

Powering the 4th Industrial Revolution

RAYMOND JAMES CONFERENCE
MARCH 4, 2020

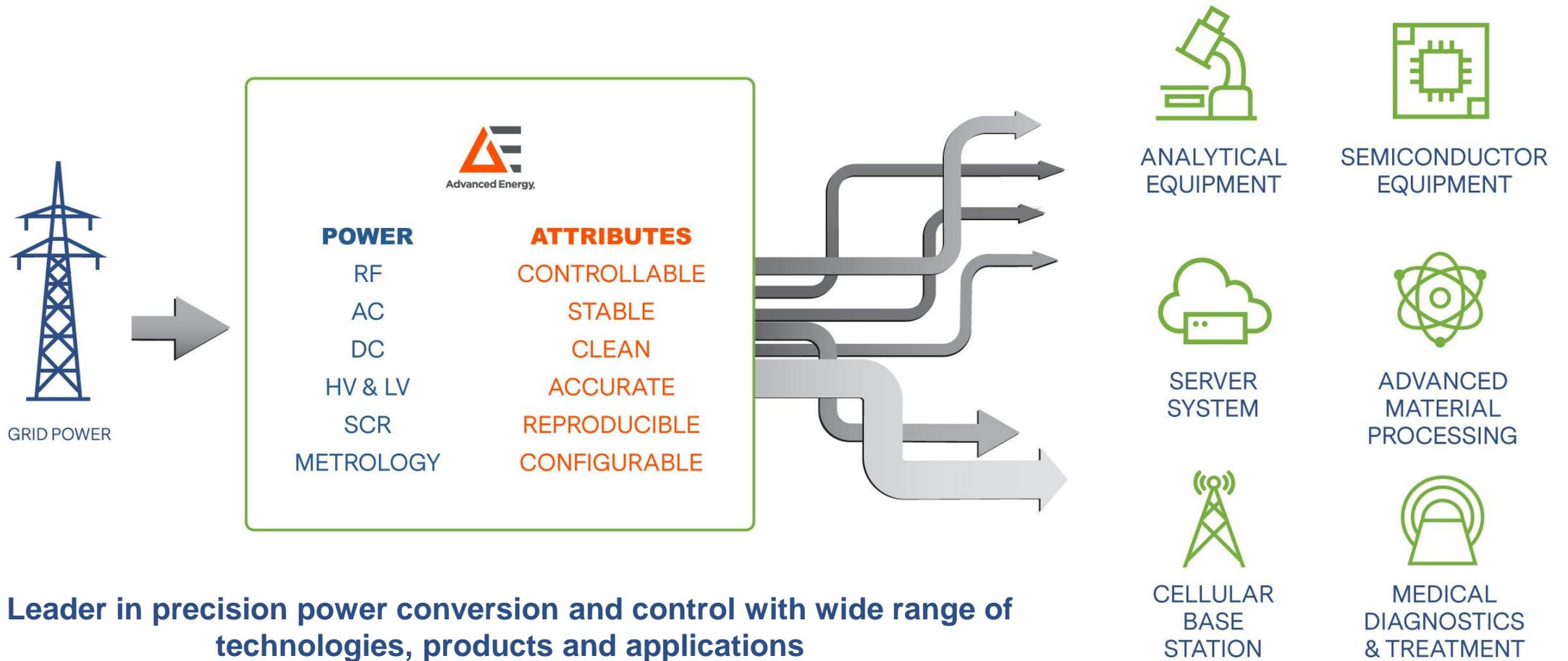
SAFE HARBOR

- The company's guidance with respect to anticipated financial results for future periods, potential future growth and profitability, future business mix, expectations regarding future market trends, future performance within specific markets and other statements herein or made on the conference call that are not historical information are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. Forward-looking statements are subject to known and unknown risks and uncertainties that could cause actual results to differ materially from those expressed or implied by such statements. Such risks and uncertainties include, but are not limited to: (a) the effects of global macroeconomic conditions upon demand for our products and services; (b) the volatility and cyclicity of the industries the company serves, particularly the semiconductor industry; (c) delays in capital spending by end-users in our served markets; (d) the risks and uncertainties related to the acquisition and integration of Artesyn Embedded Power including the optimization and reduction of our global manufacturing sites; (e) the recent outbreak of the 2019-Novel Coronavirus (2019-nCoV) and its potential adverse impact on our product manufacturing, supply chain and operations, (f) the accuracy of the company's estimates related to fulfilling solar inverter product warranty and post-warranty obligations; (g) the company's ability to realize its plan to avoid additional costs after the solar inverter wind-down; (h) the accuracy of the company's assumptions on which its financial statement projections are based; (i) the impact of product price changes, which may result from a variety of factors; (j) the timing of orders received from customers; (k) the company's ability to realize benefits from cost improvement efforts including avoided costs, restructuring plans and inorganic growth; (l) the company's ability to obtain in a timely manner the materials necessary to manufacture its products; (m) unanticipated changes to management's estimates, reserves or allowances; (n) changes and adjustments to the tax expense and benefits related to the U.S. tax reform that was enacted in late 2017; and (o) the effects of U.S. government trade and export restrictions, Chinese retaliatory trade actions, and other governmental action related to tariffs upon the demand for our, and our customers', products and services and the U.S. economy. These and other risks are described in Advanced Energy's Form 10 K, Forms 10 Q and other reports and statements filed with the Securities and Exchange Commission (the "SEC"). These reports and statements are available on the SEC's website at www.sec.gov. Copies may also be obtained from Advanced Energy's investor relations page at ir.advanced-energy.com or by contacting Advanced Energy's investor relations at 970 407 6555. Forward-looking statements are made and based on information available to the company on the date of this press release. Aspirational goals and targets discussed on the conference call or in the presentation materials should not be interpreted in any respect as guidance. The company assumes no obligation to update the information in this presentation.

