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Reason for Report:

Initiating Coverage

Changes	Previous	Current
Rating	--	Buy
Price Tgt	--	\$15.00
FY09E Rev (mil)	--	\$613.4
FY10E Rev (mil)	--	\$926.9
FY09E EPS	--	\$0.71
FY10E EPS	--	\$1.22

Price: \$11.82

52 Week High: \$17.00

52 Week Low: \$9.30

12-Month Price Target: \$15.00

~17x our CY09E EPS of \$0.90

Shares Out (mil): 147.7

Market Cap. (mil): \$1,745.8

Avg Daily Vol (000): NM

Book Value/Share: \$0.07

Cash Per Share: \$1.05

Debt to Total Capital: 0%

Div (ann): \$0.00

Est LT EPS Growth: 30%

P/E to LT EPS Growth (FY08): 1.6x

Est Next Rep Date: 11/25/2008

Fiscal Year End: Mar

Rev (mil)	2008A	2009E	2010E
Jun	\$15.4A	\$57.1A	\$174.4E
Sep	\$81.8A	\$129.3E	\$137.7E
Dec	\$14.7A	\$232.8E	\$246.4E
Mar	<u>\$132.8A</u>	<u>\$194.3E</u>	<u>\$368.4E</u>
FY	\$244.1A	\$613.4E	\$926.9E
CY	\$551.3E	\$752.8E	\$1,400.6E

FY RM 7.2x 2.8x 1.9x

CY RM 3.2x 2.3x 1.2x

EPS	2008A	2009E	2010E
Jun	(\$0.04)A	\$0.04A	\$0.20E
Sep	\$0.12A	\$0.15E	\$0.16E
Dec	(\$0.03)A	\$0.29E	\$0.32E
Mar	<u>\$0.20A</u>	<u>\$0.23E</u>	<u>\$0.54E</u>
FY	\$0.25A	\$0.71E	\$1.22E
CY	\$0.68E	\$0.90E	\$1.95E

GT Solar International, Inc.

Buy

(SOLR - \$11.82)**Volatility: High**

In The Sweet Spot of The Solar Supply Chain; Initiate w/Buy

KEY POINTS:

- We believe SOLR is in the sweet spot of the solar equipment supply chain and it is well-positioned to benefit from the eventual decline of solar module prices, resulting in a significantly larger market for equipment.
- **Potential Catalysts** – We believe investor concerns that SOLR will suffer market share declines near-term will be alleviated over the next 2–3 quarters with a rising backlog and additional orders from LDK and other customers, and first revenue recognition (likely Dec-08 qtr) on its polysilicon equipment (DC Chemical) will validate SOLR's technology and market opportunity.
- While high customer concentration and potential competition from lower cost suppliers remain risks, we believe these are largely priced into the current share price.
- Initiate with Buy rating and \$15 PT (~17x our CY09E EPS of \$0.90).
- **Continued Industry Lead in DSS Furnaces Market:** We anticipate SOLR to remain the market share leader in multi-crystalline ingot manufacturing equipment at 60%+ of overall market share through 2010. Despite eventual competition and market share erosion longer term in a significantly larger market, SOLR can maintain industry lead with 1) continuous technology improvements to DSS furnaces which result in lower cost/watt for its customers and 2) expanded product offerings in polysilicon, feedstock gas design, and turnkey equipment offer bundling opportunities to integrated customers. We anticipate near term concerns of SOLR market share loss will dissipate as SOLR wins additional furnace orders from LDK and other customers and realizes a higher backlog.

INVESTMENT RECOMMENDATION:

We assign a ~17x multiple to our CY09 EPS estimate of \$0.90, resulting in our \$15 price target. This multiple is at a premium to peer group multiple (~14x), which we believe is justified given GT Solar's technology leadership and leading market share in DSS furnaces, and significant opportunities in its polysilicon business due to continued strong world-wide solar demand.

RISKS TO ACHIEVEMENT OF TARGET PRICE:

Risk to our PT include but are not limited to: 1) Customer concentration – 3 customers account for >70% of revenue; 2) Technology risk – SOLR lower efficiency multi-crystalline technology competes with higher efficiency mono wafer technology; 3) Potential competition from lower cost manufacturers; 4) Pending outcome of recent class-action law suits; 5) Reduction or elimination of government subsidies. **Note:** This research report has been prepared in whole or part by non-US research analysts who may be associated persons of Piper Jaffray & Co. These research analysts are not registered/qualified as research analysts with FINRA, but instead have satisfied the registration/qualification requirements or other research-related standards of a non-US jurisdiction that have been recognized for these purposes by FINRA.

