



# GT Advanced Technologies Investor Overview

August 2011

# Forward Looking Statement

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- This presentation contains information about management's future expectations, plans and prospects of our business that constitute forward-looking statements for purposes of the safe harbor provisions under The Private Securities Litigation Reform Act of 1995.
- Please see final slide for additional information regarding these statements.



**NASDAQ: GTAT**

# GT Advanced Technologies

Primarily an Equipment Supplier

Solar

Polysilicon production equipment

PV Ingot production equipment

LED

Sapphire production equipment and substrate materials in limited quantities

Industrial

Sapphire Materials

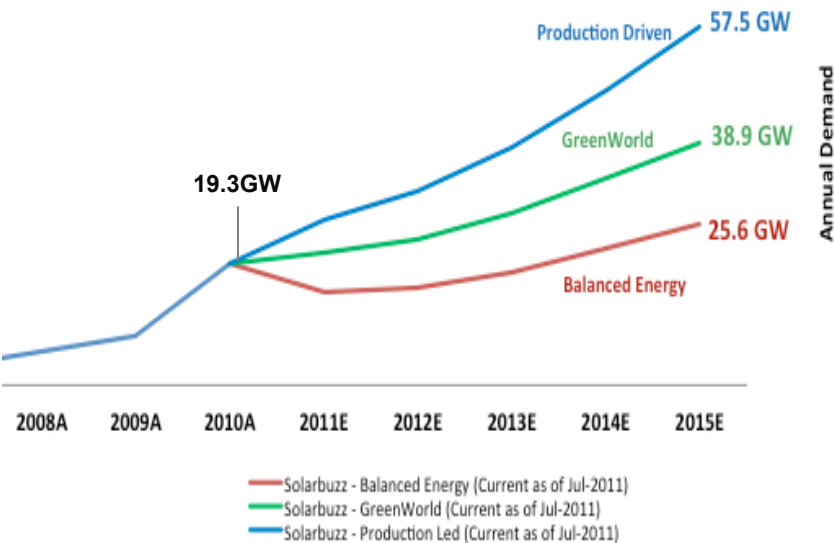
- Leader In Served Markets
- Diversified Revenue Streams
- Asia Centric Operations
- Strong Track Record of Innovation

# Growth Profile of Primary Served Markets

As a Technology Leader, GT's Opportunity To Deliver Continued Growth Is Significant

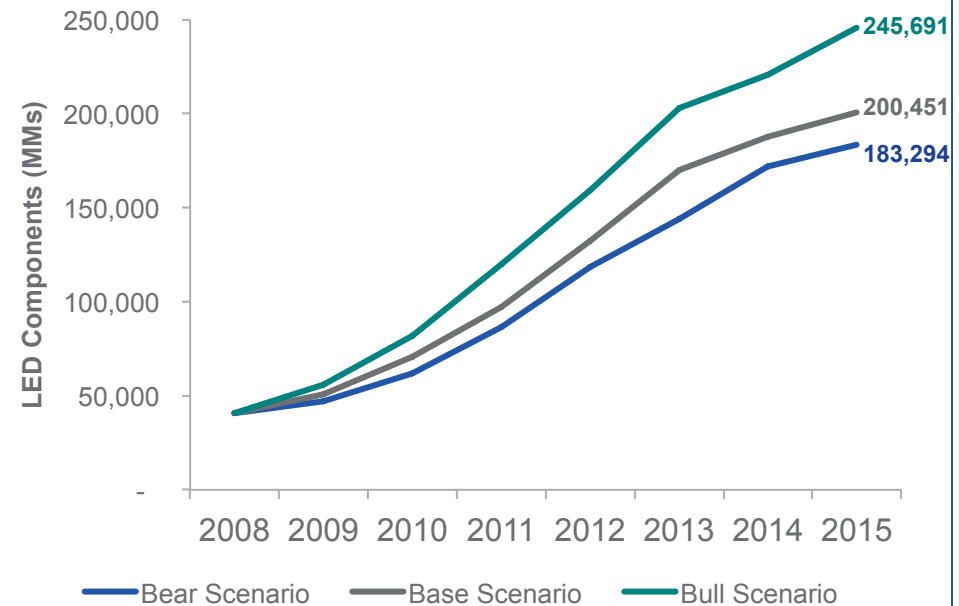
## Solar Demand

Source: Solarbuzz



## LED Demand

Source: Canaccord Genuity The Third Cycle May 2011



### Key Solar Industry Growth Drivers:

- Government Policy/Subsidies
- ★ Cost Per Watt vs. Conventional Alternatives

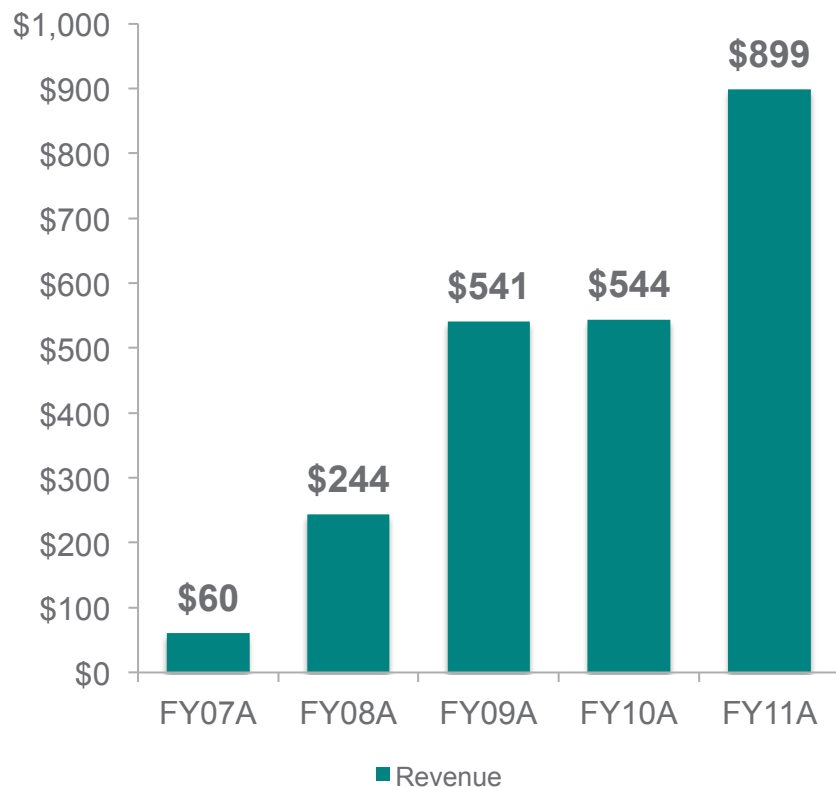
### Key LED Industry Growth Drivers:

- General Illumination Adoption
- ★ Cost vs. Alternatives

# Sustained, Strong Financial Performance

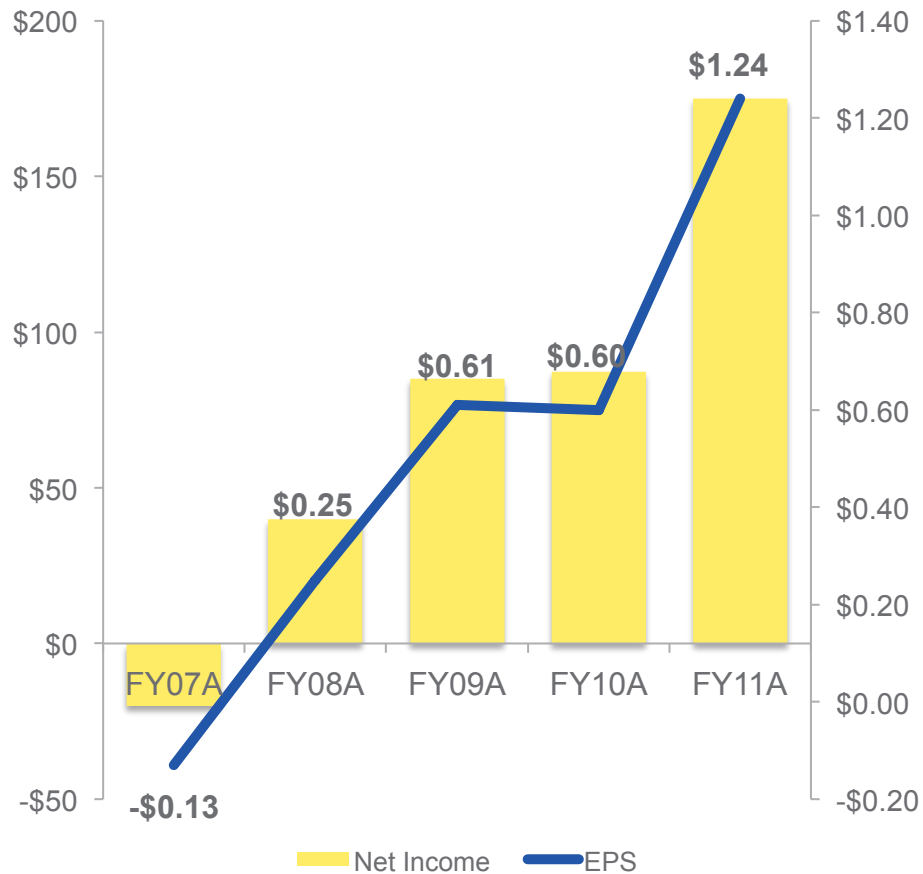
## Revenue

(\$ in millions)



## EPS-Fully Diluted, Net Income

(\$ in millions)



# LTM and Q1 FY12 Performance

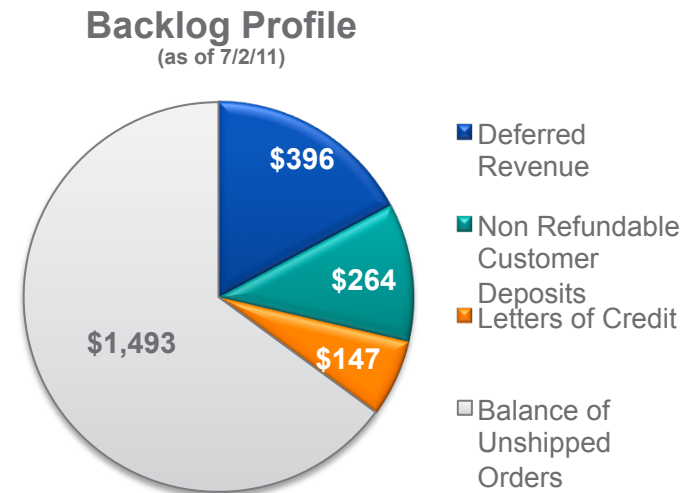
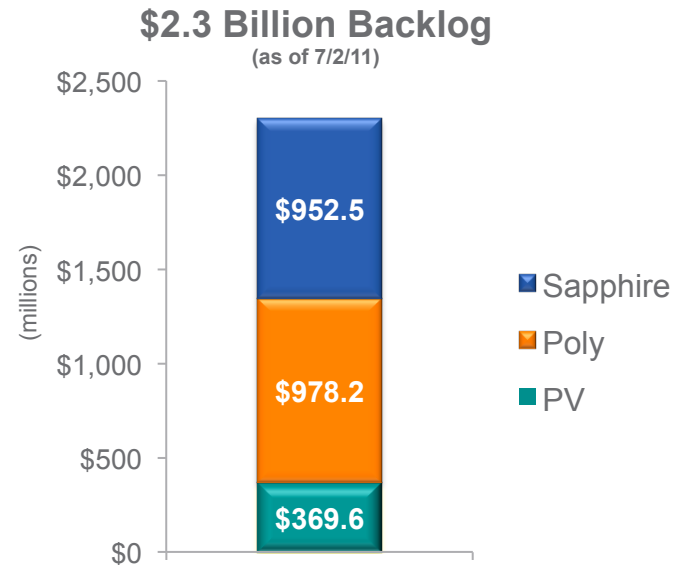
LTM Revenue <sup>(1)</sup>
<b>\$995M</b>

LTM Gross Margin <sup>(1)</sup>
<b>44.8%</b>

LTM Operating Margin <sup>(1)</sup>
<b>32.7%</b>

Revenue Per Employee <sup>(1)</sup>
<b>\$1.5M<sup>(2)</sup></b>

Q1 FY12 Results	Performance
Revenue	\$231M -- 71% y-o-y quarterly growth
Gross Margin	Record 49% GM
EPS Fully-Diluted	\$0.41 -- 273% growth from year ago quarter
Cash & Cash Equivalents	\$473 Million

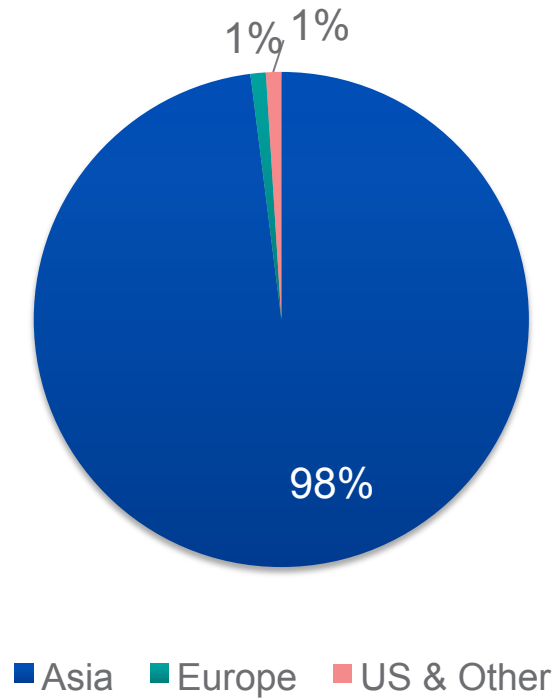


(1) Last twelve months ending July 2, 2011. Please see slides at end of presentation for reconciliation.

