

INNOVATION DRIVING GROWTH



Winter 2018

Safe Harbor

The company's guidance with respect to anticipated financial results for the first quarter ending March 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 cyclicality 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 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.

Non-GAAP Measures

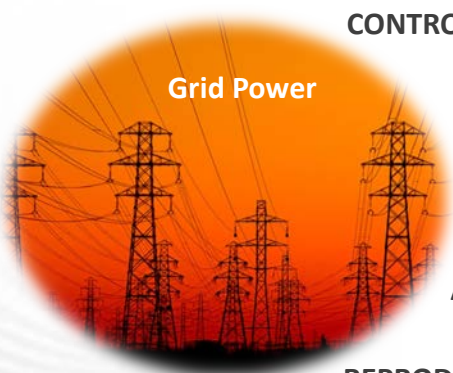
This presentation includes GAAP and non-GAAP income and per-share earnings data and other GAAP and non-GAAP financial information. Advanced Energy's non-GAAP measures exclude the impact of non-cash related charges such as stock based compensation and amortization of intangible assets, as well as non-recurring items such as acquisition-related costs. Additionally, the fourth quarter and full year 2017 results exclude estimated income tax expense associated with U.S. tax reform. For the first quarter ending March 31, 2018 guidance, the company expects stock based compensation of \$2.7 million and amortization of intangibles of \$1.5 million. The non-GAAP measures included in this release 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.

Power Technology Enables Everyday Products



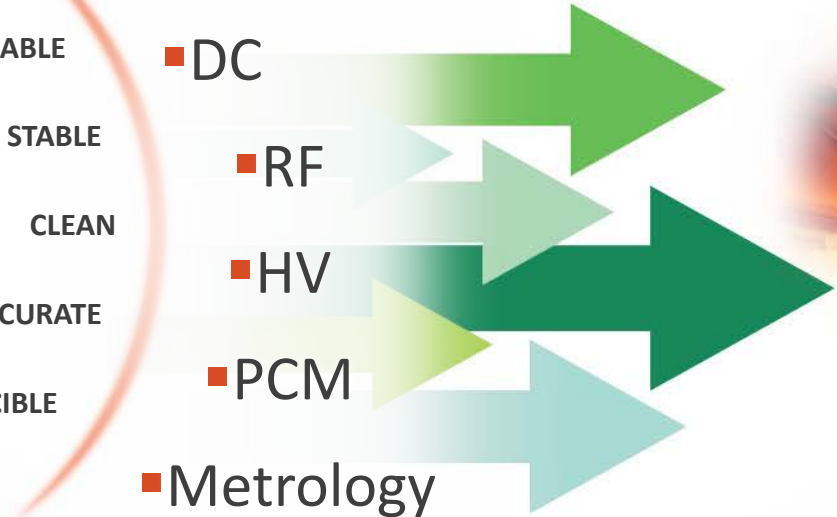
*“Breakthrough Power Technology
for Breakthrough Applications”*

Precision Power Solutions Enable Critical Applications



CONTROLLABLE
STABLE
CLEAN
ACCURATE
REPRODUCIBLE

- AC
- DC
- RF
- HV
- PCM
- Metrology
- Configurable LV



Critical Position in the Value Chain

SUB-SYSTEM
MANUFACTURERS

EQUIPMENT
MANUFACTURERS

SEMICONDUCTORS

CONSUMER
ELECTRONIC PRODUCTS

MARKET
LEADERS



PRODUCTS



Products & Applications

PROCESS POWER PRODUCTS

SPECIALTY POWER PRODUCTS

Semiconductor

- Thin Film Deposition (PECVD,PVD)
- Thin Film Etch (RIE, ALE)
- Radicals Based Processes / Soft Etch
- Abatement

- Transistor Formation (Ion Implantation)
- Electrostatic wafer clamping
- Metrology / Inspection / E-Beam
- Electrical heating (Epi, ALD, RTP)
- Non-contact temp. measurement