POWERING THE 4TH INDUSTRIAL REVOLUTION

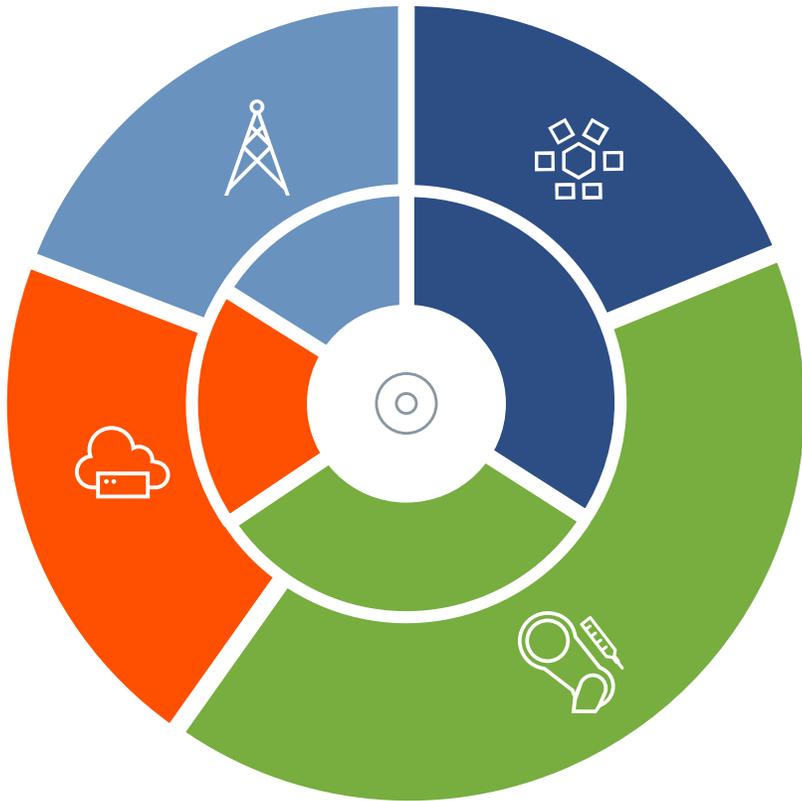
- **MARKET LEADER** in precision power solutions
- **GROWING** share and content across core markets
- **BROADENING** market presence through inorganic investments
- **ACCELERATING** earnings growth and Return on Invested Capital

WE ARE A PURE PLAY POWER LEADER



Leader in precision power conversion and control with wide range of technologies, products and applications

ADDRESSING CRITICAL MARKETS IN THE DATA ECONOMY

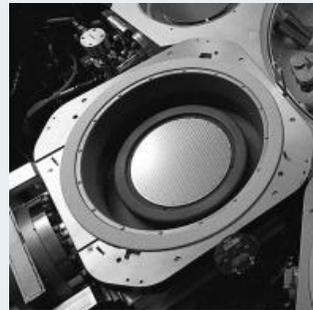


Combined SAM of **\$9.0 billion**⁽¹⁾

Pro Forma 2019 Revenues



SEMICONDUCTOR
EQUIPMENT
\$1.7 billion



Etch, Deposition,
Thermal, Ion Implant,
Epi, ECD, Inspection &
Metrology, Semi ATE,
Advanced Packaging



INDUSTRIAL &
MEDICAL
\$3.7 billion



Medical, Life Sciences,
Analytical Instruments,
Test & Measurement,
Material Processing,
Thermal Processing,
Motion Control,
Robotics, Horticulture



DATA CENTER
COMPUTING
\$1.9 billion



Hyperscale,
Data Center,
Cloud & Edge
Computing, Enterprise
Server & Storage
Systems



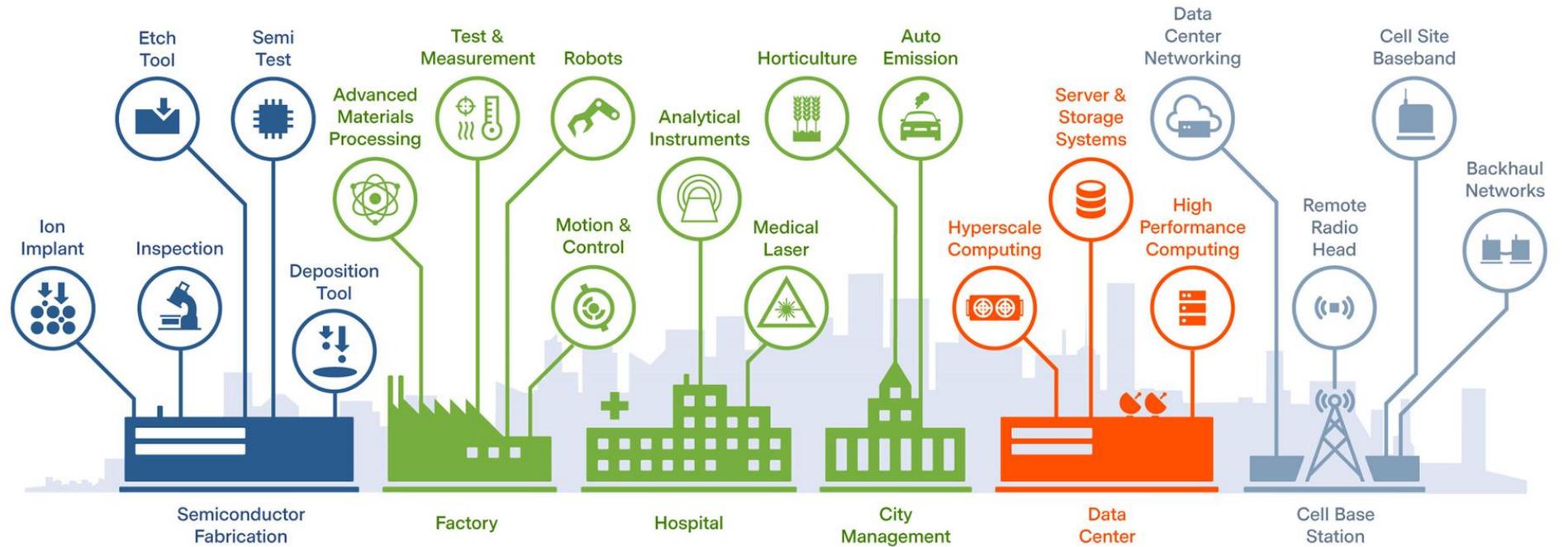
TELECOM &
NETWORKING
\$1.7 billion



Base Stations, Tower
Radio, 4G LTE & 5G
Cellular Infrastructure,
Enterprise Networking,
Wireless & Wireline
Communication

POWERING THE FOURTH INDUSTRIAL REVOLUTION

APPLICATIONS



INDUSTRIES

Advanced Power Products: Deliver precise power, control and measurement of processes

