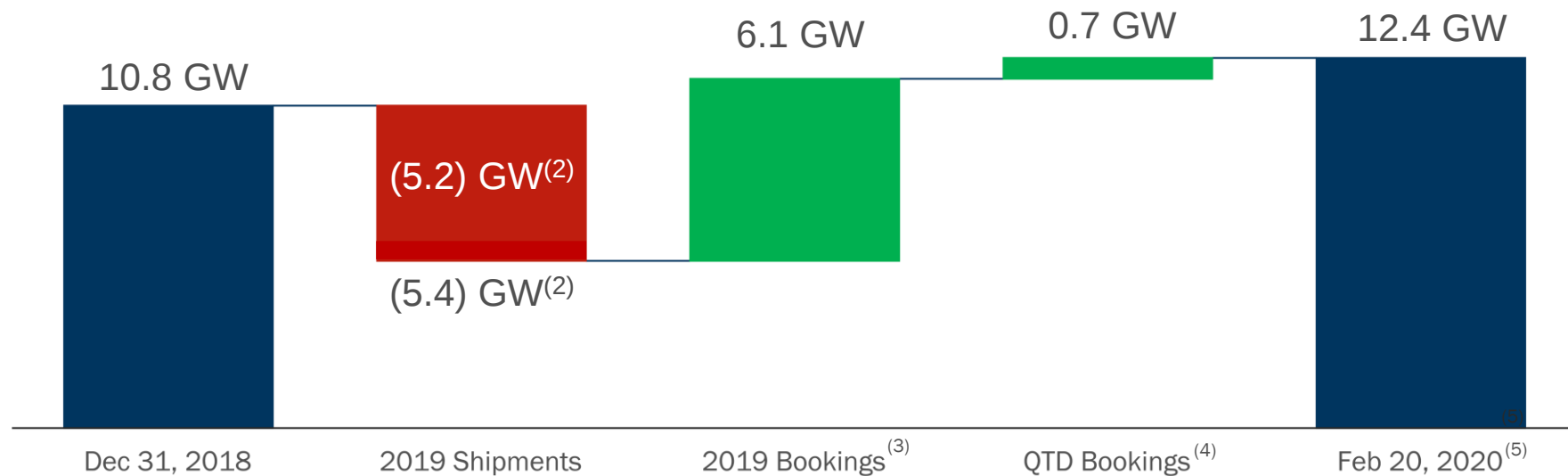


Note: Not to scale



BOOKINGS, FINANCIALS & GUIDANCE

EXPECTED MODULE SHIPMENTS⁽¹⁾ (GW_{DC}): SYSTEMS + THIRD-PARTY MODULE

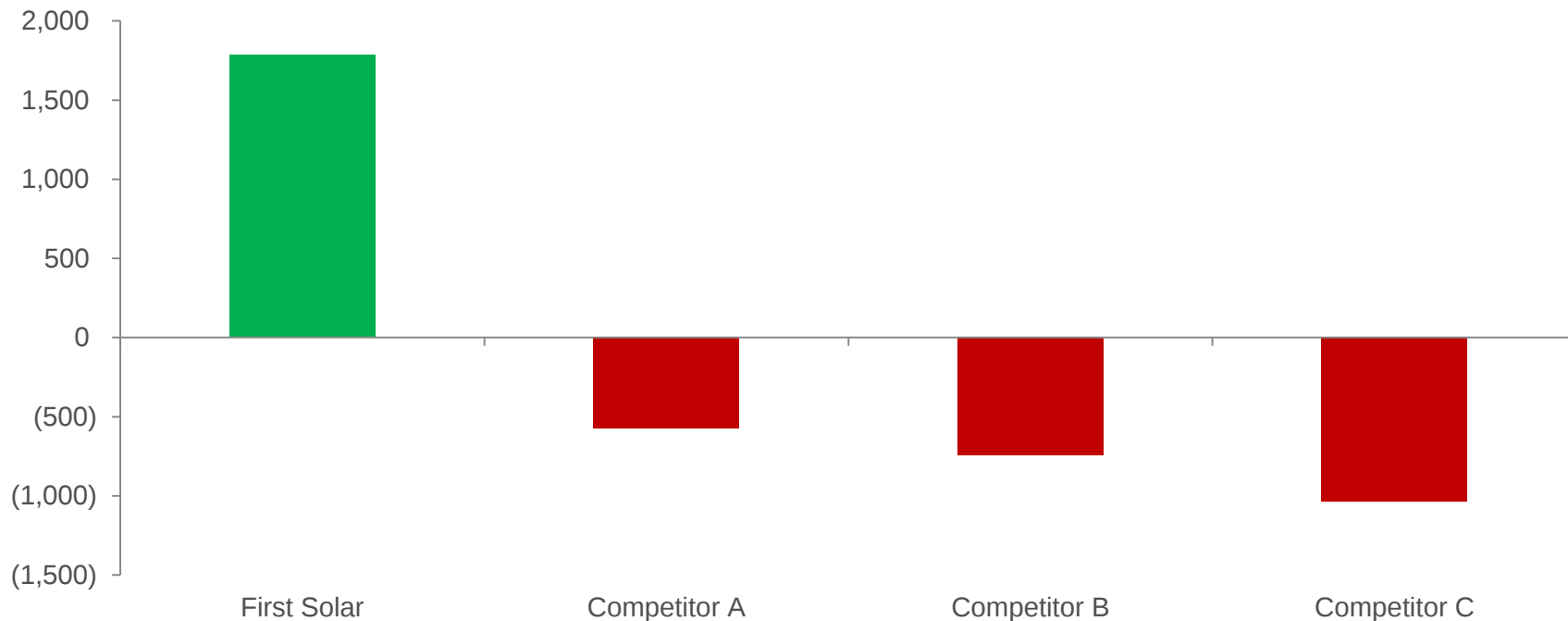


The above table presents the actual module shipments for 2019 through Dec 31, 2019, new module volume bookings through Feb 20, 2020, and the expected module shipments beyond Dec 31, 2019. A module is considered to be shipped when it leaves one of our manufacturing plants. Expected module shipments do 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) 5.2GW of net shipments deducted from backlog; 0.2GW of 5.4GW total shipments shipped to safe harbor the U.S. investment tax credit for future systems projects.
- (3) Reflects bookings from Jan 1, 2019 to Dec 31, 2019, reduced by 1.7 GW of debookings.
- (4) Reflects bookings from Jan 1, 2020 to Feb 20, 2020.
- (5) Balance includes remaining shipment volumes as of Dec 31, 2020 and bookings through Feb 20, 2020. Shipments from Jan 1 to Feb 20, 2020 not deducted.

INDUSTRY LEADING BALANCE SHEET

Net (Debt)⁽¹⁾/Cash⁽²⁾ in \$ millions



Net Interest Income / (Expense)	First Solar	Competitor A	Competitor B	Competitor C