COMPANY DESCRIPTION:

GT Solar manufactures specialized equipment for production of PV wafers, cells, modules, and polysilicon.

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- **Best Positioned to Benefit from Eventual Module Price Declines:** As solar module ASPs decline toward grid parity (due in large part to polysilicon price declines) we anticipate significantly greater unit demand that will require accelerated capacity expansion across the supply chain. To that end, GT is a prime beneficiary participating in polysilicon, ingot, and turnkey manufacturing solutions.
- **Technology Improvements / Expansion of Addressable Market Afoot:** SOLR has begun to build initial next generation DSS furnaces and polysilicon equipment that will be commercially available in ~12 months. These technology improvements improve the MW yield and cost/W for customers and will help SOLR maintain its market share. Additionally, we believe SOLR can double its addressable market by offering turnkey polysilicon feedstock (TCS/Silane) solutions.

VALUATION

We would compare SOLR to other PV equipment suppliers (i.e. AMAT, AMG, Meyer Burger, Centrotherm, Roth and Rau). Refer to Exhibit 1 for details. GT is distinguished by its strong reputation for industry leading technology, quality, and new offerings in polysilicon equipment that are built on the foundation of strong engineering talent including engineers that previously worked at large incumbent polysilicon suppliers that use proprietary poly equipment.

- **Centrotherm is closest comp:** The closest PV equipment comp is Centrotherm (Solmic), which is a leading provider of turnkey PV equipment lines that are successful because it has leveraged its leading share of diffusion furnaces (Cell making equipment). Like SOLR, the company is entering the polysilicon equipment market. We believe SOLR has a 12+ month lead versus Centrotherm in polysilicon CVD reactors. Centrotherm trades at ~14.8x CY09 consensus earnings estimates.
- **Other close comps:** Meyer Burger and Roth and Rau are also PV equipment companies with strong market shares in respective cell making equipment segments of the supply chain. These companies trade at 16x-16.5x CY09 consensus earnings estimates.
- **Equipment comparables:** The PV equipment comp group trades at a mean of ~14x CY09E EPS with close comp Centrotherm at ~14.8x and Roth and Rau at ~16.4x CY09 consensus earnings estimate. Given GT Solar's \$1.5B order backlog and strong end market demand, partially offset by growing competition, we assign a ~17x multiple to our CY09 earnings estimate of \$0.90, resulting in our \$15 price target.

Exhibit 1: Comp Table

Company	Price	Mkt Cap (local)	Calendar EPS (consensus)			Calendar P/E (versus consensus)			Calendar Rev (consensus)		
			2007	2008E	2009E	2007	2008E	2009E	2007	2008E	2009E
Equipment	9/2/08										
Applied Materials	\$17.80	24,126	1.20	0.68	1.02	15.9x	26.2x	17.5x	8175	8124	9426
Advanced Metallurgical Group	€ 64.98	1,741	0.30	2.83	5.37	216.6x	23.0x	12.1x	1156	1484	1977
Centrotherm	€ 47.09	753	1.36	2.08	3.19	34.6x	22.6x	14.8x	166	358	554
Meyer Burger (Germany)	€ 203.00	613	4.02	9.14	12.59	50.5x	22.2x	16.1x	129	257	356
Oerlikon	CHF 264.25	3,736	24.00	20.27	25.35	11.0x	13.0x	10.4x	5629	5418	5832
PVA TePla AG (Germany)	€ 7.40	161	0.28	0.49	0.63	26.4x	15.1x	11.7x	114	167	194
Roth & Rau	€ 34.34	347	1.22	1.67	2.09	28.1x	20.6x	16.4x	146	263	320
Spire Corporation	\$10.92	90	(0.20)	0.02	0.87	NM	NM	12.6x	38	78	129
Group Mean						54.7x	20.4x	13.9x			
GT Solar*	\$11.82	1,746	NA	0.68	0.90	NA	17.4x	13.1x	NA	551.3	752.8