ADVANCED

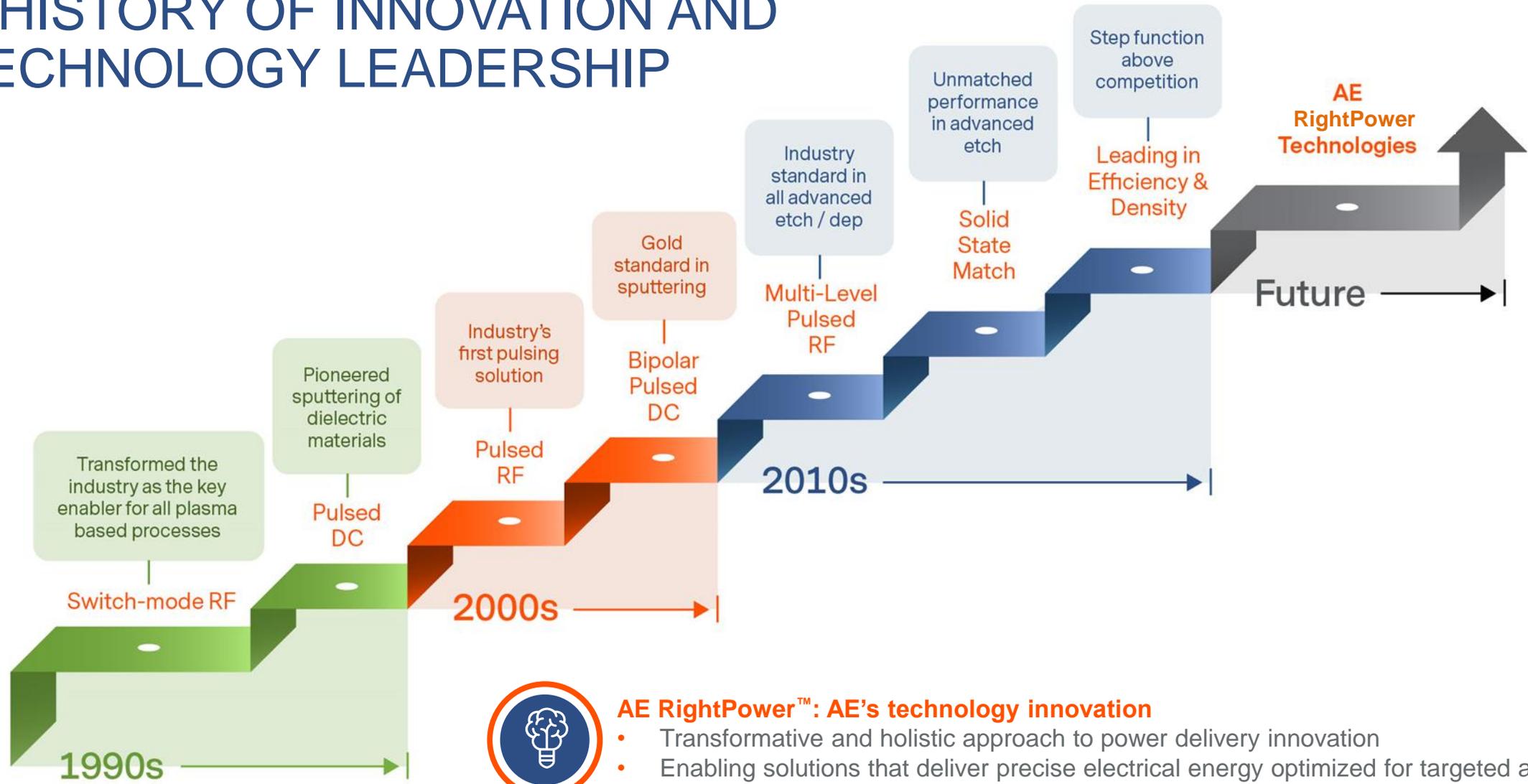


Embedded Power Products: Provide stable and efficient power for mission critical applications

EMBEDDED



A HISTORY OF INNOVATION AND TECHNOLOGY LEADERSHIP



AE RightPower™: AE's technology innovation

- Transformative and holistic approach to power delivery innovation
- Enabling solutions that deliver precise electrical energy optimized for targeted applications

TRANSFORMING INTO A DIVERSIFIED POWER LEADER

Deployed \$568M adding >\$750M of pro forma revenue⁽¹⁾

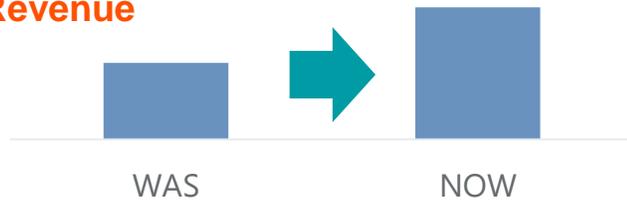
- Expanded our SAM by >4X
- A repeatable model in the large and fragmented power conversion market
- Artesyn integration – executing our synergies targets



ARTESYN - A HIGHLY STRATEGIC AND TRANSFORMATIVE ACQUISITION

GLOBAL PLATFORM

Revenue



GLOBAL PRESENCE ACROSS TECHNOLOGIES AND MARKETS

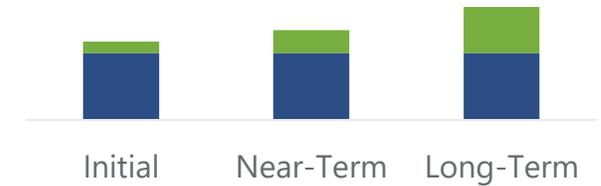
STRATEGIC FIT



HIGHLY COMPLEMENTARY AND SHARED CORE COMPETENCIES

ACCELERATED NG EPS GROWTH

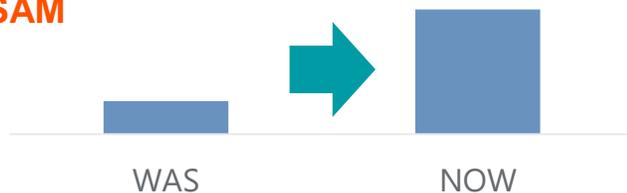
EPS Accretion⁽¹⁾



DRIVEN BY SYNERGIES OF >\$20M NEAR-TERM AND >\$40M LONG-TERM

EXPAND SAM BY ALMOST 4X

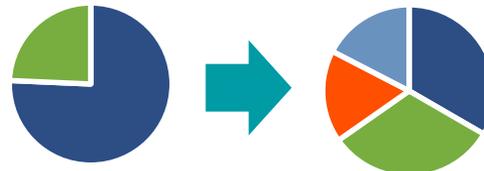
SAM



ADDING NEW VERTICALS AND CROSS SELLING OPPORTUNITIES

BROADENS AND DIVERSIFIES

Mix



MULTIPLE, STABLE GROWTH VERTICALS AND CUSTOMERS

ATTRACTIVE DEAL ECONOMICS

Synergies-Adjusted EBITDA Multiple⁽²⁾



WITH MEANINGFUL OPPORTUNITY FOR MARGIN EXPANSION

TARGETED GROWTH STRATEGY



GROW SHARE ACROSS MISSION CRITICAL, PRECISION POWER VERTICALS

- Expand content in semiconductor
- Grow in hyperscale data centers
- Capitalize on 5G migration
- Broaden industrial and medical footprint