	\$21.8mm	(\$50.7M)	(\$69.3M)	(\$56.2M)

Note: 'Net (Debt) / Cash' and 'Net Interest Income / (Expense)' are based on Fiscal Year 2019 financial filings; (1) Debt includes current portion of long-term debt, long-term debt and convertible debt; (2) Cash includes cash, cash equivalents, marketable securities and restricted cash

2020 GUIDANCE

As of February 20, 2020

Net Sales	\$2.7B to \$2.9B
Gross Margin (%) ¹	26% to 27%
Operating Expenses ²	\$340M to \$360M
Operating Income ³	\$360M to \$420M
Earnings Per Share	\$3.25 to \$3.75
Net Cash Balance ⁴	\$1.3B to \$1.5B
Capital Expenditures	\$450M to \$550M
Shipments	5.8GW to 6.0GW

- \$5M to \$15M of ramp impact included in COGS
- \$50M to \$60M of plant start-up included in Operating Expenses
- \$30M of Series 4 shutdown and other severance costs included in Operating Income



(1) Includes \$5 to \$15M of ramp cost. (2) Includes \$50 to \$60M of plant start-up expense. (3) Includes \$55 to \$75 million of ramp cost and plant start-up expense, and \$30 million of Series 4 shutdown and other severance costs. (4) Defined as cash, marketable securities and restricted cash less expected debt at the end of 2020



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