Industrial

- Decorative & Hard Coatings
- Optical Films
- Architectural Glass
- Flat Panel Display
- Solar PV cell production

- Medical / Life Sciences
- Aerospace / Defense
- Analytical Instrumentation
- Electrical heating and control
- Non-contact temp. measurement

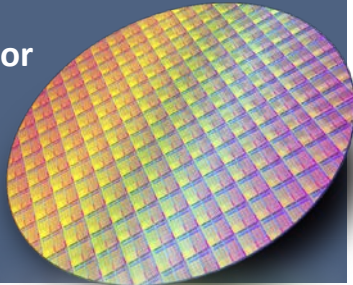
Mega Trends Driving Growth

General Power Products & Solutions



- Analytics, information, advanced controls , IoT, Industry 4.0
- \$/W, Green power
- Migration from discrete boxes to configurable systems

Semiconductor Processes



- Consumer products (mobility, connectivity, UX)
- New user applications technologies (AR/VR, AI, IoT, Robotics)
- Explosive demand for Memory (3DNAND) and advanced Logic
- New IC architectures, processes and materials
- China expansion

Industrial Thin Films Processing



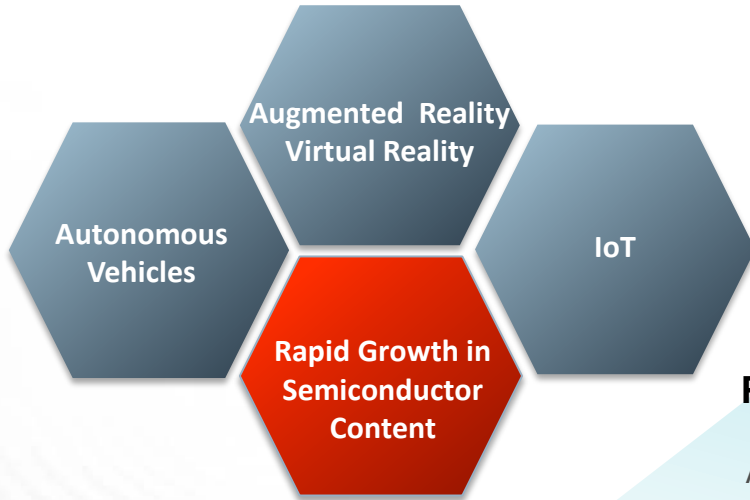
- Accelerated adoption of advanced FPD products (4K/8K, OLED)
- Lower cost of vacuum/plasma based thin films processing
- Engineered precision materials

Specialty Power Applications



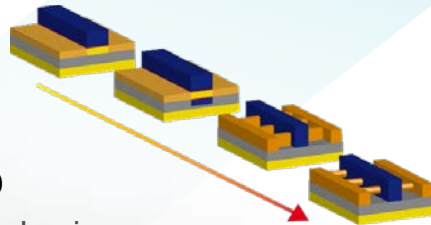
- Precision power solutions in environmental, security, manufacturing, medical and Life Science markets
- Integrated and connected solutions (systems)

Semi Market Drivers



PROCESS DEMAND

High Aspect Ratio Etch
Atomic Layer Deposition
Atomic Layer Etch
Plasma-based Clean