(2) Includes 658 full-time and contracted employees as of July 2, 2011

# Closely Aligned with Asian Cost & Quality Leaders

## Q1 Revenue By Geography

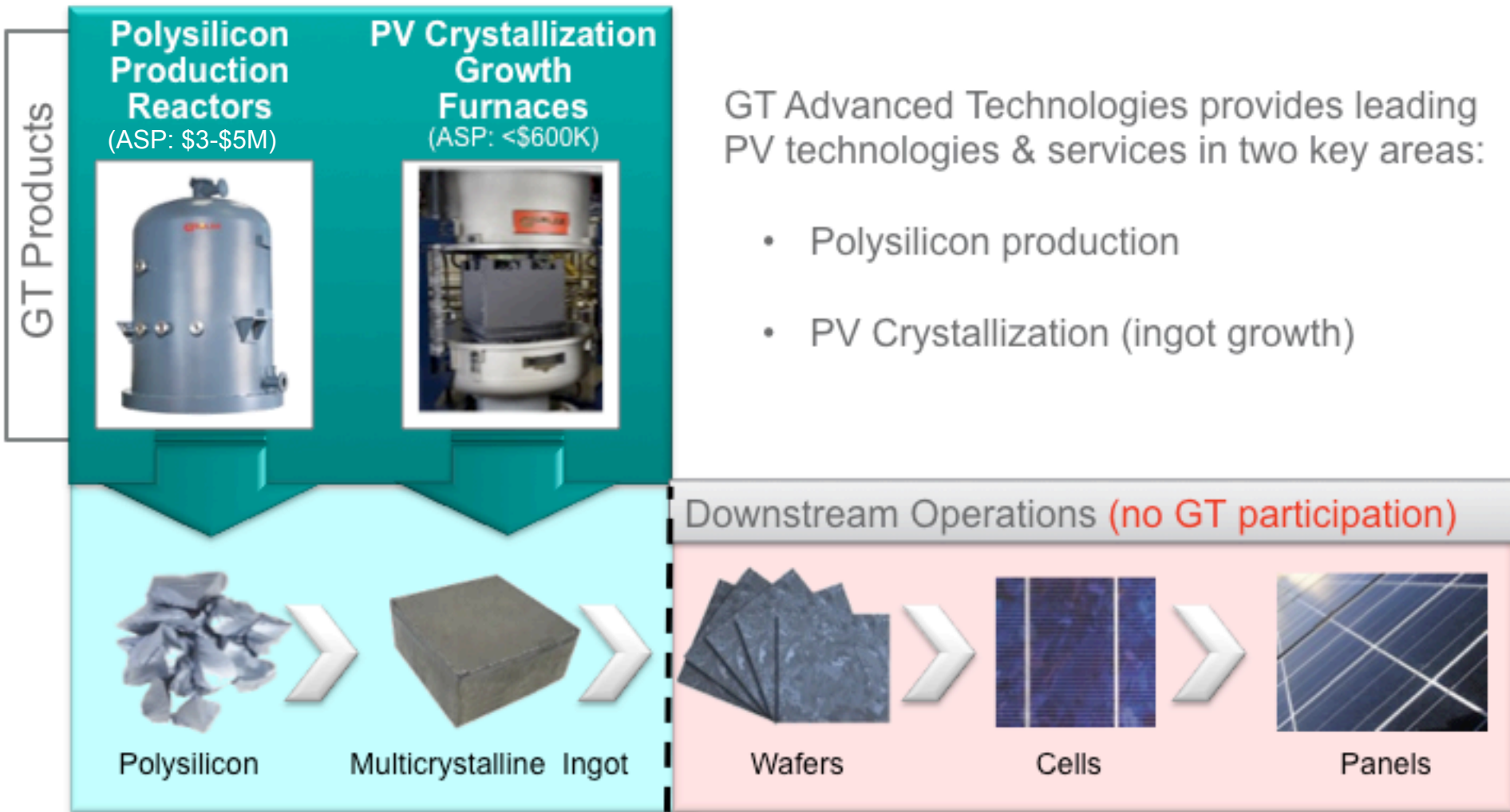


## Partial List of Customers





# Enabling Cost Reductions in the Solar Value Chain



*PV Manufacturing Value Chain*

# Polysilicon Business Overview

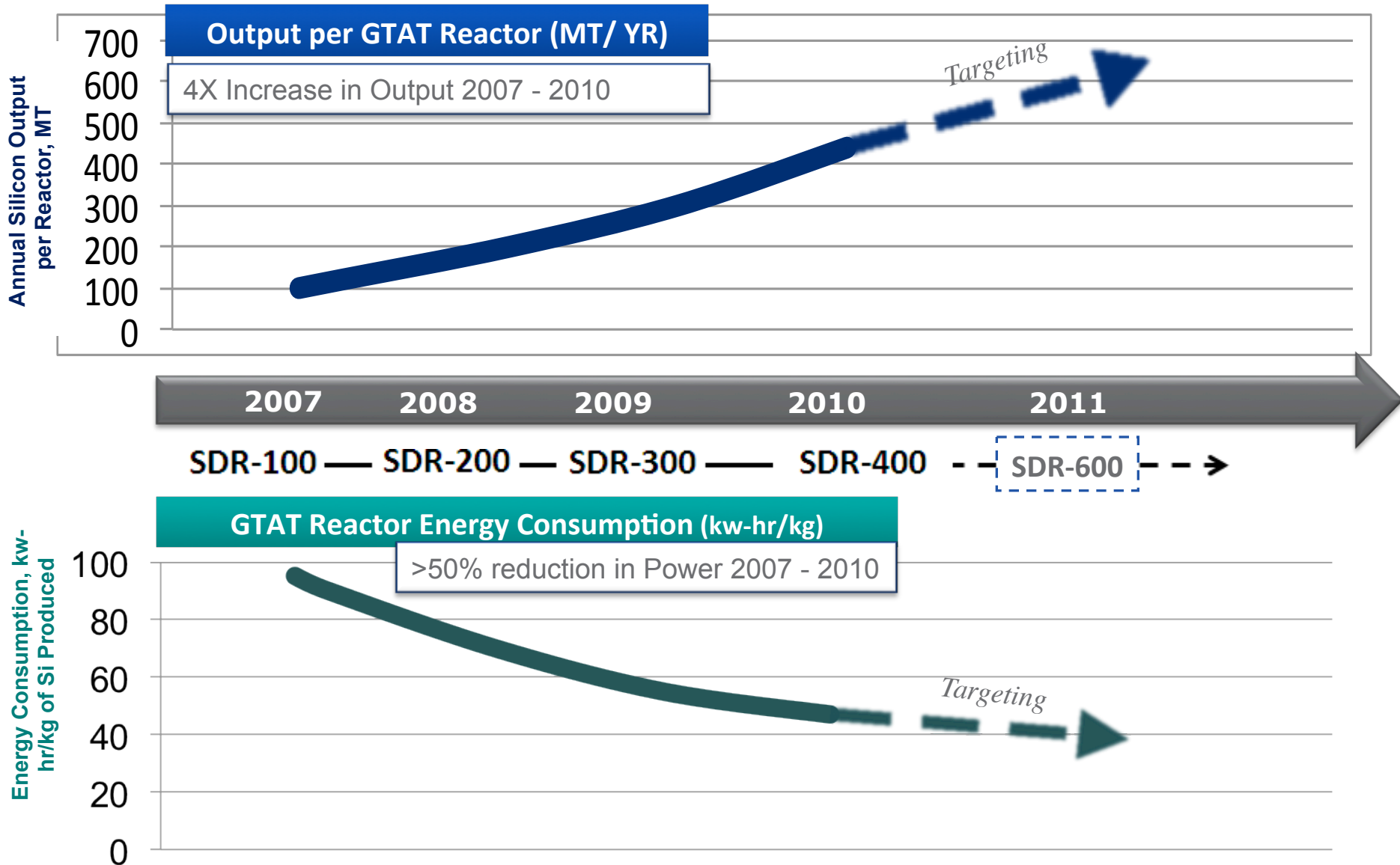


- Served primary role in establishing merchant market in 2007
- First customer, OCI, went from new entrant in 2007 to top 3 global producer in CY10
- GT's technology enables customers to produce polysilicon at all-in costs <\$25/kg\*

\$978M Polysilicon Backlog at end of Q1 FY12

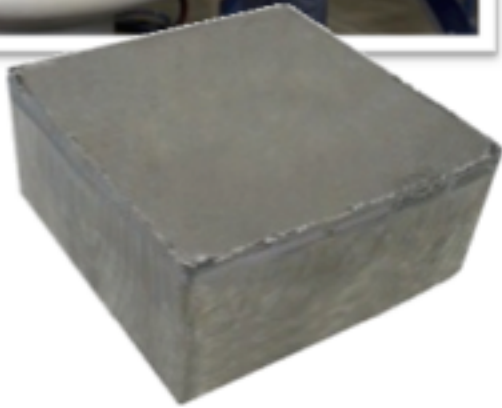
\*Based on GT Advanced Technologies management estimates for a GT best-in-class polysilicon plant with 10,000 MT/year using large reactors (>400 MTA ea.), hydrochlorination and heat recovery; 10-year depreciation, 6% interest rate.

