

Innovation Driving Growth



Winter 2019

Safe Harbor

The company's guidance with respect to anticipated financial results for the fourth quarter ending December 31, 2018, potential future growth and profitability, our future business mix, expectations regarding future market trends and the company's future performance within specific markets (e.g., statements regarding anticipated semiconductor and industrial market growth) and other statements herein or made on the above-announced 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 cyclical nature of the industries the company serves, particularly the semiconductor industry; (c) delays in capital spending by end-users in our served markets; (d) the accuracy of the company's estimates related to fulfilling solar inverter product warranty and post-warranty obligations; (e) the company's ability to realize its plan to avoid additional costs after the solar inverter wind-down; (f) the accuracy of the company's assumptions on which its financial statement projections are based; (g) the impact of product price changes, which may result from a variety of factors; (h) the timing of orders received from customers; (i) the company's ability to realize benefits from cost improvement efforts including avoided costs, restructuring plans and inorganic growth; (j) the company's ability to obtain in a timely manner the materials necessary to manufacture its products; (k) unanticipated changes to management's estimates, reserves or allowances; and (l) changes and adjustments to the tax expense and benefits related to the recently enacted U.S. tax reform. 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 <http://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 presentation. Aspirational goals and targets discussed in the presentation materials should not be interpreted in any respect as guidance. The company assumes no obligation to update the information in this press release.

Precision Power Technology Leader

MARKET LEADER in precision power generation, conversion, measurement, and control

ENABLING CRITICAL APPLICATIONS in high growth markets driven by the new data economy and precise power control

BROADENING into industrial technology markets and applications by leveraging core competencies

STRONG FINANCIAL MODEL enables foundation for profitable growth and shareholder return

Enabling the Future



SMARTPHONES



CONSUMER ELECTRONICS



AUTOMOBILE



DISPLAY



MEDICAL DEVICES & TECHNOLOGY



*AE's Critical Power Technology
Enabling Everyday Products*

Delivering Precision Power for Critical Applications

CONTROLLABLE
STABLE
CLEAN
ACCURATE
REPRODUCIBLE
CONFIGURABLE

RF
AC
DC
HV
LV
PCM
Metrology



Grid Power



ANALYTICAL EQUIPMENT



SEMI EQUIPMENT



ADVANCED MATERIAL PROCESSING



INDUSTRIAL POWER

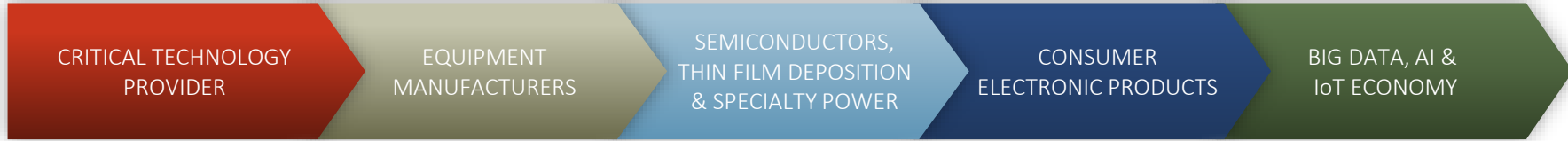


AEROSPACE & DEFENSE



MEDICAL DIAGNOSTICS & TREATMENT

A Critical Technology Provider in the Value Chain



MARKET LEADERS



PRODUCTS



Markets and Applications

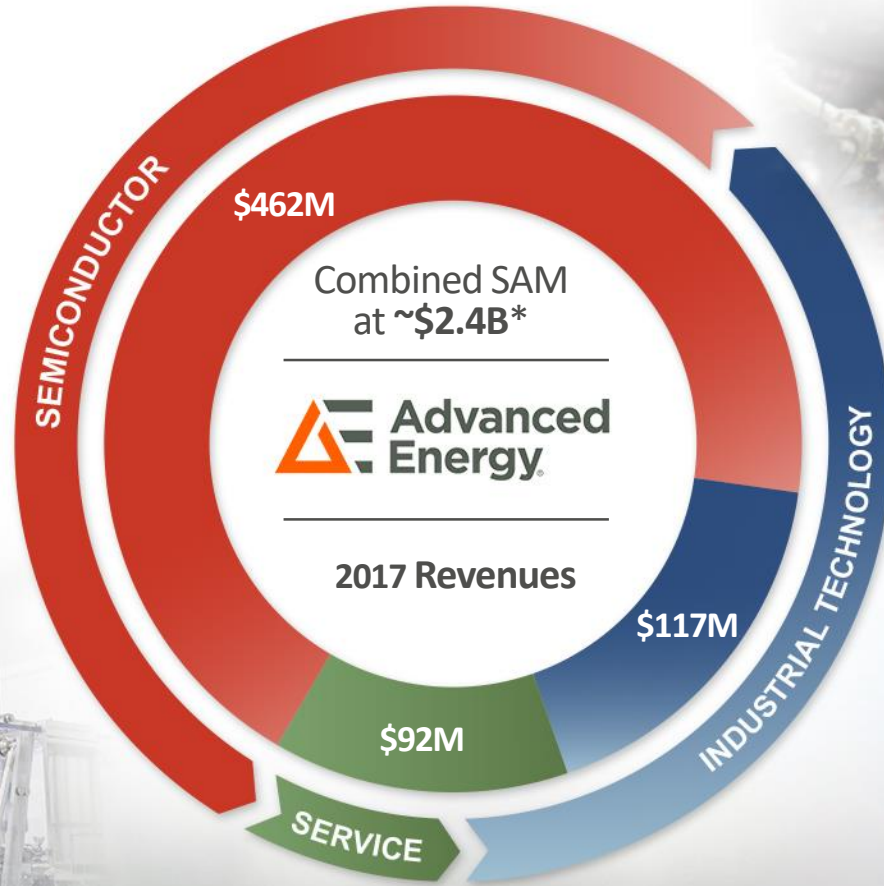


Semiconductor

Etch, Deposition, Thermal, Epi, Implant, ECD, Inspection and Metrology

Service

Contracts, on-demand, retrofits, upgrades, refurbishments



Advanced Materials

Display, Glass, Consumer Electronics, Optical, PV Solar, Automotive, Industrial/Hard Coating

Applied Power

Medical, Life Sciences, Analytical Instrumentation, Environmental, Custom Power, Aerospace, Defense