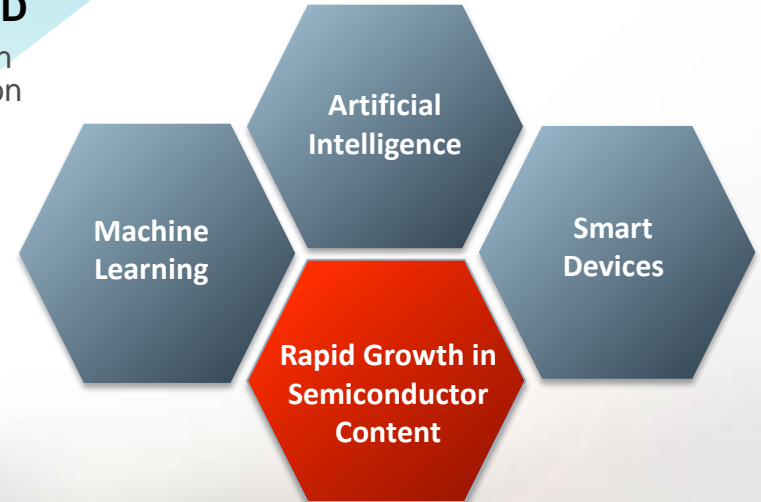
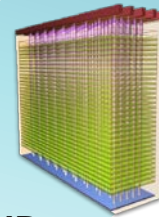


DEVICE DEMAND

3D-NAND / 1x DRAM / <7nm Logic
New device architectures
Self-aligned Multi Patterning

PROCESS POWER DEMAND

Higher Powers and Multiple Frequencies
Advanced Power/Pulse Controls
New Remote Plasma Sources
Increased Power Content