INVEST IN **INNOVATION** AND TECHNOLOGY LEADERSHIP

- RF power leadership
- AE RightPower solutions
- Power efficiency and density
- Drive Industry 4.0 adoption



LEVERAGE STRONG FINANCIALS AND INCREASED SCALE TO CAPITALIZE ON **NEW OPPORTUNITIES**

- Cross selling
- New market verticals
- New joint product offerings
- Inorganic growth

AE PROCESS POWER ENABLES SEMI NODE TRANSITIONS



Process Challenges

3D Memory – small/deep holes
>70:1 aspect ratios

Memory stacking
Layer uniformity in thick stack

Atomic-scale logic features
Sidewalls and holes

Complex 3D shapes
3D transistors <10nm

High selectivity
Etch only what you want

Low stress in 3D and packaging
Flat vs. potato chips

Power Trends

Etch

- Tune-while-pulsing
- Higher energy

Deposition

- Higher frequency
- Shorter processes

Fragile films

- Low power accuracy
- Lower frequencies

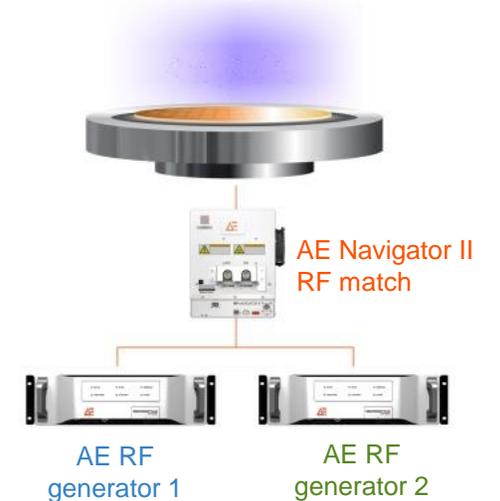
AE RightPower

- Integrated power topology
- Power metrology
- Control algorithms
- Connectivity
- **Advanced control & pulsing**

Beyond RF

- Mono-energetic control
- Tunable energy profile
- Novel energy control
- Novel wave shaping

Semiconductor process chamber
(i.e., etching a wafer)



AE First with Solutions for Power – First to Power Solutions

POWERING MORE OF THE PROCESS



Processes



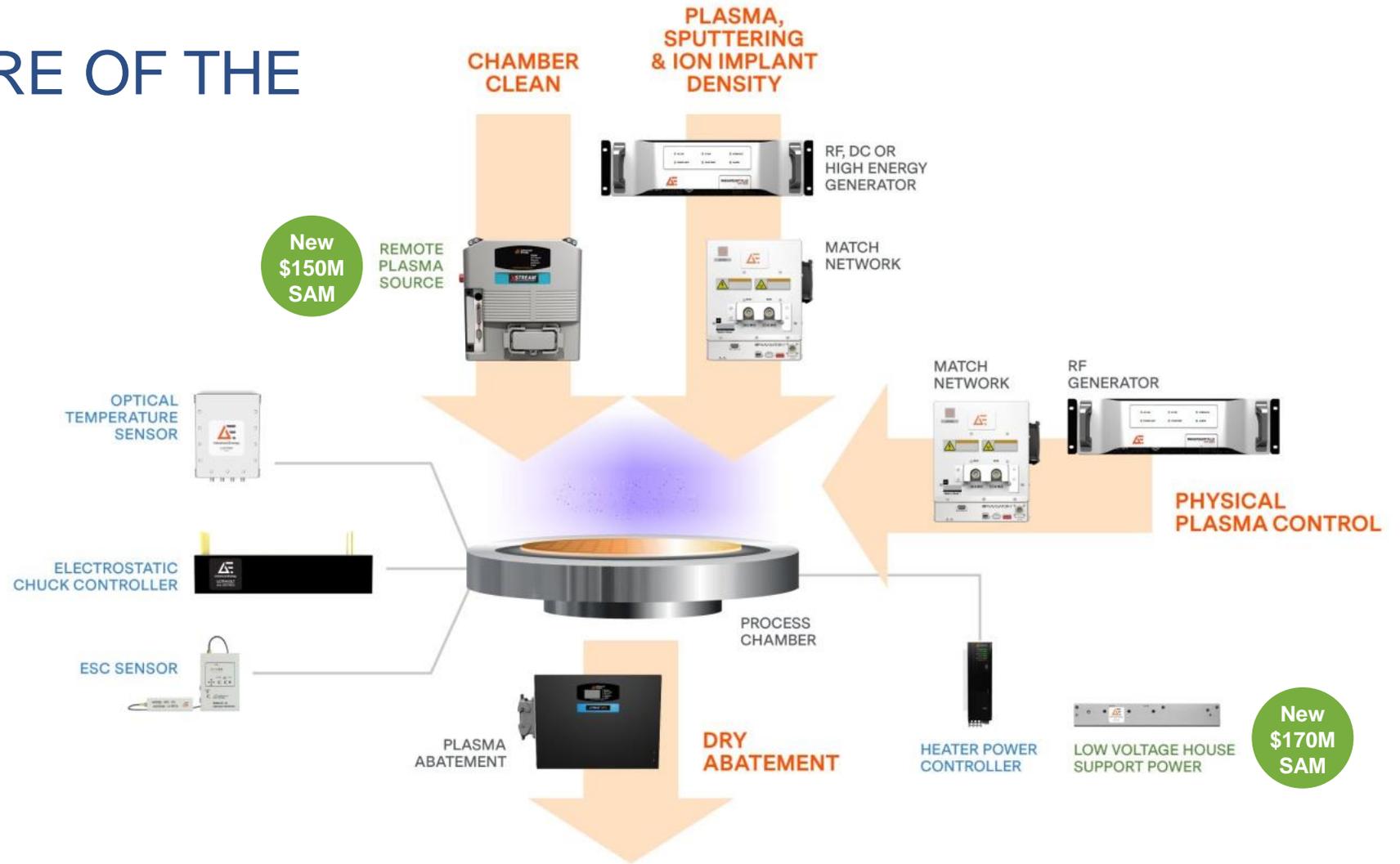
Core AE Innovation



Technologies acquired in last 5 years



New SAM expansion



AE RightPower Delivers Broader Integrated Solutions ... While Adding >\$750M SAM

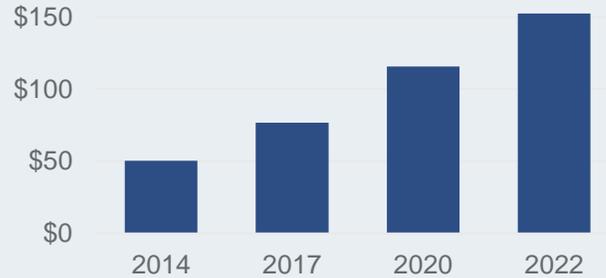
POWERING 4IR & GROWTH IN MEDICAL



FAVORABLE MARKET GROWTH TREND

Industry 4.0 End Market⁽¹⁾

(\$ in billions)