Source: PJC estimates, Baseline, ILX, Thomson

* PJC Estimates

FINANCIAL DISCUSSION

- **Strong Order Backlog:** While SOLR's ~1.26B backlog at the end of June 08 indicated a slight q/q decline from its ~\$1.31B backlog reported at the end of March 08, SOLR indicated on its August 26th earnings call that the total backlog had increased to ~\$1.5B since the end of June 08 quarter. SOLR indicated it expects to recognize ~\$550M of revenue from this backlog over the next 3 quarters giving the company FY09 revenue visibility of >\$600M. We anticipate the company's backlog will further increase over the next few quarters given continued strong world-wide solar demand.
- **Gross Margin Should Remain in 38% - 40% Range Over Next 2 Years:** SOLR reported FQ109 gross margin of 42.6% and indicated it expects gross margin to remain in the upper 30s to lower 40s range depending on product mix. We believe SOLR's polysilicon business gross margin will remain slightly below its PV business gross margin. Consequently, we expect overall gross margin to remain in the 38% - 41% range over the next two years depending on the product mix, especially as SOLR starts recognizing revenue from its reactor (polysilicon) sales.

- **Strong Balance Sheet and Cash Flow:** SOLR had ~\$155M in cash and cash equivalents at the end of its June 08 quarter after its \$90M dividend payment that had been declared at the initial offering. SOLR's deferred revenue increased to ~\$235M in FQ109 from ~\$165M at the end of FY08. Also, SOLR generated cash flow from operations of \$61.1M in FQ109 and FCF of \$57.3M. Given SOLR's solid order backlog and our expectation of strong execution, we anticipate SOLR will continue to improve its balance sheet and cash flow metrics over the next several years.

COMPANY DESCRIPTION AND BACKGROUND

GT Equipment Technologies was founded by Kedar Gupta and Jonathan Talbott in 1994, and was later renamed GT Solar Inc in 2002. GT Solar provides multi-crystalline wafering equipment (Directional solidification systems (DSS)), slurry recovery systems, wafer cleaning & etch systems and turnkey photovoltaic (PV) lines. Based out of Merrimack, NH, GT Solar is the leading solar equipment manufacturer with a~75% market share (60%+ longer-term) of multi-wafering equipment, and is well positioned to enter the polysilicon equipment market.

CORE BUSINESS MODEL

1. **Ingot Equipment:** The company makes multi-crystalline ingot manufacturing equipment called Directional Solidification Systems (DSS) furnaces. This equipment makes blocks of polysilicon that are sliced into wafers which are then made into cells, cells assembled into modules.
2. **Polysilicon Manufacturing Equipment:** This is GT's new line of business that offers polysilicon deposition reactors that are used to manufacture polysilicon. Deposition reactors are used to produce polysilicon by reacting gases at high temperature and pressure. GT also offers converters and gas design systems.
3. **Module Assembly Equipment:** The company also offers PV turnkey module lines that are used to string together individual cells to make modules
4. **Expanding Product Offering:** GT is also planning on offering Tri-Chloro- Silane (TCS) design package which we believe will make GT's product offering more comprehensive. TCS gas is essential in manufacturing polysilicon. We believe that technical know-how of a TCS gas design system is one of the key barriers to entry of new polysilicon manufacturing companies and GT's offering of this design package along with its polysilicon deposition reactors will help alleviate some of the key barriers to entry.

Customers and Markets: The company's photovoltaic (PV) segment accounted for ~85% of its F08, while its polysilicon segment is expected to recognize revenue by F3Q09. The company supplies equipment to customers primarily in Asia and Europe. In F05 ended March 31, 2005, 51% of the company's revenue from sales came from Asia and 35% from Europe. At the end of F06, Asia accounted for ~74% of total revenue from sales and Europe accounted for 11%. We believe the company's exposure to the Asian market because of GT's presence in China since 2002 will enable GT's exposure to low cost Asian manufacturing. The company had ~\$1.26B order backlog as of June 28th 2008.

Customers Snapshot: Although GT experienced customer concentration (LDK) in F08, we anticipate that three customers will account for 14-20% of SOLR's F09 revenue. Refer to Exhibit 2 for details.