Enabling Technologies

Conductor
& Dielectric Etch

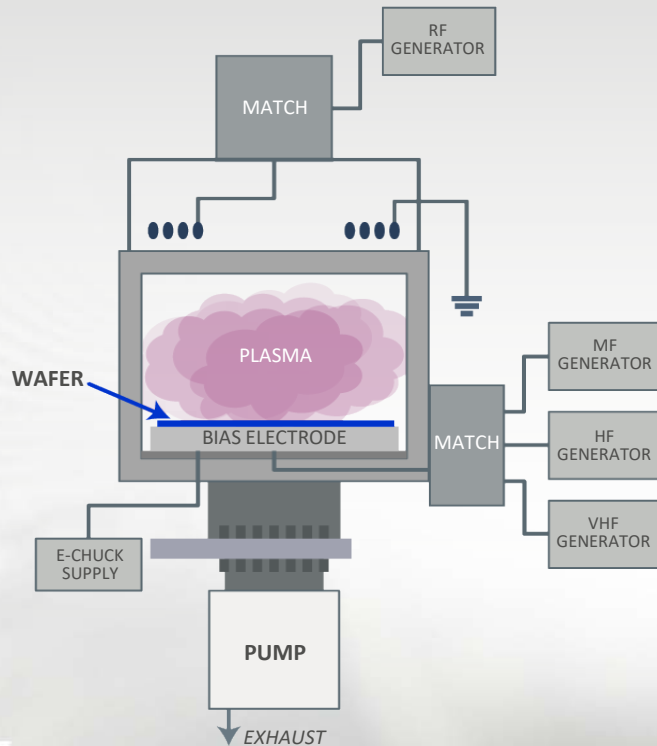
Plasma
Enhanced CVD

Plasma
Enhanced ALD

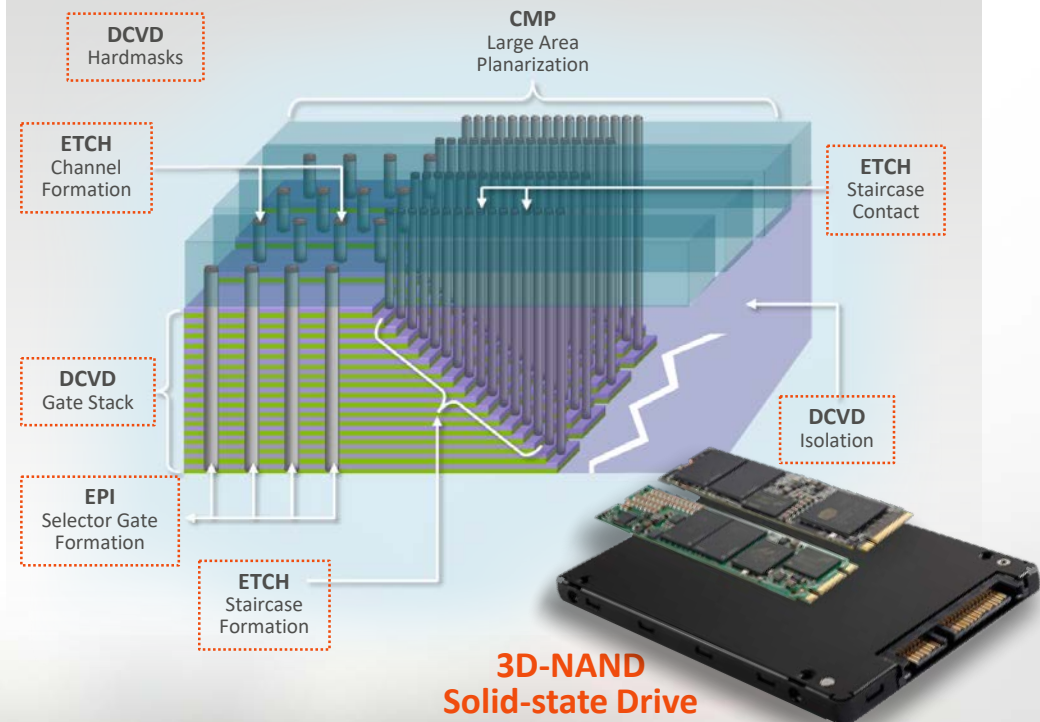
Electro-Chemical
Deposition

Epitaxial
Deposition

ADVANCED POWER DELIVERY / CONTROL



3D-NAND DEVICE



Thin Film Industrial Market Drivers



KEY INDUSTRY DRIVERS

Processing highly engineered materials

Precision uniformity across increasingly large substrates

Industry 4.0

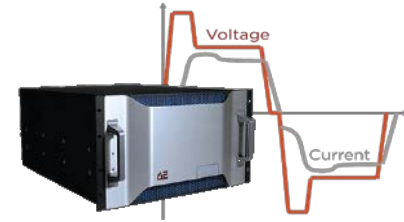
CONSUMER ELECTRONICS



INDUSTRIAL COATINGS



ARCHITECTURAL GLASS



AE TECHNOLOGY ENABLERS

Dynamic waveform control to enable highly engineered materials

Advanced power architectures for speed, efficiency

Flexibility in system configurations for optimized Cost of Ownership

Industry 4.0 ready solutions

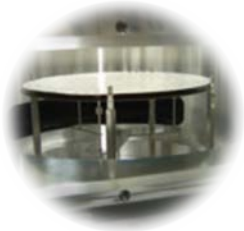
Thin Films - Industrial Applications

Process power used for thin film coating applications

- Target markets
 - Flat panel displays
 - Architectural glass
 - PV solar cells
 - Industrial coating (decorative, optical, functional)
- Large and diverse customer base
 - Applications technology leadership
 - Multiple sales channels
 - Global footprint
 - Global OEMs serving multiple applications



Specialty Power Market Drivers



Semiconductor
Technology Node <7nm



Automotive & Aerospace
Driving Use of Al Alloys



Tighter Temp Requirements
for Critical Alloy Casting



Rapid Expansion of
Bio-technology



Safety & Security



IoT, Big Data,
Sensing & Controls
Industry 4.0

- Key industry drivers
 - High resolution for analytical equipment
 - High sensitivity and precision analysis for safety and security
 - Green technology and high efficiency
- AE technology enablers
 - Extremely low ripple, noise, and drift for High Voltage
 - High power density & smaller form factor solutions
 - Highly configurable, low voltage power

Expanding Beyond Semi and Thin Film Process Power

- Pursuing high growth specialty power applications
- Accelerating diversification through M&A (i.e. Excelsys)
- Leveraging our strengths in semiconductors
- Building on our geographic footprint
- Investing in Industrial sales and marketing infrastructure