- Industry 4.0 related investments expected to grow at a 15%+ CAGR⁽¹⁾
- Explosive growth in autonomous and collaborative robots at 50%+ CAGR⁽¹⁾
- Increased use of power in diagnostic and therapeutic applications

GROWTH STRATEGY

- Expand standard product portfolio to serve Industry 4.0 applications
- Cross sell data center products into industrial edge applications
- Broaden product portfolio and expand channel in medical

WHY WE WIN

- Industry-leading portfolio of configurable power platforms
- Growing software capability for monitoring and control

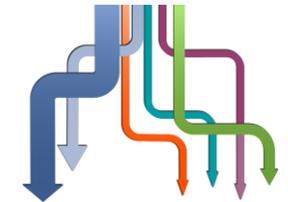
Standard with growing SW



Most advanced configurable power supply



(2)

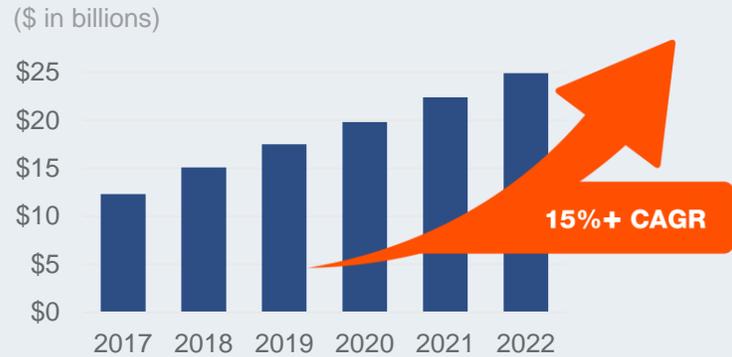


FOCUS ON HYPERSCALE



FAVORABLE MARKET GROWTH TREND

Hyperscale infrastructure end market⁽¹⁾



- Hyperscale growing at 15% CAGR⁽¹⁾
- Increasing data center traffic and IoT trends drive edge investment
- Increased workload driven by Artificial Intelligence and Machine Learning

GROWTH STRATEGY

- Launch market-leading efficiency products
- Accelerate time-to-market with standard data center power supplies
- Expand customer base to original design manufacturers

WHY WE WIN

- Industry-leading efficiency and density
- Trusted brand with 1M+ units shipped
- Significant design wins at majority of Tier 1 hyperscalers
- Strong reputation with deep engineering relationships

Technology leadership: 98% power efficiency

Efficiency	94%	96%	98%
No. of leading suppliers	15+	~7	2
	AE	AE	AE
			High technical challenges reduce competition

Server front-end density leadership



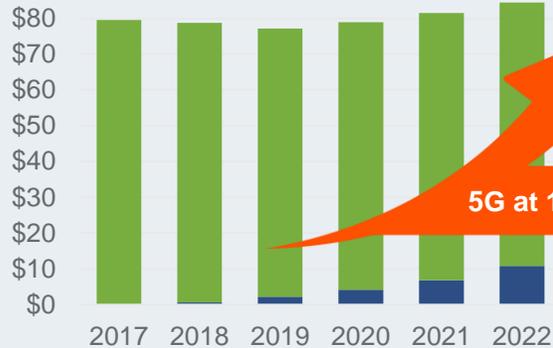
TARGET 5G INFRASTRUCTURE



FAVORABLE MARKET GROWTH TREND

Wireless infrastructure Spend⁽¹⁾

(\$ in billions)



- Growth returning to wireless infrastructure with 5G launch
- Increased capacity demand driven by expanding use cases

GROWTH STRATEGY

- Ramp current programs with key Tier 1 networking customers
- Win new designs in 5G radio power for both macro cells and small cells

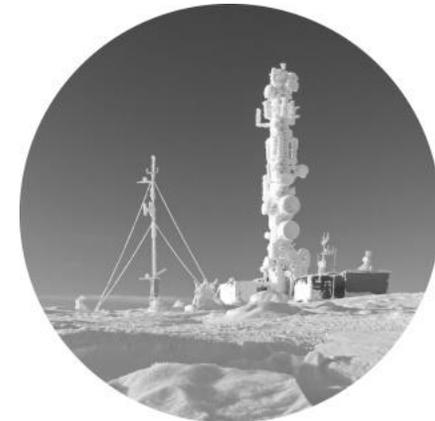
WHY WE WIN

- Leading reputation in high density, rugged power supplies for outdoor radio applications
- Secured significant 5G design wins across all leading base station OEMs
- Deep application knowledge and 20+ years of customer intimacy

Powering many of the largest wireless networks across the world



High reliability ruggedized power supply for the harshest of environments



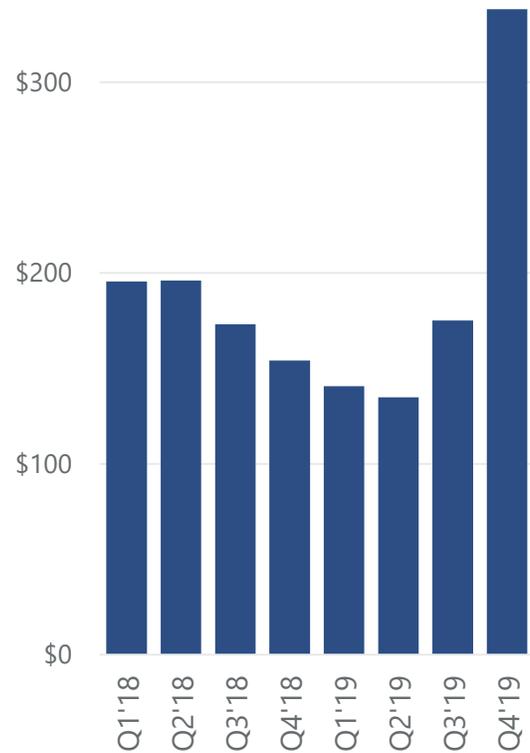
EARNINGS GROWTH VISION



RESILIENT FINANCIAL MODEL THROUGH DOWNTURN

REVENUE

(\$ in millions)