# Polysilicon: Innovation Drives Market Leadership



# PV Business Overview

## PV Crystallization Furnaces



- Merchant market leader. Majority of solar multicrystalline wafer capacity worldwide provided by GT DSS<sup>(1)</sup>
- Shipped >3,100 DSS units since product introduction in 2003 (as of 7/2/11)
- Product technology that delivers quality, reliability, high throughput & low power consumption

**\$370M PV Backlog at end of Q1 FY12**

(1) GT Solar Management estimate

# Innovation Drives GT's Leadership



**DSS™ 450**  
**G5: 420kg**



**DSS™ 450HP**  
**G5: 450kg**



**DSS™ 650**  
**G5T: 590-650kg**

**SIGNIFICANT  
ACCELERATION  
AHEAD**

**CY  
2007**

**CY  
2010**

**CY  
2011**

**CY  
2011/  
2012**

*Breakthrough increases in throughput and efficiencies; reductions in power consumption*

- ◆ DSS™ High T/P Upgrades
- ◆ DSS™ 650 High Efficiency Multi
- ◆ DSS MonoCast™ Products
- ◆ PCG™ 800 kg – 1500 Kg

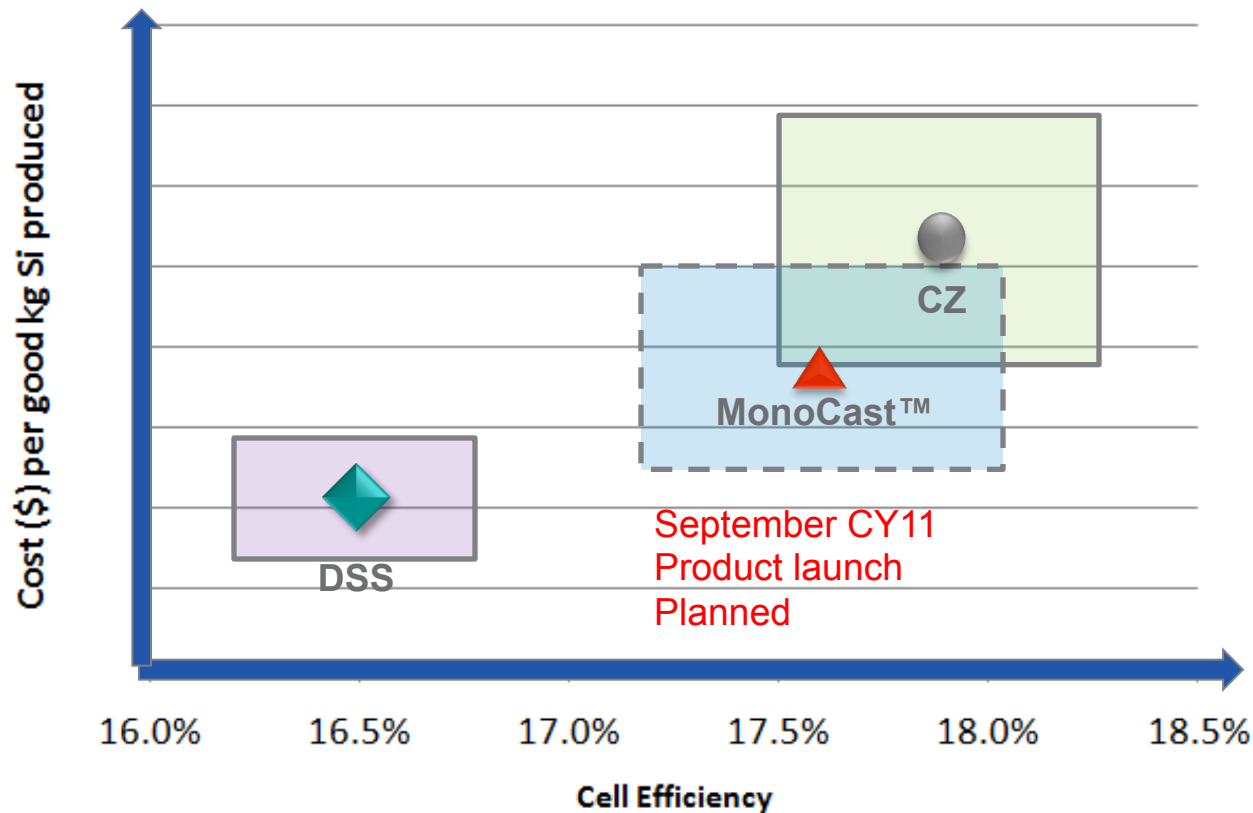
**GT is Committed to Accelerating the Rate of New Product Introductions**