Global Services

Clear, Compelling Competitive Advantage

RELIABILITY / QUALITY



- Best in class lifecycle services - reduce variability
- Full OEM diagnostics and testing
- Original OEM parts

RESPONSIVENESS



- Flexible service programs to fit unique customer needs
- Quick turnaround times

GLOBAL FOOTPRINT

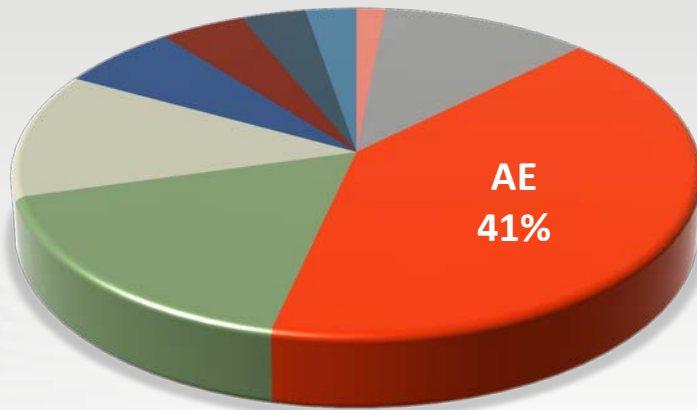


- World class repair centers around the globe
- Uniformly trained staff
- Consistent repair quality in all locations

Share Leader in Served Markets

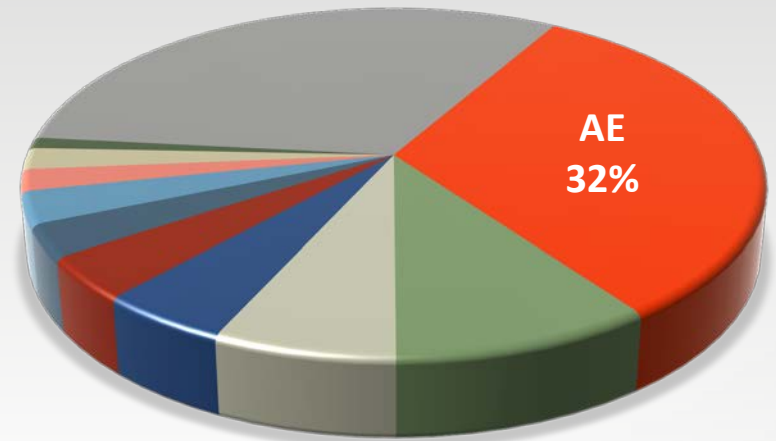
2016 VLSI PROCESS POWER
C-SUBS SHARE SEMI/FPD/DS/PV ⁽¹⁾

SAM = \$0.7B



2016 AE TOTAL (Process & Specialty Power)
SHARE ESTIMATE ⁽¹⁾

SAM = \$1.3B



- AE is #1 in Process Power for C-Subs, #1 in total (new) served markets
 - C-SUBS is mature/consolidated, new markets are fragmented and open for new players
- AE wins due to leading product performance, high product quality, localized R&D, operations speed/responsiveness, and Global Service in key regions

Revenue Growth Vision



**NEW
APPLICATIONS**

Industrial Power

Power solutions for core and new verticals

Precision power solutions for critical applications. Medical, Life Sciences, Analytical Instrumentation, Environmental, Custom Power, Aerospace, Defense

**ADJACENT
APPLICATIONS**

Industrial Thin Films

Geographic expansion, new verticals, integrated solutions

PV Solar – Deposition, Glass coating, FPD - Deposition/Etch, Industrial/Hard Coating, Optical, Automotive

Semi

Share gain – added content

RF, DC, RPS, Deposition, Etch, Clean, Pyrometry, Gas abatement, Integrated products

**CORE
APPLICATIONS**



Innovation Accelerates SAM and Share Growth

Recently Introduced Technology

- Solid-State RF Matching
 - High speed RF tuning
 - Improved reliability / repeatability
- Plasma Source for radical processes
 - Unique control of radical species
 - Low film/device damage and stress
 - Surface modification and treatment
- Precision generation of Ion Energy Distributions (eV Source™ technology)
 - Direct control at reduced system complexity

Enabling

- Faster process times (ALD, ALE)
- Improved yields
- Lower cost of ownership
- Customized (new) process chemistries
- Advanced materials development
- Precision surface chemistry
- Critical control for advanced device architectures
- Precision anisotropic etch performance

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.