NON-GAAP OP INCOME

(\$ in millions)



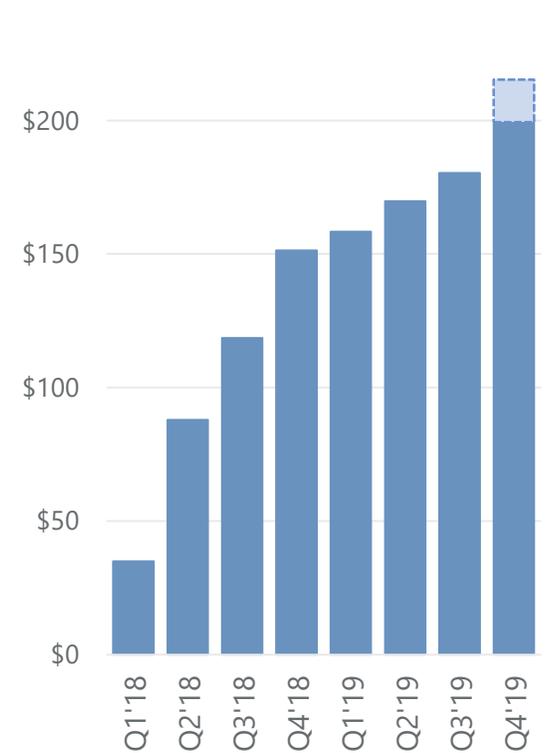
NON-GAAP EPS

(\$ per share)



CUMULATIVE CF

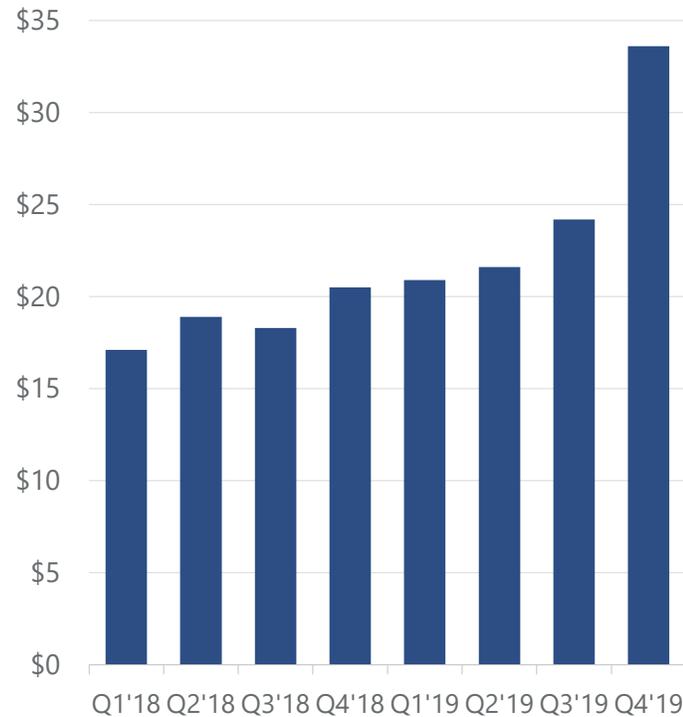
(\$ in millions)
\$250



INCREASED R&D INVESTMENTS WHILE OPTIMIZING COSTS

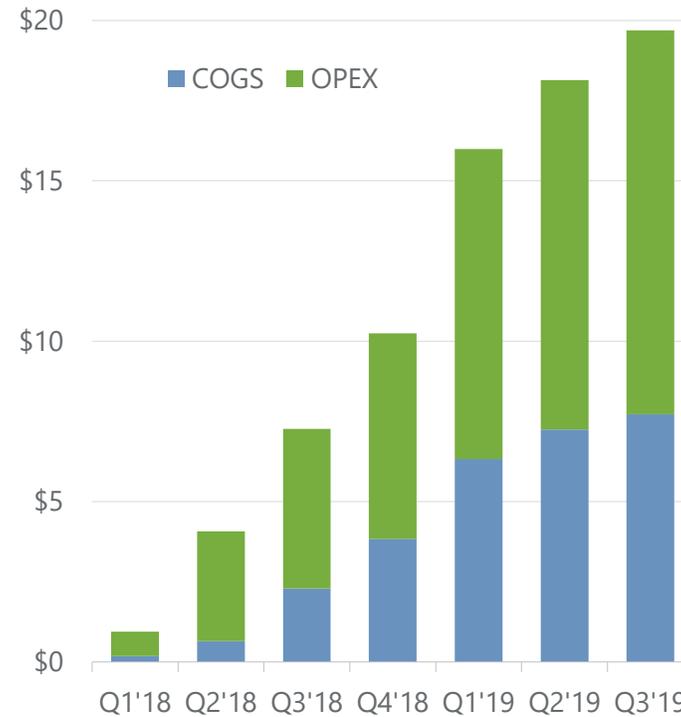
NON-GAAP R&D EXPENSES

(\$ in millions)



CUMULATIVE COST SAVINGS

(\$ in millions)



- **Increased** R&D organically **8%***
 - **Increased** capital investment **7%** to fund dual factory strategy*
-
- **Reduced** annualized SG&A **12%***
 - **Reduced** total headcount **8%***
 - **Closed** or reduced **three sites**
 - **Reduced** square footage **10%***

SYNERGY & SCALE ENABLE ACCELERATED EARNINGS GROWTH



A clear path to accelerate earnings from current levels

TARGET OPERATING MODEL YIELDS TOP TIER PERFORMANCE

	WITH INITIAL SYNERGIES	SYNERGIES FULLY REALIZED		
	Q4'19 Annualized	1.3B Model	1.4B Model	Long-term Target
Revenue (\$M)	\$1,350	\$1,300	\$1,400	\$1,500
N.G. Gross Margins	35.9%	36-37%	38-39%	40-41%
N.G. Operating Margins	13.2%	14-15%	17-18%	19-21%
Cash Flow (\$M) ⁽¹⁾	\$140	\$140	\$160	\$180
Non-GAAP EPS	\$3.48	\$3.75	\$5.00	\$6.50
ROIC ⁽²⁾	16%	15%	19%	23%