*\*This is for informational purposes only and contains forward-looking statements for the purposes of the Safe Harbor provisions. The Company reserves the right to modify or delete elements of its development plan and is under no obligation to update such plans.*

# GT MonoCast™: A Potential Game Changer

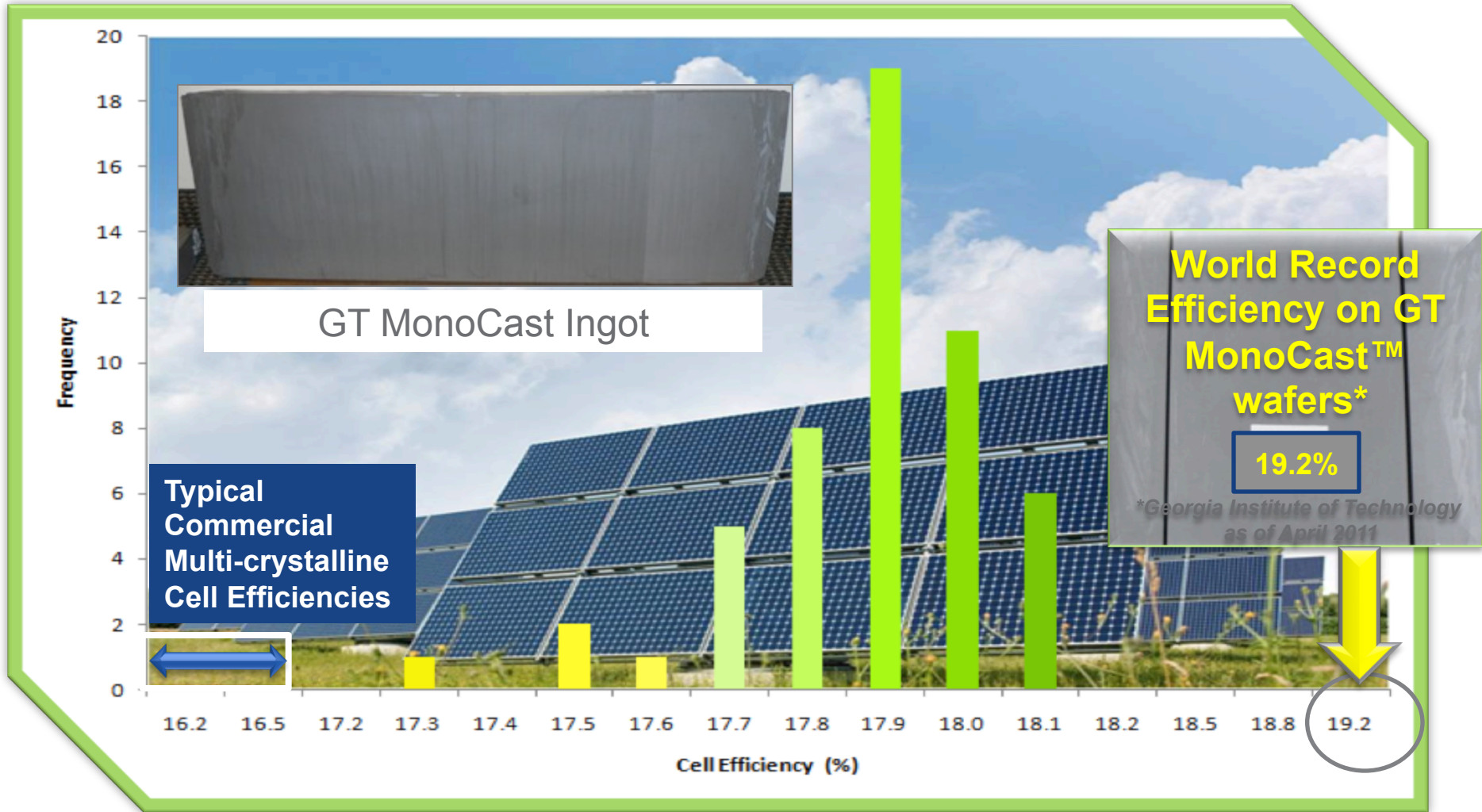
Significant Potential To Drive GT Growth in FY13 & Beyond

Cell Efficiency vs Cost of Ingot Growth



GT MonoCast™  
Offers Near-CZ Si  
Material  
Performance with  
the advantage of  
lower DSS Costs

# World Record MonoCast™ Efficiency\* MonoCast™ Enables Advance Cell Designs



GT Solar Management;  
Histogram data taken from 53 commercial scale MonoCast™ samples

# Monocrystalline (CZ) Initiative

- CZ Mono 35-40% of current Si-PV capacity additions
  - GT currently has no product offering in this category
  - “Mono-cast” material better than Multi but unlikely to match pure CZ
- Basic p-mono has higher cell efficiency advantage but costs are too high

**GT Next generation CZ product – Coming CY12/13**

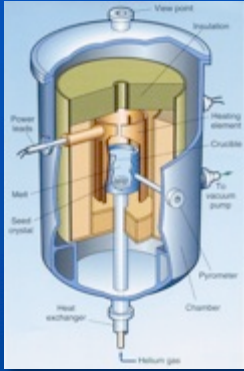


- Highly uniform wafers for any dopant (P, B, Ga)
- Significantly lower conversion costs vs. current CZ
- Targeted to high efficiency cell applications



# Dual-Focus Sapphire Strategy in HB-LED Market

## Sapphire Crystal Growth Furnaces



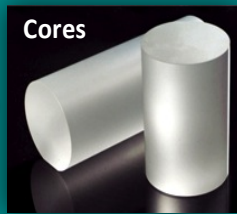
GT Products

- **Equipment Supplier:** GT Advanced Technologies sells advanced sapphire crystal growth furnaces (ASF)
- **Materials (@ Pilot Plant Scale):** GT Advanced Technologies sells sapphire cores into the LED market, primarily for high-brightness applications