INNOVATION DRIVING GROWTH

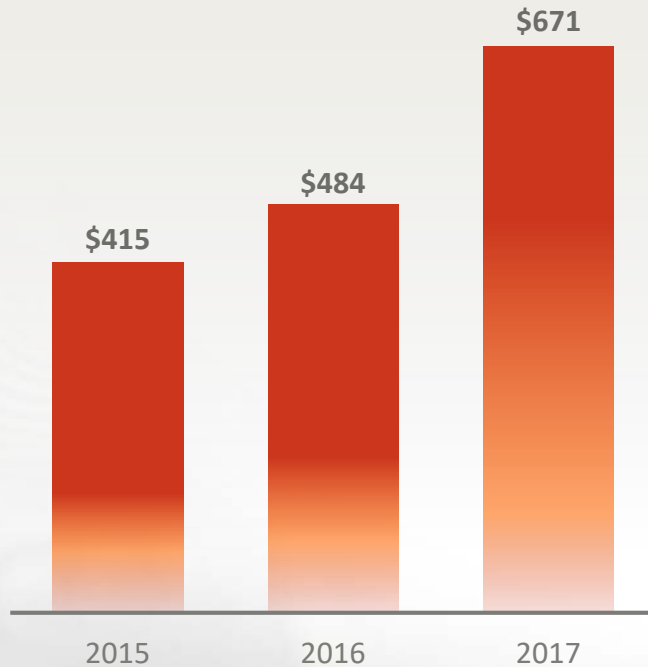


Financials

INNOVATION DRIVING GROWTH

REVENUE GROWTH

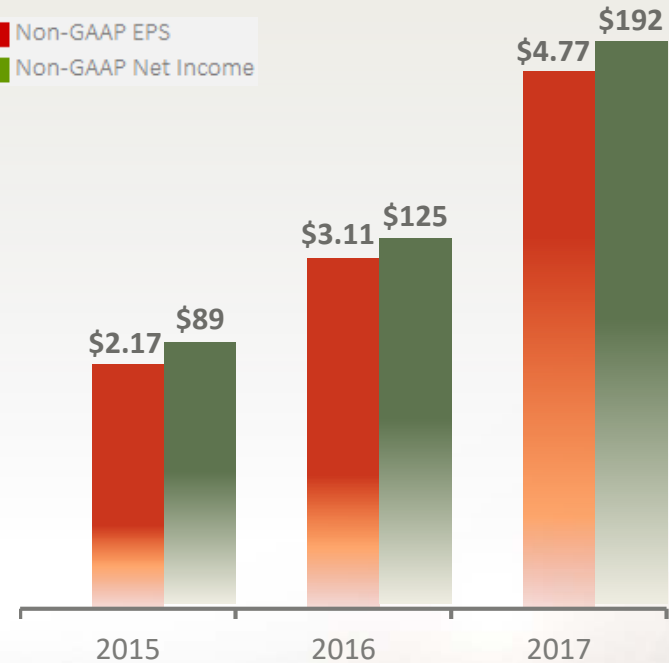
\$ IN MILLIONS



Non-GAAP EPS⁽¹⁾ and Non-GAAP⁽¹⁾ Net Income Growth from Continuing Operations

\$ IN MILLIONS, EXCEPT EPS

■ Non-GAAP EPS
■ Non-GAAP Net Income



1) Refer to the non-GAAP reconciliation on slide 25 and 26 for additional detail.