LEAN OPERATIONS ENABLE TOP QUARTILE ROIC

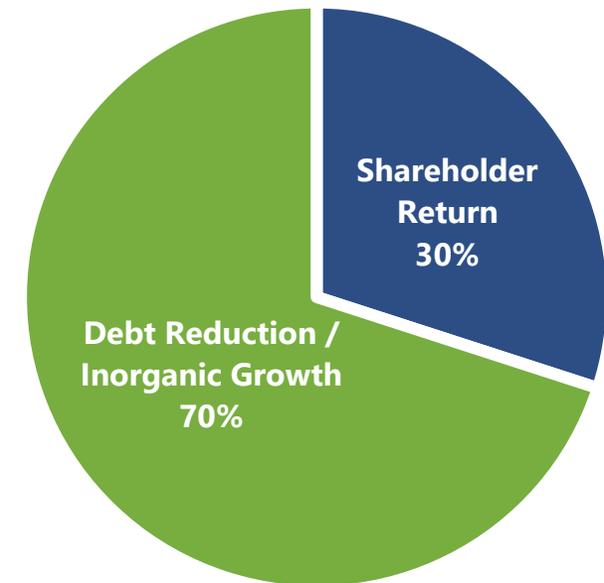
COMPARISON OF ROIC BETWEEN AEIS AND PUBLICALLY-TRADED PEERS
BASED ON TRAILING FOUR QUARTER RESULTS



CAPITAL ALLOCATION AND BALANCE SHEET

NEAR-TERM CAPITAL ALLOCATION PLAN

- Execute on Artesyn integration
- Focus on debt reduction
 - Drive target gross debt to 1.0-1.5x
 - Achieve in 12-18 months
- Maintain opportunistic share repurchase to offset dilution over time



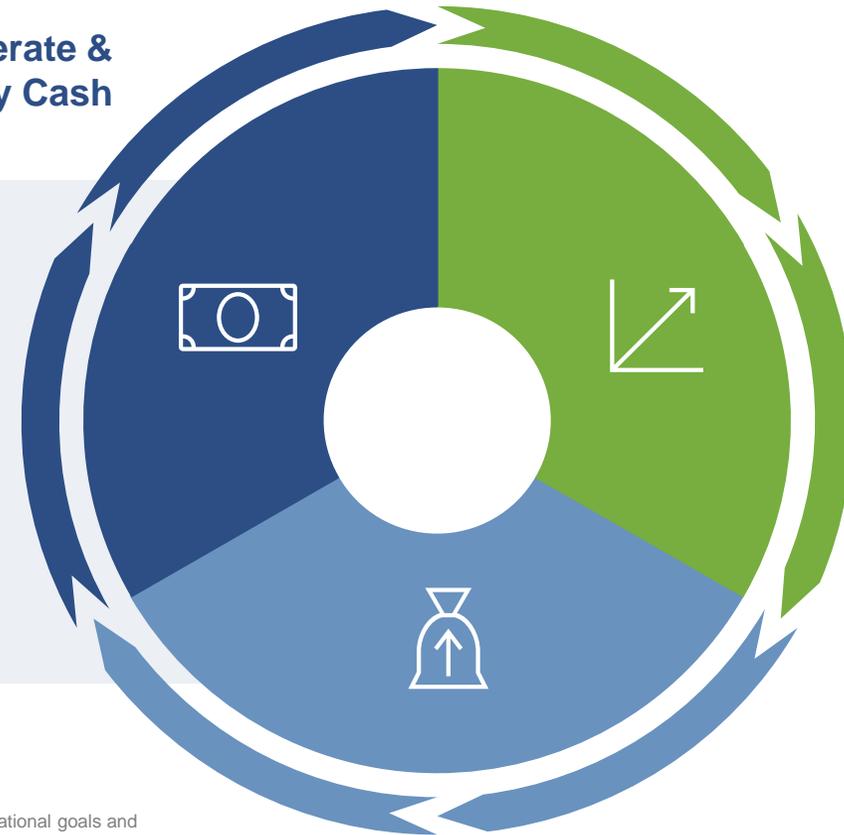
Position balance sheet to support continued inorganic growth

THREE-YEAR ASPIRATIONAL GOALS

Aspirational Goals⁽¹⁾ :

- Revenue: **> \$1.5B**
- Non-GAAP EPS⁽²⁾ : **> \$6.50**
- ROIC⁽³⁾ : **> 23%**

Generate &
Deploy Cash



Grow &
Diversify

Drive Strong
Profitability

(1) Please note that hypothetical scenarios regarding revenue growth, EBITDA, EPS, (GAAP or non-GAAP), ROIC, cash generation, acquisitions, aspirational goals and targets and similar statements illustrate various possible outcomes of our different strategies if they are successful. These hypothetical scenarios and illustrations should not be treated as forecasts or projections or financial guidance. We cannot assure you that we will be able to accomplish any of these goals, metrics or opportunities at any point in the future (if at all), all of which are subject to significant risks and uncertainties. Long-term targets generally reflect a 3-4 year time frame, depending on the timing of the semi recovery.

(2) Refer to the non-GAAP reconciliation for additional detail.

(3) ROIC calculated as Non-GAAP Operating Income After Tax divided by Invested Capital, which is defined as Total Assets less Cash, Payables, Accrued Expenses

POWERING THE 4TH INDUSTRIAL REVOLUTION

- **MARKET LEADER** in precision power solutions
- **GROWING** share and content across core markets
- **BROADENING** market presence through inorganic investments
- **ACCELERATING** earnings growth and Return on Invested Capital

The text 'THANK YOU' in a large, dark blue, sans-serif font, centered on the white background of the slide.

THANK YOU

NON-GAAP MEASURES

- Advanced Energy's non-GAAP measures exclude the impact of non-cash related charges such as stock-based compensation and amortization of intangible assets, as well as discontinued operations, minority interest, and non-recurring items such as acquisition-related costs and restructuring expenses. The non-GAAP measures are not in accordance with, or an alternative for, similar measures calculated under generally accepted accounting principles and may be different from non-GAAP measures used by other companies. In addition, these non-GAAP measures are not based on any comprehensive set of accounting rules or principles. Advanced Energy believes that these non-GAAP measures provide useful information to management and investors to evaluate business performance without the impacts of certain non-cash charges and other charges which are not part of the company's usual operations. The company uses these non-GAAP measures to assess performance against business objectives, make business decisions, develop budgets, forecast future periods, assess trends and evaluate financial impacts of various scenarios. In addition, management's incentive plans include these non-GAAP measures as criteria for achievements. Additionally, the company believes that these non-GAAP measures, in combination with its financial results calculated in accordance with GAAP, provide investors with additional perspective. While some of the excluded items may be incurred and reflected in the company's GAAP financial results in the foreseeable future, the company believes that the items excluded from certain non-GAAP measures do not accurately reflect the underlying performance of its continuing operations for the period in which they are incurred. The use of non-GAAP measures has limitations in that such measures do not reflect all of the amounts associated with the company's results of operations as determined in accordance with GAAP, and these measures should only be used to evaluate the company's results of operations in conjunction with the corresponding GAAP measures. Please refer to the Form 8-K regarding this presentation furnished today to the Securities and Exchange Commission.