Exhibit 2: GT Solar Customer Snapshot

Customers	FY08	
	Amount (\$M)	% Total
LDK	152.3	62%
Trina Solar	23.2	9%
Konca	16.3	7%
Tatung	14.7	6%
Glory Silicon	10.3	4%
Other	27.3	11%
Total Revenue	244.1	100%

Customers	FY09E	
	Amount (\$M)	% Total
LDK	116.7	19%
Glory Silicon	116.7	19%
DC Chemical	86.0	14%
Yingli	67.6	11%
Trina Solar	36.9	6%
Other	190.4	31%
Total Revenue	614.3	100%

Source: Company documents, PJC

GT SOLAR INVESTMENT THESIS

- **How to invest in solar equipment manufacturing companies?** Polysilicon feedstock prices are at record high prices of ~\$400/kg, making solar companies with no long term polysilicon supply contracts exposed to a high priced spot market. We believe that lack of commercially available polysilicon equipment contributed in part to the tight supply of polysilicon in addition to the lack of additional capacity from incumbents. We argue that for the foreseeable future, polysilicon suppliers will enjoy the best margins in the solar supply chain—a direct way to play the polysilicon shortage. We believe that polysilicon equipment providers will stand to benefit in the long run while also enabling the entry of new polysilicon producers. When the polysilicon shortage eases we anticipate that winners will be determined by the lowest production cost/watt. More polysilicon and potential oversupply will lower the ASPs of panels driving panels to grid parity.

Exhibit 3: GT Solar Products- DSS Furnaces and Polysilicon Reactors

Source: Company Documents

PLAYING TO OUR THESIS

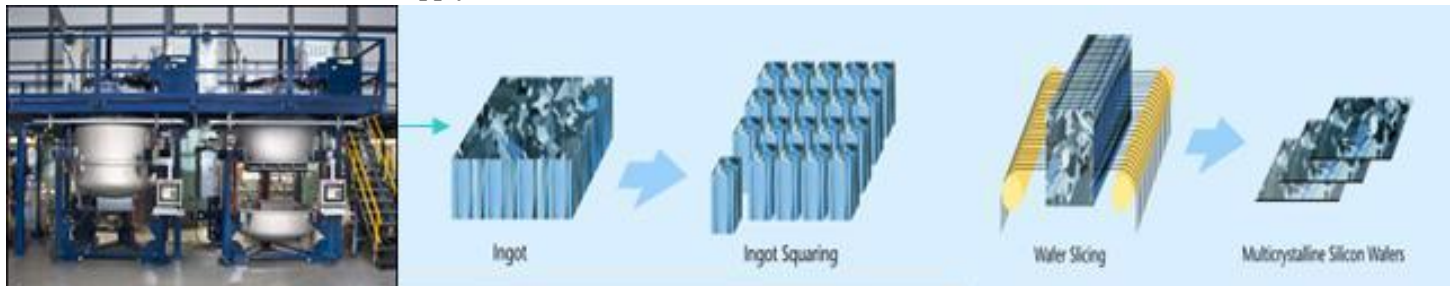
GT Solar is one of few commercial suppliers of polysilicon equipment in the PV market, and has a ~75% (likely 60%+ longer-term) market share in multi-crystalline ingot furnaces. It is positioning itself as a technology enabler in the solar PV market thereby lowering the barriers to entry to new entrants into the sector. It is also strategically positioned in China and hence leveraged to low cost Asian manufacturing. Besides, GT has >50% of its revenue from sales by selling into Asian markets. As solar module ASPs decline toward grid parity (due a large part to polysilicon price declines) we anticipate significantly greater unit demand that will require accelerated capacity expansion across the supply chain. To that end, GT is a prime beneficiary participating in polysilicon, Ingot, and Turnkey mfg solutions.

KEY POINTS

- **GT has a strong track record in wafer furnaces:** GT is one of the leading providers of multi-crystalline ingot manufacturing equipment that allows for lower silicon utilization + the lowest wafer processing costs. It provides equipment to produce multi-crystalline ingots; a cheaper alternative although less efficient compared to mono-crystalline silicon ingots and wafers. It has the potential to gain a substantial portion of the market share in poly reactors as it is one among a small number of companies providing these reactors commercially. The company's wafering equipment are the most widely used in the industry; between October '06 and September '07 the company delivered 228 DSS units with an aggregate capacity of 706MW, which represents nearly half the installed multi-crystalline wafering capacity worldwide in 2007. The company has 700 furnaces in backlog, representing 2.8GW+ of capacity. We estimate GT will have 60%+ market share in furnaces.
- **One of few suppliers of poly equipment:** The company offers polysilicon manufacturing equipment and related services. We believe that polysilicon will continue to be a primary cost driver for poly based solar modules up to 2010. The company at present licenses its polysilicon manufacturing process from Siemens although it is working to develop alternative methods to produce polysilicon. GT's primary producing customer at this point is DC Chemical and a final acceptance of its product by DCC will be a positive catalyst in GT's reactor business. We believe that the polysilicon shortage was exacerbated due to the lack of availability of commercial polysilicon manufacturing equipment. With a robust prediction for solar demand worldwide driven in part to declining module ASPs, we anticipate an increasing demand for polysilicon, ingot/wafer and turnkey solutions in the near future.