* AE estimates

Driven By Big Data and Precise Power Control

BIG DATA

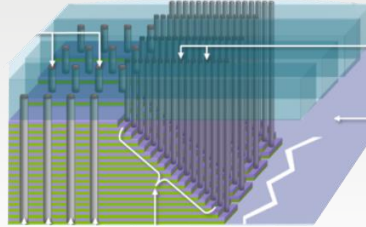
- Artificial Intelligence
- IoT / IIoT / Ind. 4.0
- Autonomous Driving
- Machine Learning



248X Data/Yr Created ⁽¹⁾

DEVICE COMPLEXITY

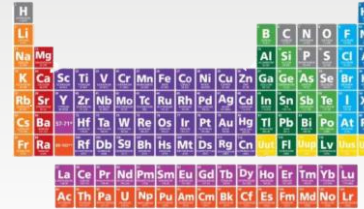
- NAND > 96 layer
- FinFET & Nanowire
- SAxP vs LExP vs EUV
- >2,000 dpi Display



4X NAND Cleanroom Ft² ⁽¹⁾

ENGINEERED MATERIALS

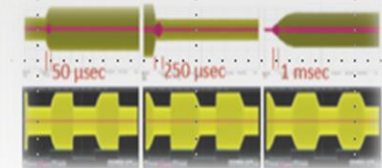
- Hard coatings for consumer & industrial
- Optical & glass thin films
- Flat Panel & Solar PV



6X No. of Material Types ⁽²⁾

PRECISION POWER

- Precision instruments
- Analytical equipment
- Medical & surgical applications
- Metrology



2.3X Medical Laser Mkt ⁽³⁾

2021
62,000
Billion
GB/Year

2000
-07

250B GB/yr

96L VNAND

2D
NAND

Si, Metals,
Dielectric in
Future
Device

10

Past

\$11.5B
in 2022

\$5.0B
in 2016



(1) Source: Micron Presentation
(2) Source: Applied Materials Presentation

(3) Source: BCC Research

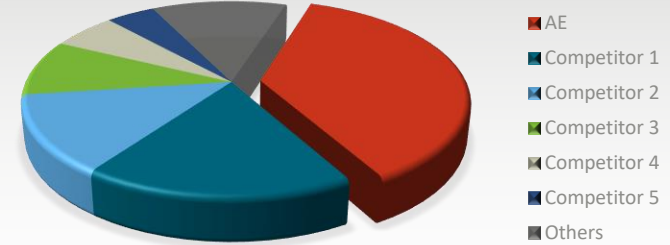
Sustained Growth on Strong Market Leadership

PURE-PLAY TECHNOLOGY LEADER



First to introduce many new power technologies and innovation

MARKET SHARE LEADER



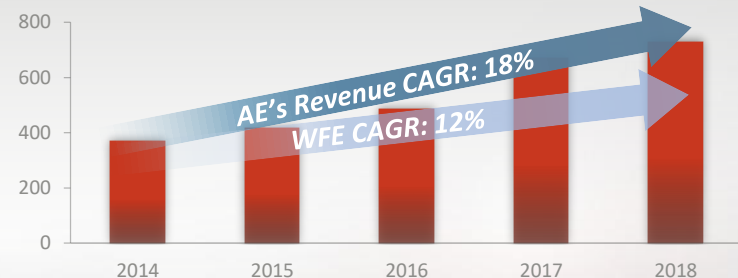
AE's market share = ~2X the next competitor⁽¹⁾

DEEP APPLICATIONS KNOWLEDGE

	Was	Now	
Conductor & Dielectric Etch	Plasma Enhanced CVD	Plasma Enhanced ALD	Epitaxial Deposition
Ionized PVD	Thin-Film Sputtering	Annealing & RTP	Abatement
Electrostatic Chuck	Ion Implantation	Metrology	Thermal Measurement

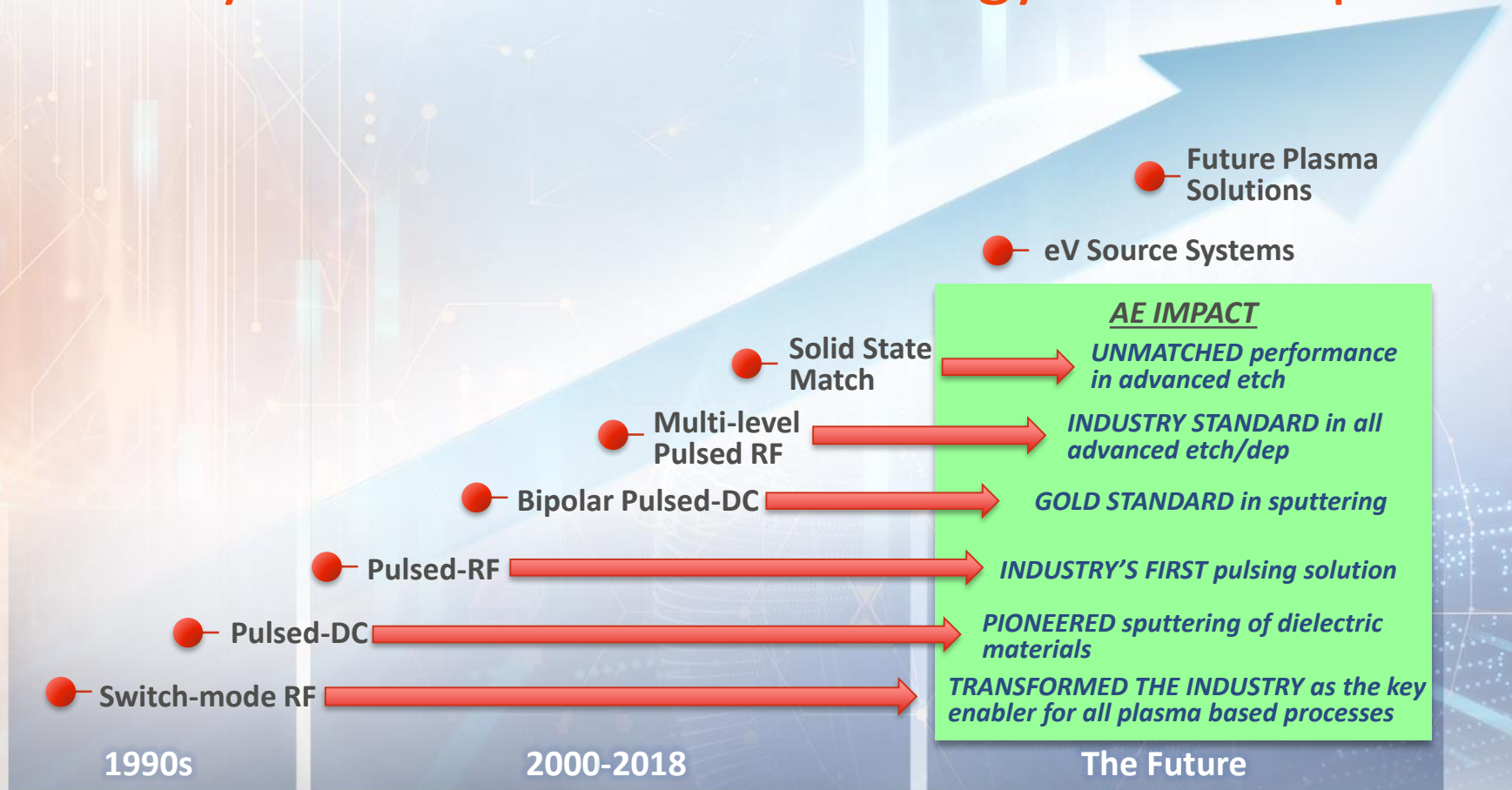
Customers come to AE for solutions to the toughest technical challenges