NON-GAAP RECONCILIATION

	Twelve months ended December 31,			
	2016	2017	2018	2019
Revenue	\$ 483.7	\$ 671.0	\$ 718.9	\$ 788.9
GAAP Operating Income	\$ 126.9	\$ 200.8	\$ 171.6	\$ 54.4
Add back:				
Restructuring Charges	-	-	4.2	5.0
Acquisition-related Costs	-	0.2	2.3	20.3
Stock-based Compensation	6.3	12.5	9.7	7.3
Amortization of Intangible Assets	4.2	4.4	5.8	12.2
Facility Transition and Relocation Costs	-	-	1.8	4.8
Non-GAAP Operating Income	\$ 137.4	\$ 217.8	\$ 195.4	\$ 104.0
<i>Non-GAAP Operating Margin % of Revenue</i>	28.4%	32.5%	27.2%	13.2%

	Twelve months ended December 31,			
	2016	2017	2018	2019
GAAP Income from Continuing Operations	\$ 116.9	\$ 136.1	\$ 147.1	\$ 56.5
Add back:				
Restructuring Charges	-	-	4.2	5.0
Acquisition-related Costs	-	0.2	2.3	20.3
Stock-based Compensation	6.3	12.5	9.7	7.3
Amortization of Intangible Assets	4.2	4.4	5.8	12.2
Loss on Foreign Exchange Hedge	-	3.5	-	-
Facility Transition and Relocation Costs	-	-	1.8	4.8
Incremental Expense Associated with Start-up of the Asia Regional Headquarters	-	1.1	-	-
Nonrecurring Tax (Benefit) Expense Associated with Inverter Business	-	(33.8)	-	-
Central inverter services business sale	-	-	-	(13.7)
Tax Cuts and Jobs Act Impact	-	72.9	5.7	-
Tax Effect of Non-GAAP Adjustments	(2.9)	(5.3)	(4.6)	1.5
Non-GAAP Net Income	\$ 124.6	\$ 191.5	\$ 172.0	\$ 93.9
Share Outstanding (Millions)	40.0	40.2	39.4	38.5
Non-GAAP EPS	\$ 3.11	\$ 4.77	\$ 4.37	\$ 2.44

NON-GAAP RECONCILIATION

Reconciliation of Non-GAAP measure - operating expenses and operating income, excluding certain items

	Three Months Ended			Year Ended	
	December 31,		September 30,	December 31,	
	2019	2018	2019	2019	2018
Gross profit from continuing operations, as reported	\$ 112,295	\$ 75,188	\$ 73,491	\$ 315,652	\$ 365,607
Adjustments to gross profit:					
Stock-based compensation	160	166	77	525	742
Facility expansion and relocation costs	2,229	354	1,342	3,891	1,328
Acquisition-related costs	6,784	411	1,506	8,290	569
Non-GAAP gross profit	121,468	76,119	76,416	328,358	368,246
Non-GAAP gross margin	35.9%	49.4%	43.6%	41.6%	51.2%
Operating expenses from continuing operations, as reported	90,093	55,618	64,101	261,264	194,054
Adjustments:					
Amortization of intangible assets	(5,319)	(1,816)	(3,002)	(12,168)	(5,774)
Stock-based compensation	(2,115)	(2,077)	(840)	(6,803)	(8,961)
Acquisition-related costs	(2,562)	(416)	(6,398)	(12,002)	(1,726)
Facility expansion and relocation costs	(651)	—	(223)	(948)	(518)
Restructuring charges	(1,418)	(3,836)	(152)	(5,038)	(4,239)
Non-GAAP operating expenses	78,028	47,473	53,486	224,305	172,836
Non-GAAP operating income	\$ 43,440	\$ 28,646	\$ 22,930	\$ 104,053	\$ 195,410
Non-GAAP operating margin	12.8%	18.6%	13.1%	13.2%	27.2%

Reconciliation of Non-GAAP measure - income excluding certain items

	Three Months Ended			Year Ended	
	December 31,		September 30,	December 31,	
	2019	2018	2019	2019	2018
Income from continuing operations, less noncontrolling interest, net of income taxes	\$ 10,474	\$ 19,218	\$ 7,246	\$ 56,461	\$ 147,063
Adjustments:					
Amortization of intangible assets	5,319	1,816	2,973	12,168	5,774
Acquisition-related costs	9,346	827	7,904	20,292	2,295
Facility expansion and relocation costs	2,879	354	1,565	4,838	1,846
Restructuring charges	1,418	3,836	152	5,038	4,239
Tax Cuts and Jobs Act Impact	—	1,452	—	—	5,703
Central inverter services business sale	1,067	—	—	(13,737)	—
Tax effect of Non-GAAP adjustments	1,195	(1,198)	326	3,206	(2,344)
Non-GAAP income, net of income taxes, excluding stock-based compensation	31,698	26,305	20,166	88,237	164,576
Stock-based compensation, net of taxes	1,740	1,705	702	5,627	7,421
Non-GAAP income, net of income taxes	\$ 33,438	\$ 28,010	\$ 20,868	\$ 93,864	\$ 171,997

Reconciliation of Non-GAAP measure - per share earnings excluding certain items

	Three Months Ended			Year Ended	
	December 31,		September 30,	December 31,	
	2019	2018	2019	2019	2018
Diluted earnings per share from continuing operations, as reported	\$ 0.28	\$ 0.50	\$ 0.19	\$ 1.48	\$ 3.74
Add back (subtract):					
per share impact of Non-GAAP adjustments, net of tax	0.59	0.23	0.35	0.96	0.63
Non-GAAP per share earnings	\$ 0.87	\$ 0.73	\$ 0.54	\$ 2.44	\$ 4.37

RECONCILIATION OF Q1 2020 GUIDANCE

	Low End		High End
Revenue	\$280M	-	\$340M
Reconciliation of non-GAAP** earnings per share			
GAAP earnings per share	\$0.06	-	\$0.66
Stock-based compensation	\$0.09	-	\$0.09
Amortization of intangible assets	\$0.14	-	\$0.14
Amortization of inventory step-up	\$0.13	-	\$0.13
Restructuring and other	\$0.05	-	\$0.05
Tax effects of excluded items	-\$0.07	-	-\$0.07
Non-GAAP** earnings per share	\$0.40	-	\$1.00