## Boule Growth



## Core Fabrication



## Sapphire Fabrication

GT Products

## Downstream LED Operations (no current participation by GT)

### Sawing/Lapping/ Polishing/Packaging



### Epi-Ready Wafer Fabrication

### MOCVD



### Epi Wafer Fabrication

### LED Fab/Die Dicing



### LED Chip Fabrication

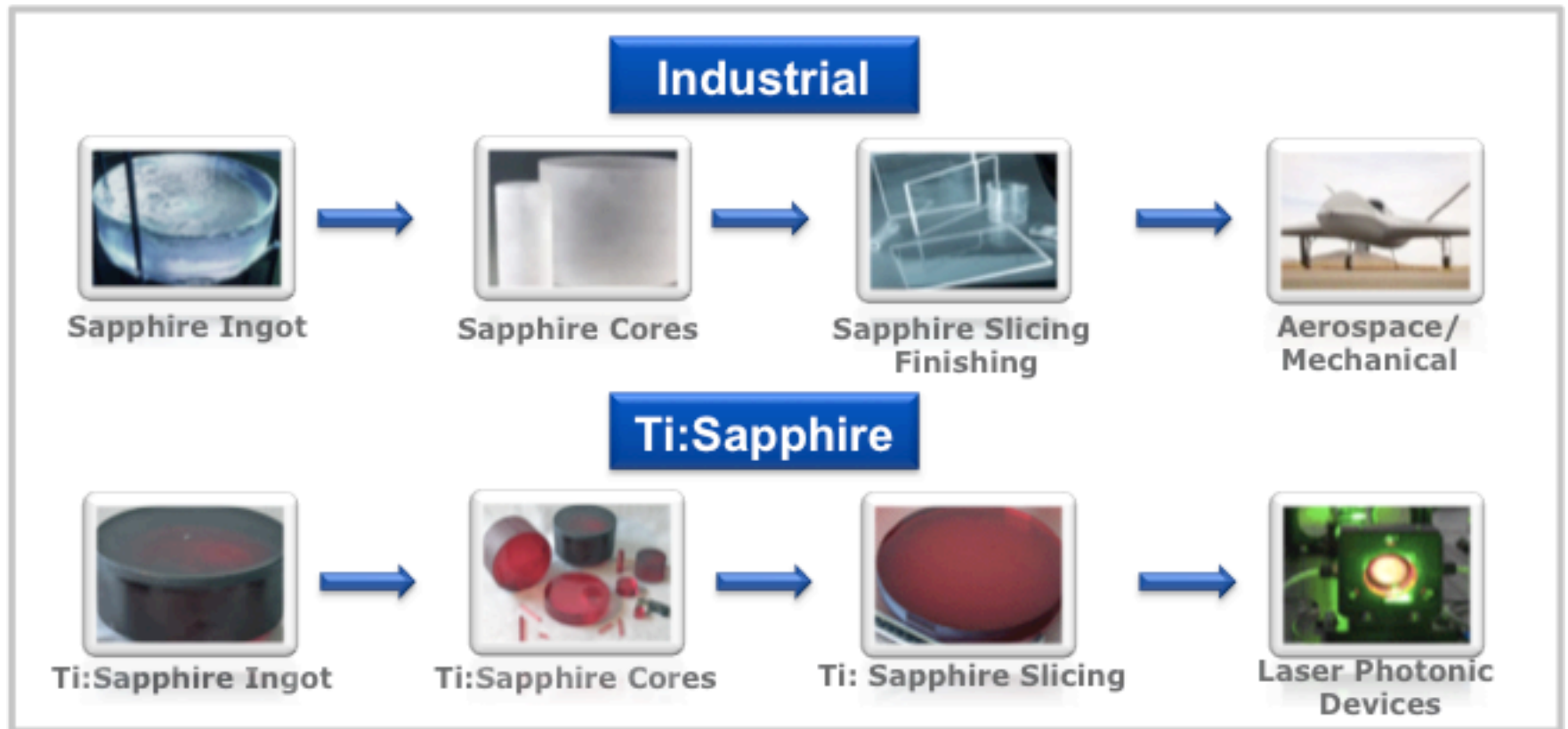
### Finished LED



### Assembly

# Industrial Markets for Materials Business

*GTAT also supplies sapphire materials in various forms – from cores to finished products – for other industrial markets.*



# Sapphire Materials Business Overview



- 40+ years of technical know how & expertise
- State-of-the-art facility in Salem, MA recently expanded to approximately 6M TIE
- Producing 100kg and 130kg boules
- Shipping 2", 4" & 6" sapphire cores in high volume, sampling 8" cores
- Supplied an estimated 30% to 35% of WW 6" Sapphire Cores for LED Applications<sup>(1)</sup>
- Supply cores to 6 of top 10 wafer makers<sup>(2)</sup>



**Customers are Extremely Satisfied with GT Sapphire Quality in HB LED Applications**

- (1) Actual GT Advanced Technologies FY11 6" core shipments for LED applications as % of WW 6" core shipment estimates by Canaccord Genuity and Yole Developpement (Sapphire Market 2010 Q4 Report)
- (2) Source: GT Advanced Technologies shipments compared to Top 10 wafer manufacturers as ranked by Yole Developpement, Sapphire Market 2010, Q4 Update