GROWING FASTER THAN THE MARKET



Increased content and share gain drove an above-market revenue CAGR of 18%⁽²⁾

A History of Innovation & Technology Leadership



Revenue Growth Vision

Delivering Highly Engineered, Designed-in Solutions for Critical Applications in Highly Regulated Markets



NEW

Applied Power

Acquire and Grow in Core and New Verticals



ADJACENT

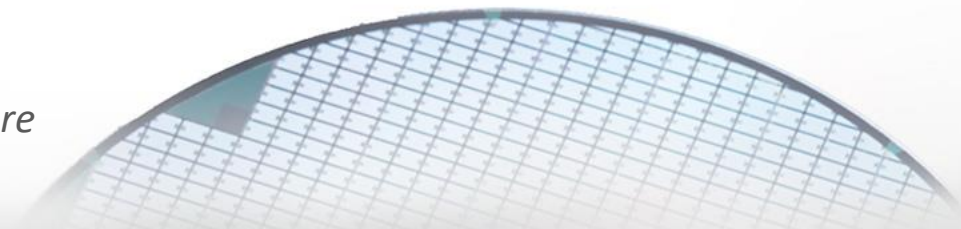
Advanced Materials

New Applications, Integrated Solutions, Geographic Expansion

CORE

Semiconductor

Expand Content and Grow Share



Semi: Broadest Footprint Across Processes & Devices

Conductor & Dielectric Etch

Plasma Enhanced CVD

Plasma Enhanced ALD

Abatement

Electro-Chemical Deposition

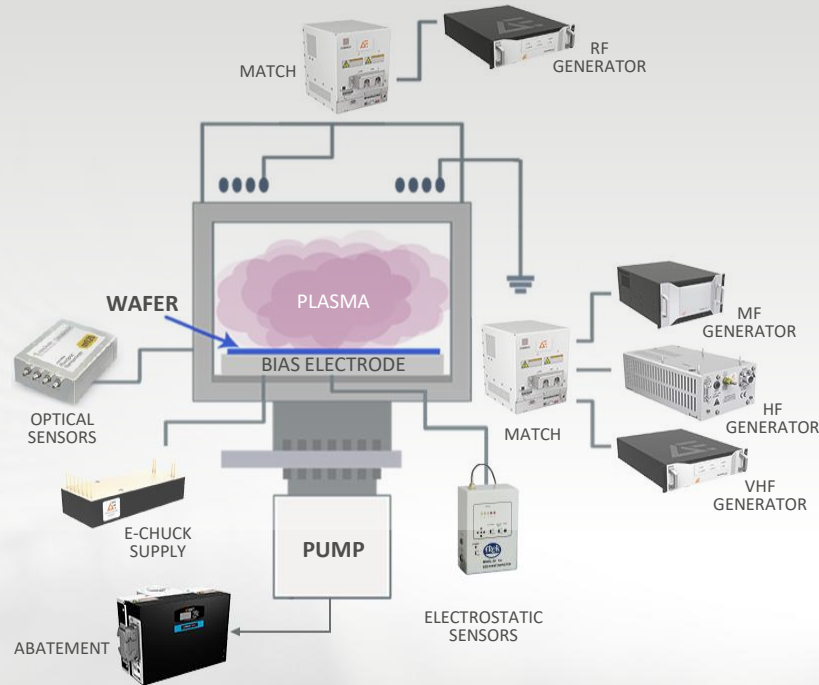
Epitaxial Deposition

E-chuck

Metrology

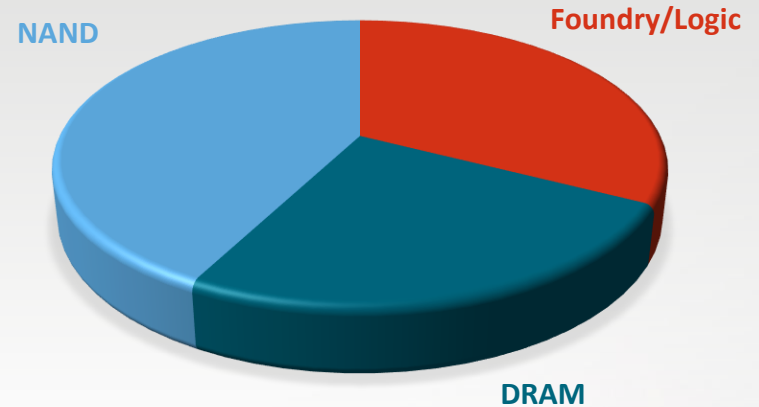
Temperature Measurement

EXPANDING CONTENT WITHIN THE CHAMBER



BROAD EXPOSURE ACROSS ALL DEVICE TYPES

AE's SEMI Revenue Share by Device Types*



Content per Etch Chamber increased by >2.5X from planar to 3D NAND

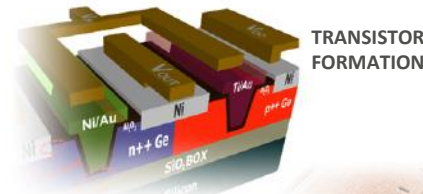
Semi: Expanding Content and Growing Share