- **Turnkey solutions capability:** Increasing worldwide demand for solar modules will in turn drive GT sales of wafer and turnkey cell equipment. Sales of GT polysilicon equipment and wafer equipment are often to the same "upstream" customer. GT Solar's turnkey offering is unique in the sense that it is one of few companies that offers equipment for polysilicon production along with turnkey equipment solutions. Also demand for turnkey solutions is on the rise and GT stands to gain traction in this market.
- **Established presence in China:** GT has had an established presence in China since 2002 and with the Chinese PV market accounting for nearly a third of the worldwide PV market, GT is at an advantage to provide low cost poly manufacturing solutions within China. Chinese solar OEMs offer the lowest cost manufacturing at present. Increasingly, Chinese companies are integrating upstream to produce their own polysilicon like LDK Solar which will fuel GT's poly manufacturing equipment sales. This trend we believe will put the European OEMs at risk. Besides, with the easing of polysilicon supply, the market will see the entry of low-cost Asian suppliers.
- **Experienced management team:** GT Solar has an experienced management team from REC, MEMC, BP Solar, and Schott Solar. The CEO Mr. Tom Zarrella served as head of operations at Schott Solar AG. The CFO of the company Mr. Robert Woodbury was the executive VP and Chief Financial Officer at Brooks Automation, Inc.

Exhibit 4: GT Solar In The Solar Supply Chain



Source: Company documents, PJC

INVESTMENT RISKS

- **Extensive competitive landscape:** Although GT Solar has enjoyed a monopoly like situation in supplying DSS furnaces to numerous companies, we believe that GT faces stiff competition from both low cost Chinese suppliers and some European suppliers that offer the promise of higher precision at the same or lower cost than GT's furnaces. New Chinese manufacturers of furnaces and poly reactors offer half the price and lead time but quality is a question. We believe that expensive poly plants may not risk their ramp with inferior equipment. Competition in its PV turnkey business comes from Spire, Centrotherm, Manz and Baccini (AMAT). Competition in the polysilicon reactor market comes primarily from MSA (Germany) and Solmic (Centrotherm), and incumbent suppliers have their own proprietary solutions.

Exhibit 5: DSS Furnaces Competition

Company	Location	Features
Ferrotec Corporation	Japan	Primarily a mono-crystalline ingot pulling company that recently introduced a 450kg furnace; It traditionally serves the Japanese market
PVA Tepla	Germany	Primarily a mono-crystalline ingot pulling company; a new entrant in the furnace market
ALD	Germany	A supplier to REC and Renesola among others and offers a very large scale furnace for exclusive use by REC
JYT	China	JYT's 800-Kg furnaces will be used for processing low quality scrap and UMG materials at LDK

Source: PJC

GT's furnace risk from JYT: GT Solar's majority customer in 2008, LDK recently announced that they are going to second source furnaces from JYT in China. While we believe that JYT's furnaces might be offered at a lower price compared to GT's with potentially a higher throughput, we remain apprehensive about the quality of the end product as JYT's furnaces have not yet been fully installed and ramped. Also we believe that JYT's 800-Kg furnaces will be used for processing low quality scrap and UMG materials at LDK.

Exhibit 6: Furnaces from GT Solar and JYT



Source: JYT and GT Solar

Assuming ~6.5g/W silicon usage per wafer, Exhibit 7 calculates the output in MW per year per furnace.