Q1 2018 Guidance⁽¹⁾

	Q1 2018		
Revenue	\$183M	-	\$193M
GAAP operating margins from continuing operations	30.0%	-	32.0%
GAAP EPS from continuing operations	\$1.19	-	\$1.29
Non-GAAP ⁽²⁾ operating margins from continuing operations	32.0%	-	34.0%
Non-GAAP ⁽²⁾ EPS from continuing operations	\$1.27	-	\$1.37



1) Estimates as of Q4'17 earnings conference call. The company assumes no obligation to update guidance.
 2) Q1'18 non-GAAP measures exclude the impact of stock based compensation of \$2.7M, amortization of intangibles of \$1.5M, restructuring costs, and significant non-recurring items.

DELIVERING VALUE

The market leader - growing faster than served markets

Driving growth through innovation and technology leadership

Strong, sustainable and extendable financial model

Demonstrating accelerated progress vs. strategic plan

INNOVATION DRIVING GROWTH



Appendix

Reconciliation of Non-GAAP Measures

(\$ in Millions Except EPS)	Three Months Ended		
	Dec 31, 2017	Dec 31, 2016	Sep 30, 2017
Revenue	\$ 179.2	\$ 135.3	\$ 176.6
GAAP Operating Income	\$ 58.1	\$ 38.5	\$ 51.7
Add back:			
Stock-based Compensation	1.8	2.0	3.5
Amortization of Intangible Assets	1.2	1.0	1.2
Non-GAAP Operating Income from Continuing Operations	\$ 61.1	\$ 41.6	\$ 56.4
<i>Non-GAAP Operating Margin % of Revenue</i>	<i>34.1%</i>	<i>30.7%</i>	<i>31.9%</i>

(\$ in Millions Except EPS)	Three Months Ended		
	Dec 31, 2017	Dec 31, 2016	Sep 30, 2017
GAAP Income from Continuing Operations, Net of Taxes	\$ (29.0)	\$ 40.4	\$ 83.8
Add back:			
Stock-based Compensation	1.8	2.0	3.5
Amortization of Intangible Assets	1.2	1.0	1.2
Incremental Expense Associated with Start-up of the Asia Regional Headquarters	-	-	1.1
Nonrecurring Tax Benefit Associated with Inverter Business	6.4	-	(40.2)
Tax Cuts and Jobs Act Impact	72.9	-	-
Tax Effect of Non-GAAP Adjustments	(0.8)	(0.9)	(1.4)
Non-GAAP Income from Continuing Operations, Net of Taxes	\$ 52.4	\$ 42.6	\$ 48.0
Share Outstanding (Millions)	40.1	40.0	40.2
Non-GAAP EPS	\$ 1.31	\$ 1.06	\$ 1.19

Reconciliation of Q1 2018 Guidance⁽¹⁾

	Low End		High End
Revenues	\$183M	-	\$193M
Reconciliation of Non-GAAP⁽²⁾ operating margin			
GAAP operating margin	30%	-	32%
Stock-based compensation	1%	-	1%
Amortization of intangible assets	1%	-	1%
Non-GAAP⁽²⁾ operating margin	32%	-	34%
Reconciliation of Non-GAAP⁽²⁾ earnings per share			
GAAP earnings per share	\$1.19	-	\$1.29
Stock-based compensation	0.07	-	0.07
Amortization of intangible assets	0.04	-	0.04
Tax effects of excluded items	(0.03)		(0.03)
Non-GAAP⁽²⁾ earnings per share	\$1.27	-	\$1.37

1) Estimates as of Q4'17 earnings conference call. The company assumes no obligation to update guidance.

2) Q1'18 non-GAAP measures exclude the impact of stock based compensation of \$2.7M, amortization of intangibles of \$1.5M, restructuring costs, and significant non-recurring items.