KEY INDUSTRY DRIVERS



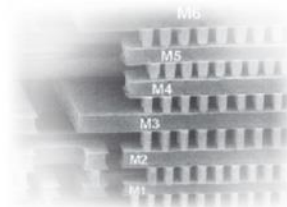
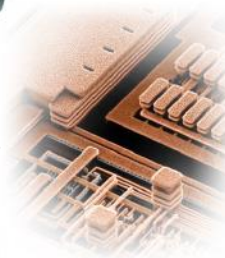
BIG DATA /
ARTIFICIAL
INTELLIGENCE

- Lower power consumption and higher performance / density
- Increasing device complexity with 3D architectures
- Growing number of new materials
- Rising costs due to increased process intensity



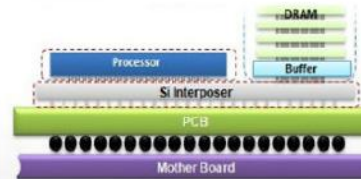
TRANSISTOR
FORMATION

ADVANCED
INTERCONNECT

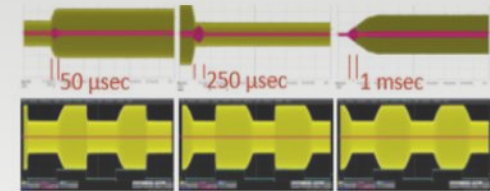


INSPECTION &
METROLOGY

ADVANCED
PACKAGING



AE DIFFERENTIATORS



- Broadest portfolio of precision power control technologies
- Trusted partner for the toughest requirements
- Deep knowledge across all key processes and devices
- Flexible configuration for low Cost of Ownership

Semi Revenue Grew at a CAGR of 17% from 2014 to 2018E*

Advanced Materials: Growing List of Applications

KEY INDUSTRY DRIVERS



FLAT PANEL
DISPLAY

- Increased adoption of advanced materials in new applications
- Transition from wet coating to dry sputtering for precision
- Growing substrate sizes require increased film uniformity



CONSUMER
ELECTRONICS

INDUSTRIAL
COATINGS
(SOLAR)

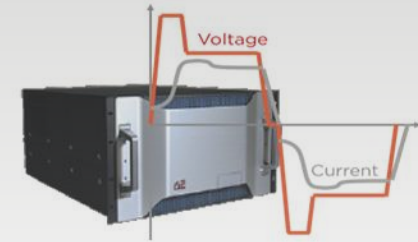


INDUSTRIAL
COATINGS
(AUTO)

ARCHITECTURAL
GLASS



AE DIFFERENTIATORS



- Deep application knowledge across many advanced materials
- Optimized for low Cost of Ownership enabling new process
- Advanced power architecture for control, speed, and efficiency

Robust design win pipeline fuels record Advanced Materials revenues in 2018

Applied Power: Entering New Growing Markets

KEY INDUSTRY DRIVERS

ENVIRONMENTAL



FOOD SAFETY



CLINICAL RESEARCH



METALLURGY



GEOSCIENCE



PHARMA

- Point of Use applications require small form factors
- Increased complex power requirements
- Need for metrology, controls and measurement



MEDICAL & HEALTHCARE



ANALYTICAL INSTRUMENTS



GENOMICS RESEARCH

ROBOTICS



AE DIFFERENTIATORS



- Compact architectures enhance system integration
- High configurability in power delivery for optimization
- Unique technologies in temp. controls, electrostatic metrology & gas analytics

Added 120 Platforms of Applied Power products through strategic acquisitions

Service: Expanding Base & Consistent Growth

KEY INDUSTRY DRIVERS



- Demanding minimum variability for high yield
- Reuse of existing/old capacity to maximize Cost of Ownership
- Dissatisfied with locally-based, quick-turn service vendors



AE DIFFERENTIATORS



- Best in class lifecycle services with OEM parts and full testing
- Flexible service programs to fit unique customer needs
- Global footprint with world class repair centers

Growing installed base and share gains enable revenue to grow at a CAGR of 19% from 2014 to 2018E*

Driving Strong Shareholder Returns



(1) Please note that hypothetical scenarios regarding revenue growth, EBITDA, EPS, 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.

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

(3) Cumulative Cash Generation refers to total projected Cash Flow from Operation from 2018 to 2020