Exhibit 7: GT Vs JYT Furnace Output Estimates

	DSS 450	JYT 800
Units	1	1
Capacity/furnace (MT)	0.45	0.8
Yield	75%	75%
total production (MT)	0.338	0.600
grams/watt	6.5	6.5
MW/batch	0.052	0.092
cycle time (hrs)	48	60
down time	50%	50%
Working days	300	300
Uptime (hrs)	3600	3600
Batches/yr	75	60
MW/yr/furnace	3.9	5.5

Source: PJC estimates

- **Technology risk:** GT's multi-crystalline technology competes with mono wafer technology (refer to Exhibit 8 for comparison). Mono-crystalline technology offers higher efficiency but has greater cost versus multi technology. Multi-crystalline technology has become increasingly popular on account of lower costs and faster processing times associated with it. Multi-crystalline capability allows use of varied raw materials including scrap, recycled poly, and powder.

Exhibit 8: Multi-crystalline vs. Mono-crystalline

Multicrystalline	Monocrystalline
Advantages	
1. Faster production process 2. Potential efficiency improvement through increasing ingot size 3. Raw material flexibility (including recycled poly, scrap, and silicon powder) 4. Lower capital and production costs 5. Higher potential for technological adv	1. Fewer impurities and crystal defects 2. Higher cell conversion efficiency
Disadvantages	
1. Lower conversion efficiency	1. Slower and more expensive 2. Less scope for technological developments 3. Ingot size increases not economic

Source: PJC

- **Pending Outcome of Recent Class-Action Lawsuits:** In the first week of August 2008, several class action lawsuits were filed against SOLR alleging that the company's IPO documents misstated and potentially omitted material information on SOLR's business relationship with LDK. These class actions law suits were commenced following a press release from LDK stating the company planned to buy furnaces from a Chinese company JYT implying a significant share loss for SOLR. We believe SOLR was taken by surprise by this press release and we also believe that SOLR's relationship with LDK remains healthy with potential new orders from LDK continuing. While the final outcome of these lawsuits remains uncertain, and while we remain optimistic that there will be a successful resolution, any negative outcome could impact the company's operating results, balance sheet and cash flows.
- **LDK risk:** LDK is a risk as we believe it may not have adequate financing for its expansion plans.
- **Order book may be nearing peak:** We believe modest industry over-capacity in 2010 may indicate that GT's order book will peak in CY2009 and that CY2010 may represent a down year. However, if polysilicon prices fall substantially, the price of solar may reach grid parity sooner than expected and thus demand would remain robust for several years.
- **Risk associated with DCC ramp:** DC Chemical has demonstrated limited success on GT poly reactors with only 100MT produced in Q108. This is GT's only producing customer at this time. GT converter technology for recycling is not used at DCC, and thus is commercially unproven.
- **Macro ITC and Spain risk:** Although the ITC extender bill was passed by the House, longer term government incentives in the US remain unclear. Reduction in Spanish incentives could affect macro demand dynamics.
- **Risk of Elimination of Subsidies:** We believe that the growth of the solar industry will remain largely subsidy driven over the next 2 – 3 years and that elimination of subsidies remains a risk. However, we also believe that the number of subsidies and total subsidy dollars worldwide are going up as new countries adopt solar incentives and comply with renewable portfolio standards.

MARKET OVERVIEW

\$12B market in 2010: The solar module market is large and growing rapidly, driven by higher energy prices, growing world-wide subsidies, and increased focus on energy independence. Major subsidies are provided in Germany, Spain, and Italy, and increasingly in Greece, France, Korea, as well as certain states in the U.S. With the cautious overhang over the future revision of the Spanish subsidy we continue to believe that markets like Italy, France, Korea, Greece and the Middle East will more than offset any potential decline in Spanish demand. We estimate the solar module market was ~ \$4 billion in 2004 (1,256MW of production) growing 35% to >\$5.5 billion in 2005 (~1,700MW), limited only by the polysilicon raw material shortage. We believe the market will more than double to >\$12 billion in 2010 (~5,000-6000MW).

Due to the subsidy structure, solar module demand is highly elastic. At the right price point, there is more than enough demand to sell out solar manufacturers' capacity. Due to the polysilicon shortage, raw materials prices have grown rapidly, with current spot prices as high as ~\$450/kg. We believe that polysilicon supply will remain tight until Q409 with possible signs of easing going into 1H2010. We argue that shortage of polysilicon was due in part to the lack of availability of commercially available polysilicon manufacturing equipment and lack of additional capacity from the incumbents. Both polysilicon and wafers continue to be in tight supply due to growth in world wide solar demand and a rapid increase in Chinese solar cell capacity. However, the shortage of raw material has limited the market's growth. We anticipate that rising raw material prices and annual ASP declines of ~10-12% (in line with annual subsidy reductions) could threaten module manufacturer's profitability in the near to mid term.