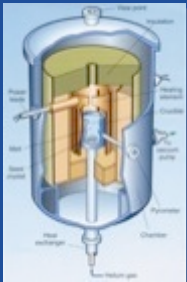
# GT Sapphire Equipment Business

## Salem Materials Operation

Process, Equipment,  
Consumables  
Technology Transfer

**> \$944M Sapphire Equipment Backlog** (as of August 9, 2011)

## Equipment Business



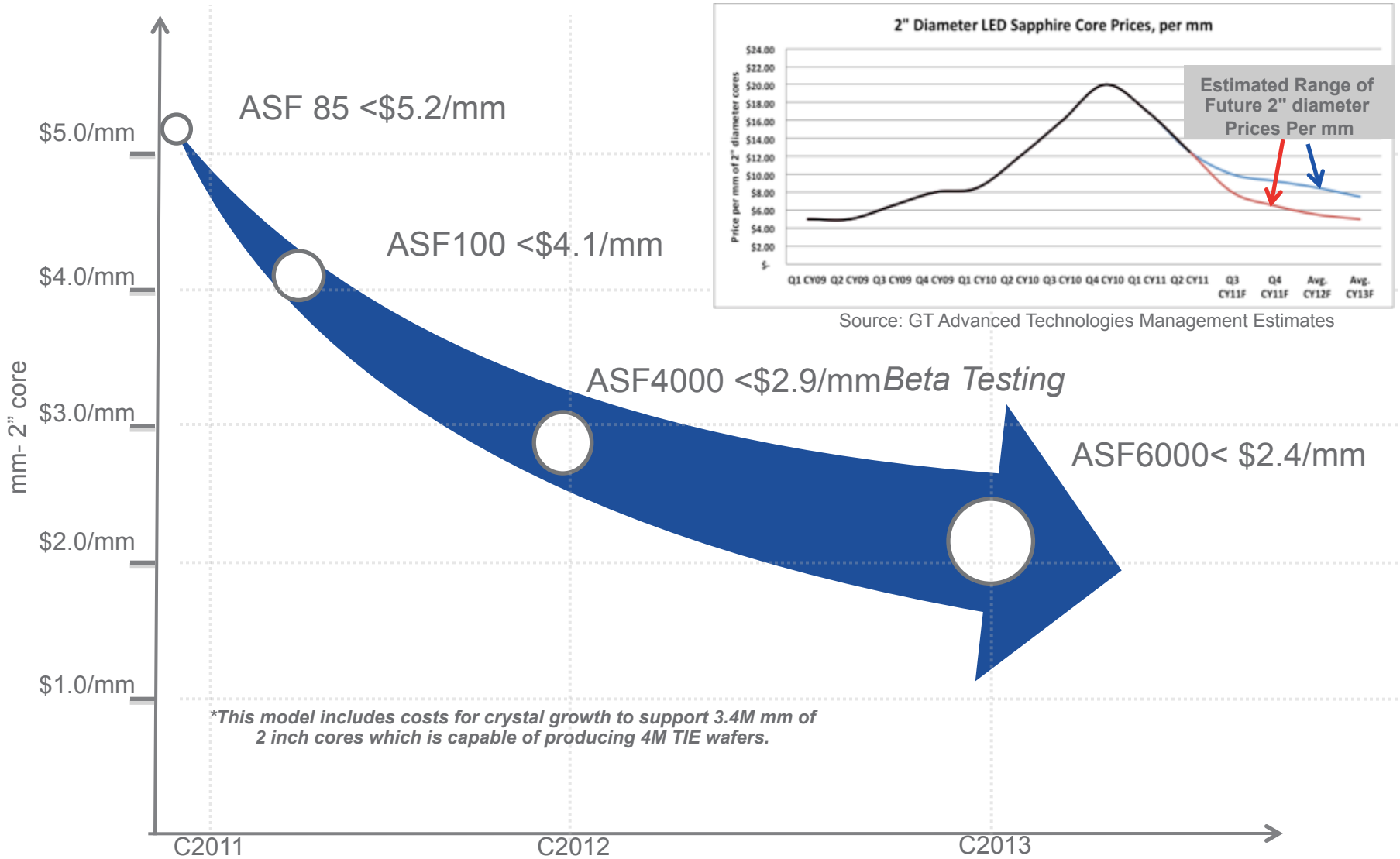
Manufacturing and beta site in Merrimack, NH

- **Market-leading performance**
- **Technology demonstrated in volume production in Salem**
- **Proven ability to ramp**
- **Asia Team: Nearly 200**  
Sales, Service/Support,  
Install/Train

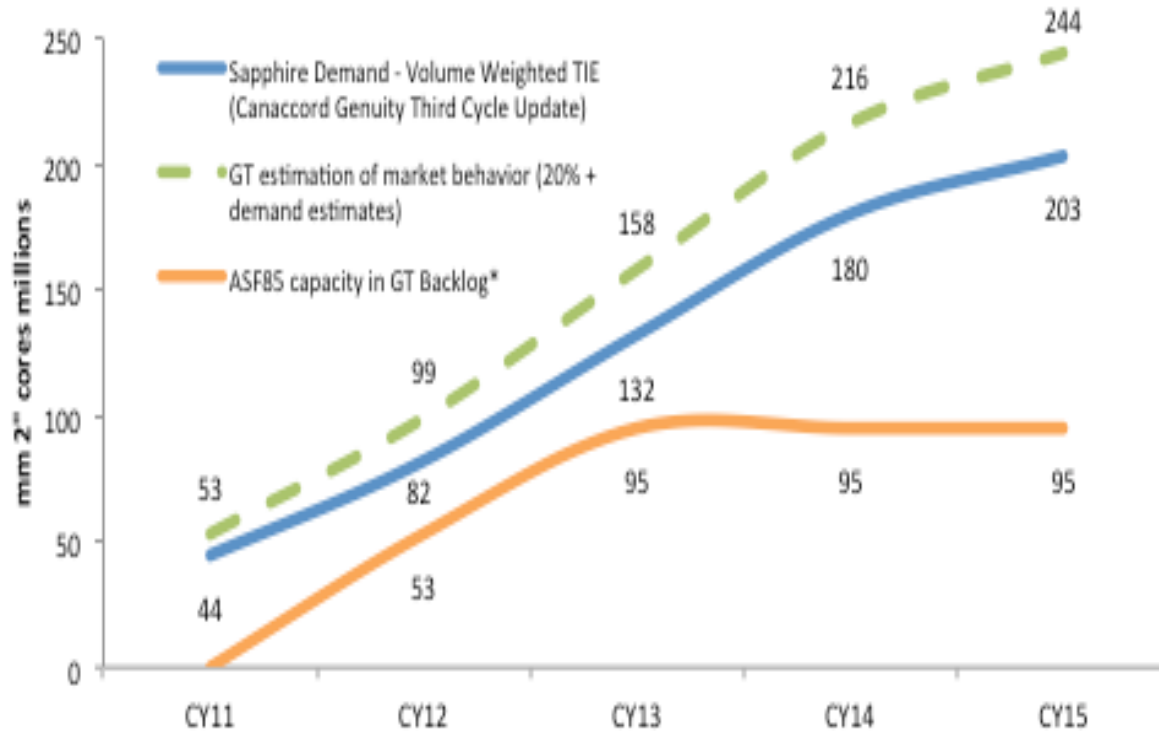
Know-how  
Transfer

**Equipment Customers**

# Dropping Sapphire Prices Will Favor GT



# Significant Market Opportunity for GT



- GT backlog of ASF85 orders\* could produce 95M mm of 2" capacity by 2013 (Assumes 100% utilization rates, 6 month ramp)

Customers remain committed and making good progress on facilities

Substantial opportunity for additional furnace sales remains

Sold out through early 2012

\*As of Aug 9, 2011

# Summary

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- Market leader in growth industries served
- Strong track record of innovation & technology leadership
- Diversified revenue streams position GT to grow through industry cycles
- Strong cash generation & balance sheet provide strategic flexibility