Innovation Driving Growth



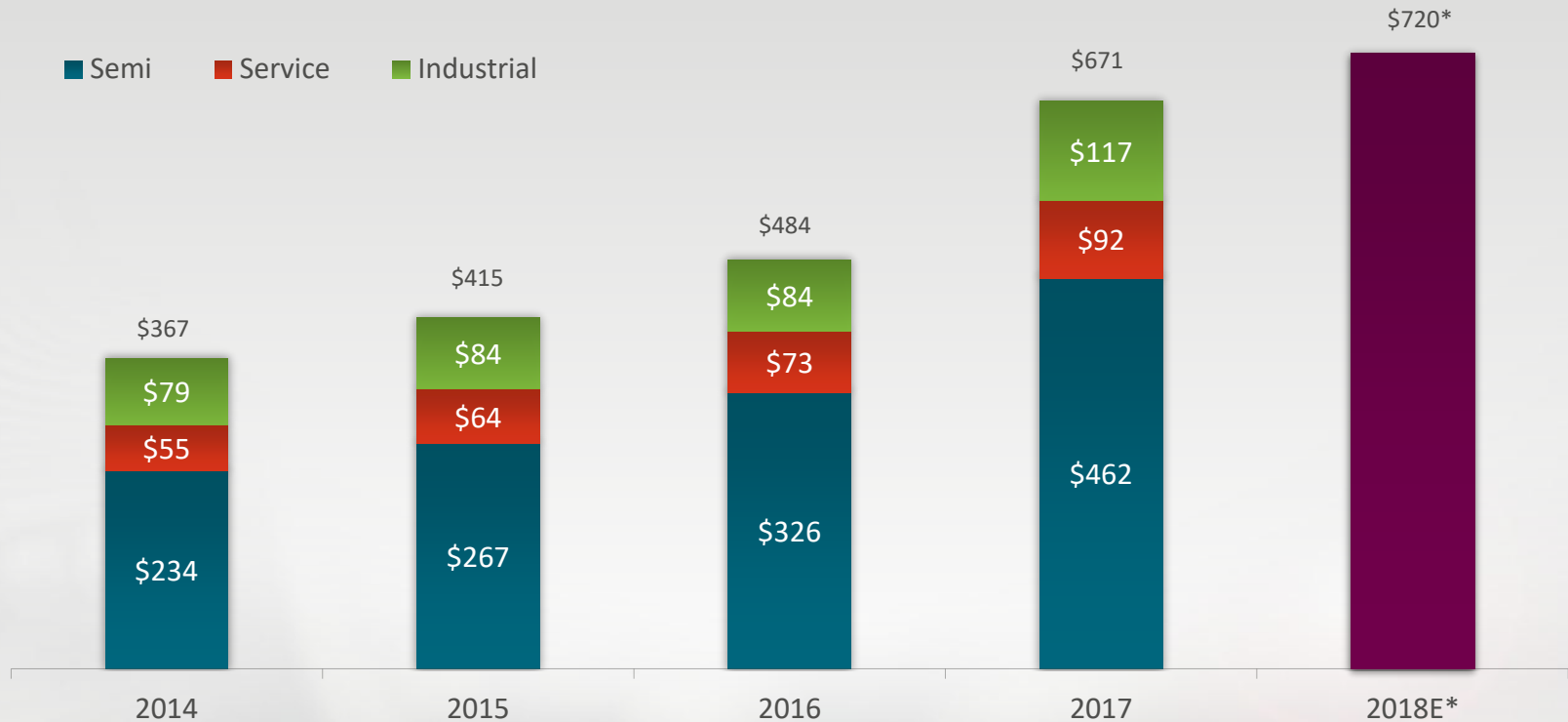
Financials

Grew Revenues at 18% CAGR⁽¹⁾

REVENUE GROWTH BY MARKET

\$ IN MILLIONS

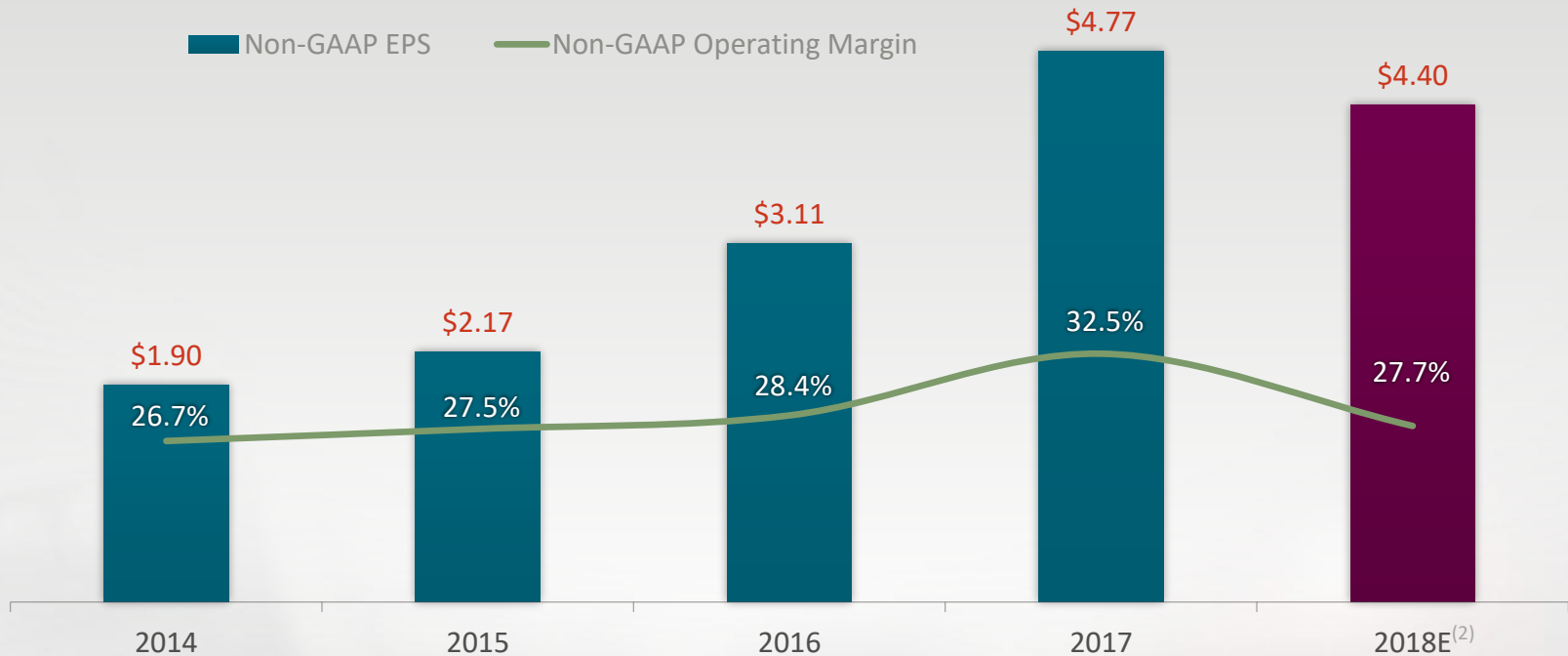
■ Semi ■ Service ■ Industrial



* 2018E represents Street's consensus estimate. AE management does not adopt or endorse any consensus view.

Delivering Top Tier Financial Results

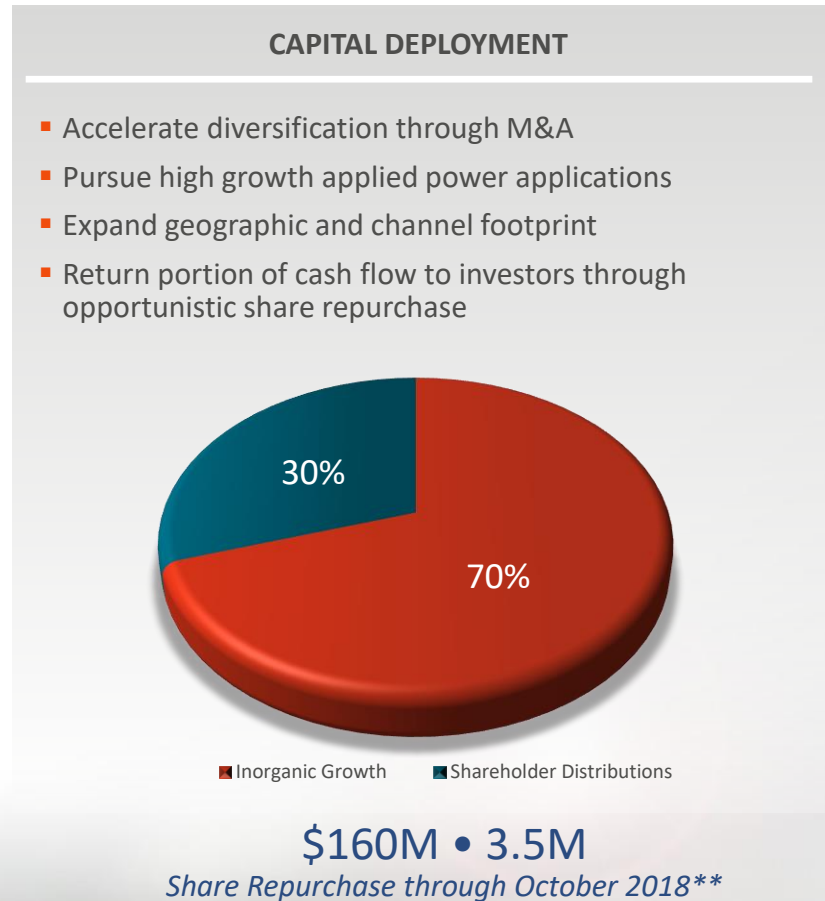
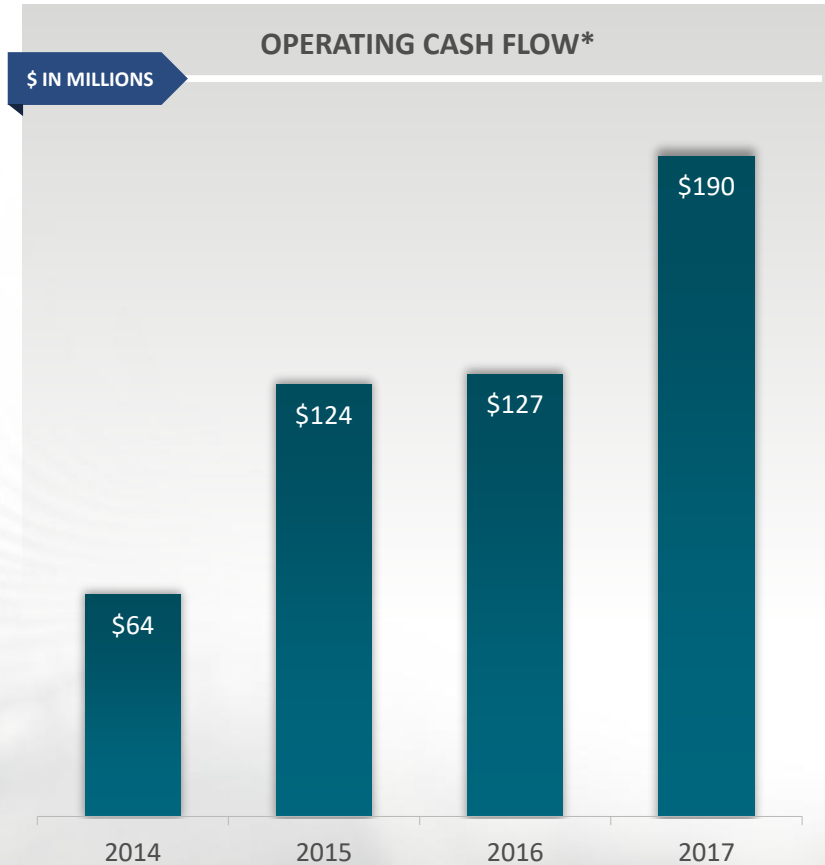
NON-GAAP EPS & NON-GAAP OPERATING MARGIN FROM CONTINUING OPERATIONS ⁽¹⁾



1) Refer to the non-GAAP reconciliation on slide for additional detail.

2) 2018E represents Street's consensus estimate. AE management does not adopt or endorse any consensus view.