Thank You

**Investor Relations Contact:  
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# Forward-Looking Statements

This presentation contains information about management's future expectations, plans and prospects of our business that constitute forward-looking statements for purposes of the safe harbor provisions under The Private Securities Litigation Reform Act of 1995. Such statements are identified by words or phrases such as "will," "anticipate," "estimate," "expect," "project," "believe," "target," "guidance," "forecast," and other words and terms of similar meaning. In particular, forward-looking statements include, but not limited to, diversification of revenue streams, solar demand (as measured by gigawatts) in 2011 through 2015, key growth drivers for the solar industry, LED and sapphire demand in 2011 through 2015, LED industry growth drivers, ability to enable cost reductions in the solar value chain, cost at which customers can produce polysilicon at all-in cost, polysilicon customers remain committed and pipeline for polysilicon remains active, future targets for annual output and energy per GTAT polysilicon reactor, PFV market demand through CY12, upside potential for PV market demand after mid-CY12, significant acceleration of future generation products in the PV business (and the improvements in throughput, efficiencies and reductions in power consumption for such products), performance metrics and characteristics of 4 future PV products, commitment to accelerating rate of new PV product introductions, timing of introduction and performance characteristics and output of GT monocrystalline PV product (and cell efficiency vs cost of ingot growth), timing of commercialization of next generation CCZ product (and the output, efficiency and costs of such CCZ product), strategy in HB-LED market, proven ability to ramp sapphire production, expected drop in sapphire prices and that such drop will favor GT, sapphire equipment represents significant market opportunity for GT, production capacity of GT backlog of ASF85 orders by 2013, ASF customers committed and their progress on facilities, substantial opportunity for additional furnace sales remains, expected demand for mm<sup>2</sup> sapphire cores in CY11 through CY15, diversified revenue streams position GT to grow through industry cycles, strong cash generation of GT, strategic flexibility provided through strong cash generation and balance sheet, ability to achieve FY12 guidance, ability to achieve growth in FY13 and beyond, strength in polysilicon and sapphire businesses, strength through new business initiatives such as monocrystalline, annual silicon output and energy consumption of our polysilicon reactors in the future, innovation driving market leadership position in markets GT serves, expected production costs of GT polysilicon furnaces, PV innovation driving market share, participation in the rapidly growing sapphire market, including demand for TIE sapphire (and the reasons for this substantial growth), increased in R&D spending in the future and extending company's technology lead, introduction of new strategic initiatives, the Company's estimates for future periods (overall and by segment) with respect to revenue, net income, revenue mix, gross margin, operating expenditures, R&D expenditures, capital expenditures, tax rate, fully-diluted earnings per share, backlog, size of future backlog, and estimated backlog conversion and other financial information. These statements are based on management's current expectations or beliefs. These forward-looking statements are not a guarantee of performance and are subject to a number of uncertainties and other factors, many of which are outside the Company's control, which could cause actual events to differ materially from those expressed or implied by the statements. These factors may include the possibility that the Company is unable to recognize revenue on contracts in its order backlog. Although the Company's backlog is based on signed purchase orders or other written contractual commitments in effect as of the end of our fourth fiscal quarter, we cannot guarantee that our bookings or order backlog will result in actual revenue in the originally anticipated period or at all, which could reduce our revenue, profitability and liquidity. Other factors that may cause actual events to differ materially from those expressed or implied by our forward-looking statements include the possibility that changes in government incentives may reduce demand for solar products, which would, in turn, reduce demand for our equipment, technological changes could render existing products or technologies obsolete, growth of competition in all business segments, the Company may be unable to protect its intellectual property rights, competition from other manufacturers may increase, exchange rate fluctuations and conditions in the credit markets and economy may reduce demand for the Company's products and various other risks as outlined in GT Solar International, Inc.'s filings with the Securities and Exchange Commission, including the statements under the heading "Risk Factors" in the Company's quarterly report on Form 10-Q for the fiscal quarter ended July 2, 2011. Statements in this presentation should be evaluated in light of these important factors. GT Advanced Technologies Inc. is under no obligation to, and expressly disclaims any such obligation to, update or alter its forward-looking statements, whether as a result of new information, future events, or otherwise.

# Non-GAAP Reconciliation

Working Capital Investment		LTM Free Cash Flow		LTM Return on Equity	
<b>LTM Sales</b>	<b>\$994,914</b>	<b>LTM Cash From Operations</b>	<b>\$365,882</b>	<b>Average Shareholders' Equity over Last Twelve Months</b>	<b>\$232,212</b>
Fiscal Year ended 4/2/2011	\$898,984	Fiscal Year ended 4/2/2011	251,774	Shareholders' Equity as of 7/2/2011	262,484
Plus: Three Months Ended 7/2/2011	231,096	Plus: Three Months Ended 7/2/2011	139,721	Shareholders' Equity as of 7/3/2010	201,940
Less: Three Months Ended 7/3/2010	(135,166)	Less: Three Months Ended 7/3/2010	(25,613)		232,212
	\$994,914		365,882		
<b>Working Capital Investment</b>	<b>(\$152,045)</b>	<b>Less: LTM Capital Expenditures</b>	<b>(\$38,853)</b>	<b>LTM Net Income</b>	<b>\$210,326</b>
Current Assets	\$902,304	Year ended 4/2/2011	\$31,263	Fiscal Year ended 4/2/2011	174,755
Less: Cash & Cash Equivalents	(473,391)	Plus: Three Months Ended 7/2/2011	8,854	Plus: Three Months Ended 7/2/2011	52,069
Less: Short-term Investments	0	Less: Three Months Ended 7/3/2010	(1,264)	Less: Three Months Ended 7/3/2010	(16,498)
Less: Restricted Cash	0		\$38,853		210,326
Less: Current Liabilities	(580,958)				
	(\$152,045)				
		<b>LTM Free Cash Flow</b>	<b>\$327,029</b>		
<b>Working Capital Investment / LTM sales</b>	<b>(15.3%)</b>	<b>CAPEX as a % of LTM Sales</b>	<b>3.9%</b>	<b>Net Income / Avg. Shareholder Equity over Last Twelve Months</b>	<b>90.6%</b>

# Non-GAAP Reconciliation

Revenue Per Employee							
<b>LTM Sales</b>		<b>\$994,914</b>					
Fiscal Year ended 4/2/2011	\$898,984						
Plus: Three Months Ended 7/2/2011	231,096						
Less: Three Months Ended 7/3/2010	(135,166)						
	\$994,914						
<b>Employees at 7/2/11</b>		<b>658</b>					
<b>Employees at 4/3/11</b>		<b>622</b>					
<b>LTM Revenue Per Employee (Q1'12)</b>		<b>\$1,512</b>					
<b>LTM Revenue Per Employee (YE'11)</b>		<b>\$1,600</b>					
<b>Gross Margin</b>							
<b>LTM Gross Margin</b>		<b>\$445,461</b>	<b>Operating Margin</b>				
Fiscal Year ended 4/2/2011	\$377,995		Fiscal Year ended 4/2/2011	273,302		Fiscal Year ended 4/2/2011	\$ 1.24
Plus: Three Months Ended 7/2/2011	113,389		Plus: Three Months Ended 7/2/2011	78,686		Plus: Three Months Ended 7/2/2011	\$ 0.41
Less: Three Months Ended 7/3/2010	(45,923)		Less: Three Months Ended 7/3/2010	(27,086)		Less: Three Months Ended 7/3/2010	\$ (0.11)
	\$445,461			324,902			\$ 1.54
<b>LTM Gross Margin %</b>	<b>44.8%</b>		<b>LTM Operating Margin %</b>	<b>32.7%</b>		<b>LTM EPS (Fully Diluted)</b>	<b>\$ 1.54</b>