Strong Balance Sheet and Cash Flow Fuel Growth

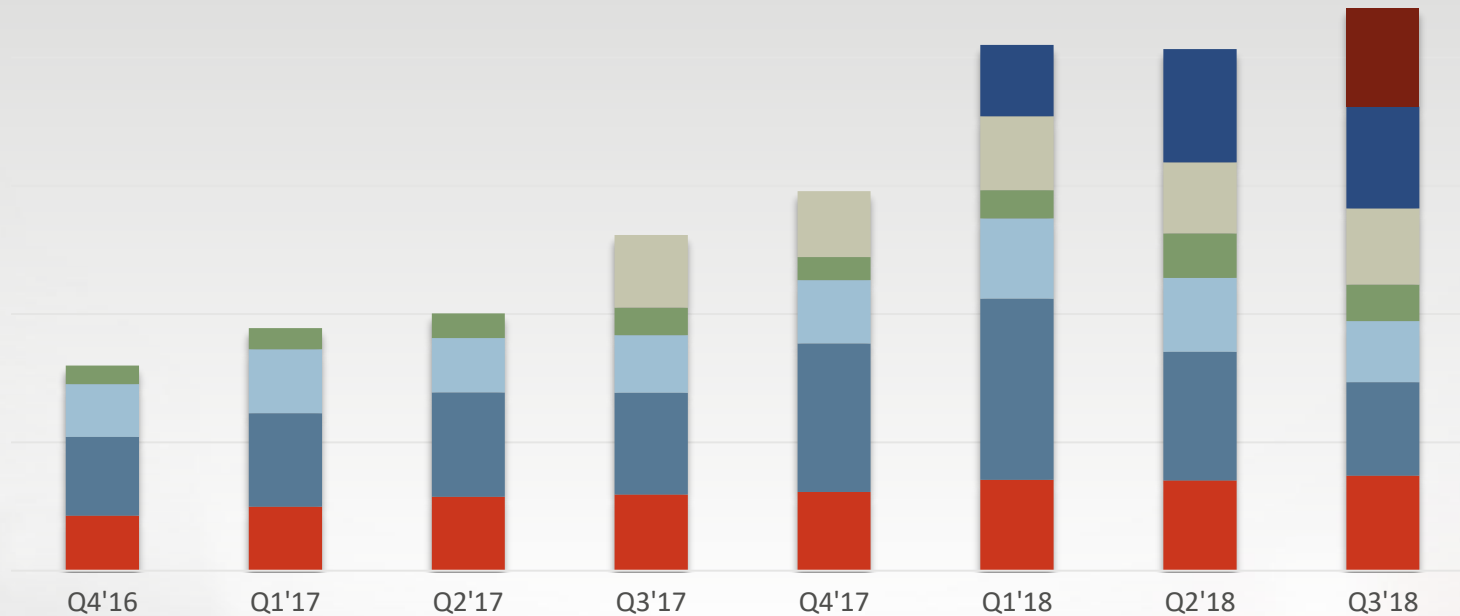


* Net cash provided by operating activities from continuing operations

** Share repurchase from initial program inception in 2015 through October 30, 2018

Proven Acquisition Strategy

QUARTERLY PERFORMANCE OF AE ACQUISITIONS



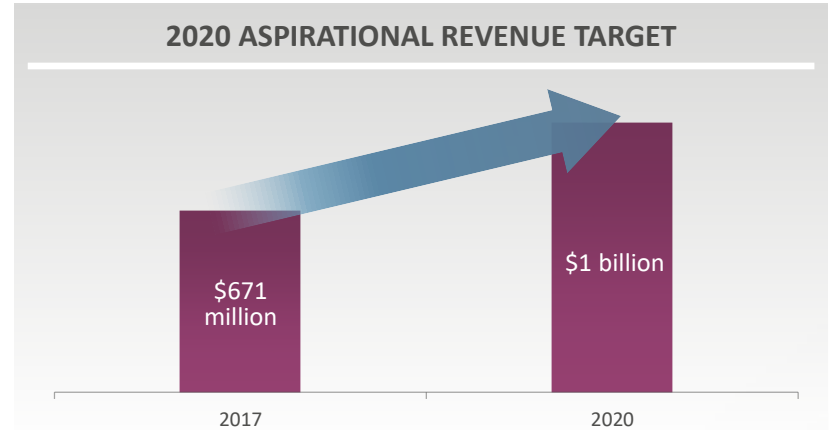
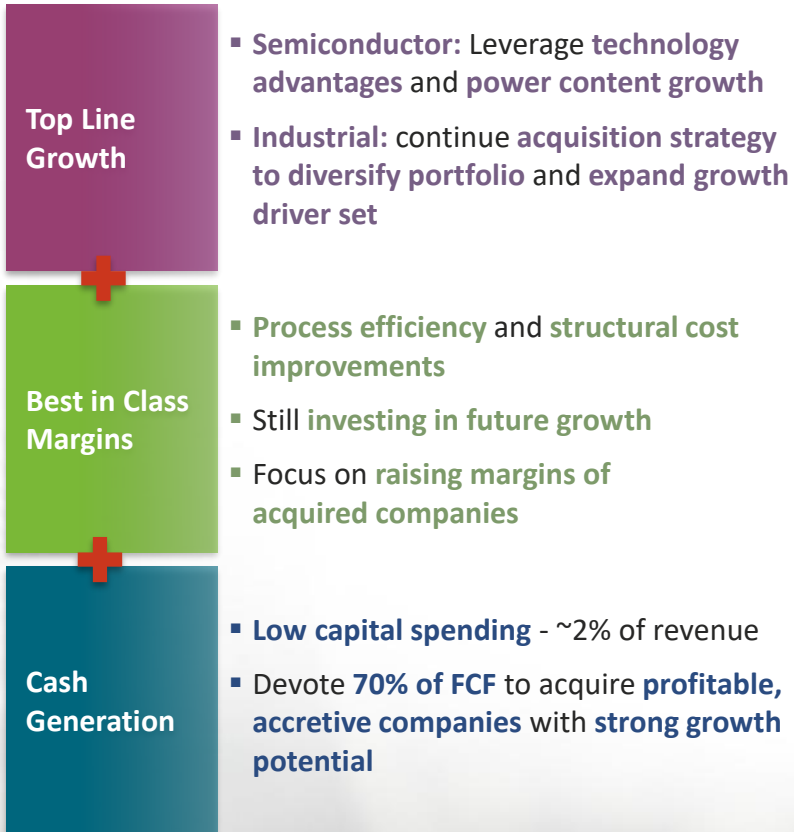
ACCELERATED GROWTH: Combined quarterly revenue increased by >250% in 7 quarters*

EFFICIENT: Deployed ~\$200M adding >\$150M of annualized revenue*



*Based on pro forma Q3 2018 results with a full quarter of LumaSense revenue

Strong Levers to Drive Top and Bottom Line Growth



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Enabling the Future



SMARTPHONES



CONSUMER ELECTRONICS



AUTOMOBILE



DISPLAY



MEDICAL DEVICES & TECHNOLOGY



*AE's Critical Power Technology
Enabling Everyday Products*

Thank You



Q4 2018 Guidance⁽¹⁾

	Q4 2018		
Revenue	\$150M	-	\$160M
GAAP operating margins from continuing operations	12.8%	-	17.5%
GAAP EPS from continuing operations	\$0.48	-	\$0.66
Non-GAAP ⁽²⁾ operating margins from continuing operations	20.0%	-	22.0%
Non-GAAP ⁽²⁾ EPS from continuing operations	\$0.70	-	\$0.80

(1) Estimates as of Q3'18 earnings conference call. The company assumes no obligation to update guidance.

(2) Q4'18 non-GAAP measures exclude the impact of stock based compensation, amortization of intangibles, restructuring costs, and other significant non-recurring items.

Non-GAAP Measures

This presentation includes GAAP and non-GAAP income and per-share earnings data and other GAAP and non-GAAP financial information. 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 non-recurring items such as acquisition-related costs and restructuring expenses. Additionally, the third quarter non-GAAP results exclude estimated income tax expense associated with U.S. tax reform. The non-GAAP measures included in this presentation 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.

Reconciliation of Non-GAAP Measures

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

	Three Months Ended			Nine Months Ended	
	September 30,		June 30,	September 30,	
	2018	2017	2018	2018	2017
Gross profit from continuing operations, as reported	\$ 85,539	\$ 92,234	\$ 101,235	\$ 290,419	\$ 258,206
Adjustments to gross profit:					
Stock-based compensation	76	334	149	576	1,048
Facility transition and relocation costs	725	—	249	974	—
Acquisition-related costs	158	—	—	158	—
Non-GAAP gross profit from continuing operations	86,498	92,568	101,633	292,127	259,254
Operating expenses from continuing operations, as reported	45,677	40,561	45,217	138,436	115,498
Adjustments:					
Amortization of intangible assets	(1,437)	(1,240)	(1,264)	(3,958)	(3,176)
Stock-based compensation	(948)	(3,119)	(1,794)	(6,885)	(9,659)
Acquisition-related costs	(705)	—	(255)	(1,310)	(150)
Facility expansion and relocation costs	(29)	—	(13)	(518)	—
Restructuring charges	(403)	—	—	(403)	—
Non-GAAP operating expenses from continuing operations	42,155	36,202	41,891	125,362	102,513
Non-GAAP operating income from continuing operations	\$ 44,343	\$ 56,366	\$ 59,742	\$ 166,765	\$ 156,741

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

	Three Months Ended			Nine Months Ended	
	September 30,		June 30,	September 30,	
	2018	2017	2018	2018	2017
Gross profit from continuing operations, as reported	49.4 %	52.2 %	51.6 %	51.4 %	52.5 %
Adjustments to gross profit:					
Stock-based compensation	—	0.2	0.1	0.1	0.2
Facility transition and relocation costs	0.5	—	0.1	0.2	—
Acquisition-related costs	0.1	—	—	—	—
Non-GAAP gross profit from continuing operations	50.0	52.4	51.8	51.7	52.7
Operating expenses from continuing operations, as reported	26.4	23.0	23.1	24.5	23.5
Adjustments:					
Amortization of intangible assets	(0.8)	(0.7)	(0.6)	(0.7)	(0.6)
Stock-based compensation	(0.6)	(1.8)	(1.1)	(1.2)	(2.1)
Acquisition-related costs	(0.4)	—	(0.1)	(0.2)	—
Facility expansion and relocation costs	—	—	—	(0.1)	—
Restructuring charges	(0.2)	—	—	(0.1)	—
Non-GAAP operating expenses from continuing operations	24.4	20.5	21.3	22.2	20.8
Non-GAAP operating income from continuing operations	25.6 %	31.9 %	30.5 %	29.5 %	31.9 %

Reconciliation of Non-GAAP Measures (Cont.)

Reconciliation of Non-GAAP measure - income excluding certain items

	Three Months Ended			Nine Months Ended	
	September 30,		June 30,	September 30,	
	2018	2017	2018	2018	2017
Income from continuing operations, less noncontrolling interest, net of income taxes	\$ 35,150	\$ 83,794	\$ 46,356	\$ 127,845	\$ 165,108
Adjustments:					
Amortization of intangible assets	1,437	1,240	1,264	3,958	3,176
Stock-based compensation	1,024	3,453	1,943	7,461	10,707
Acquisition-related costs	863	—	255	1,468	150
Facility expansion and relocation costs	754	—	262	1,492	—
Restructuring charges	403	—	—	403	—
Nonrecurring tax (benefit) expense associated with inverter business	—	(40,194)	—	—	(40,194)
Loss on foreign exchange hedge	—	—	—	—	3,489
Incremental expense associated with start-up of the Asia regional headquarters	—	1,133	—	—	1,133
Tax Cuts and Jobs Act Impact	2,398	—	—	4,251	—
Tax effect of Non-GAAP adjustments	(843)	(1,426)	(704)	(2,890)	(4,451)
Non-GAAP income from continuing operations, net of income taxes	\$ 41,186	\$ 48,000	\$ 49,376	\$ 143,988	\$ 139,118

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

	Three Months Ended			Nine Months Ended	
	September 30,		June 30,	September 30,	
	2018	2017	2018	2018	2017
Diluted earnings per share from continuing operations, as reported	\$ 0.90	\$ 2.09	\$ 1.17	\$ 3.23	\$ 4.11
Add back:					
per share impact of Non-GAAP adjustments, net of tax	0.15	(0.90)	0.08	0.41	(0.65)
Non-GAAP per share earnings from continuing operations	\$ 1.05	\$ 1.19	\$ 1.25	\$ 3.64	\$ 3.46

Reconciliation of Non-GAAP Measures (Cont.)

	Twelve months ended December 31,			
	2014	2015	2016	2017
Revenue	\$ 367.3	\$ 414.8	\$ 483.7	\$ 671.0
GAAP Operating Income	\$ 86.1	\$ 106.7	\$ 126.9	\$ 200.8
Add back:				
Restructuring Charges	1.5	0.2	-	-
Acquisition-related Costs	0.7	-	-	0.2
Stock-based Compensation	3.7	2.8	6.3	12.5
Amortization of Intangible Assets	5.0	4.4	4.2	4.4
Non-recurring Executive Severance	0.9	-	-	-
Non-GAAP Operating Income	\$ 97.9	\$ 114.0	\$ 137.4	\$ 217.8
<i>Non-GAAP Operating Margin % of Revenue</i>	<i>26.7%</i>	<i>27.5%</i>	<i>28.4%</i>	<i>32.5%</i>
	Twelve months ended December 31,			
	2014	2015	2016	2017
GAAP Income from Continuing Operations	\$ 69.5	\$ 83.5	\$ 116.9	\$ 136.1
Add back:				
Restructuring Charges	1.5	0.2	-	-
Acquisition-related Costs	0.7	-	-	0.2
Stock-based Compensation	3.7	2.8	6.3	12.5
Amortization of Intangible Assets	5.0	4.4	4.2	4.4
Loss on Foreign Exchange Hedge	-	-	-	3.5
Non-recurring Executive Severance	0.9	-	-	-
Incremental Expense Associated with Start-up of the Asia Regional Headquarters	-	-	-	1.1
Nonrecurring Tax (Benefit) Expense Associated with Inverter Business	-	-	-	(33.8)
Tax Cuts and Jobs Act Impact	-	-	-	72.9
Tax Effect of Non-GAAP Adjustments	(3.2)	(1.6)	(2.9)	(2.9)
Non-GAAP Operating Income	\$ 78.1	\$ 89.3	\$ 124.6	\$ 191.5
Share Outstanding (Millions)	41.0	41.1	40.0	40.2
Non-GAAP EPS	\$ 1.90	\$ 2.17	\$ 3.11	\$ 4.77

NOTE: 2015, 2016, and 2017 as presented in the 10-K for December, 31 2017.