Large market by 2010-2012: When the cost of solar modules is competitive with the grid without subsidy, which we believe could occur in the 2010-2012 time-frame, Solar will be able to compete broadly with the electricity generation market. Increasingly, more solar companies are selling into the utility companies or setting up large power plant installations. We anticipate this trend to accelerate given the high costs of electricity generation.

GT SOLAR COMPETITIVE ADVANTAGES

- **Strong track record in wafer furnaces:** Between October '06 and September '07 the company delivered 228 DSS units with an aggregate capacity of 706MW, which represents ~50% installed multi-crystalline wafering capacity worldwide in 2007. The company indicated that that it had shipped over 700 DSS furnaces through Q109 of which >50% were its new DSS450 model. Current backlog is at ~\$1.5B. We estimate that GT will have ~60%+ of overall share of furnace market in the longer-term.
- **One of few suppliers of poly equipment:** GT is one of few suppliers of commercial polysilicon manufacturing equipment. We believe that part of the reason for tight polysilicon supply was the lack of commercially available polysilicon manufacturing equipment. We view GT has a technology enabler enabling the entry of new companies into the solar market by lowering the barriers to entry. Besides, the company is planning on expanding its product offering to TCS gas design package as well. TCS gas is an essential ingredient in the manufacturing of polysilicon. We believe that lack of experienced professionals in the field has restricted this process know-how only to select incumbents. With this offering we believe GT stands to gain further traction in the PV market.
- **Turnkey solutions capability:** Demand for turnkey PV solutions is on the rise; GT Solar stands to gain traction in this segment of market by leveraging its leading market share in wafers. Turnkey lines are usually sold to the same upstream customer and with GT's significant market share in DSS furnaces and increasing traction in its reactors segment, we believe GT's turnkey business will benefit from its existing and new customer relationships.
- **Established presence in China:** We estimate the Chinese solar market accounts for ~1/3rd of the total PV market and is the hub for low cost manufacturing. GT has had an established presence in China since 2002, which we believe provides the company an opportunity to gain further traction in China and therefore to competitive low cost manufacturing.
- **Experienced management team:** GT Solar has an experienced management team from REC, MEMC, BP Solar, Schott Solar, and Brooks Automation. Also, we believe that SOLR employs experienced professionals in TCS gas design with hands-on experience in polysilicon manufacturing.

WORLD-WIDE WAFER CAPACITY

Exhibit 9 shows the wafer capacity for the multi- crystalline industry. We assume production output is ~75% of capacity. It is based on company announcements and supply chain estimates. It primarily covers the leading suppliers. We estimate worldwide wafer/ingot production output will increase to ~8.1GW in 2010 from ~3.7GW in 2008.

Exhibit 9: PJC Multi Ingot Worldwide Capacity Forecast (MW)

PJC Multi Ingot Capacity Forecast (MW)											
Company	Furnace Supplier	2006		2007		2008E		2009E		2010E	
		Year End Capacity	Actual Output	Year End Capacity	Actual Output	Planned Capacity	Planned Output	Planned Capacity	Planned Output	Planned Capacity	Planned Output
Non-China											
Green Energy	GT	85	64	200	150	300	225	350	263	400	300
Kyocera Solar	GT	76	57	76	57	76	57	76	57	240	180
PV Crystalox	Own	288	216	288	216	290	218	350	263	550	413
REC	ALD	360	270	483	362	840	630	1250	938	1320	990
Schott Solar	ALD	40	30	130	98	250	188	350	263	450	338
SolarWorld	Varied	220	165	270	203	450	338	1000	750	1250	938
SUMCO	NA	20	15	50	38	80	60	100	75	200	150
Wafer Works	NA			100	75	200	150	200	150	200	150
Total		1089	817	1597	1198	2486	1865	3676	2757	4610	3458
China											
GCL Silicon	JYT, GT					14	11	360	270	855	641
Glory Silicon	GT					300	225	600	450	900	675
Jinggong	GT	12	9	50	38	50	38	75	56	100	75
LDK	JYT, GT	175	131	420	315	1200	900	2000	1500	2800	2100
ReneSola	ALD			20	15	50	38	100	75	150	113
Trina	GT					100	75	200	150	250	188
Yingli	GT			200	150	400	300	600	450	900	675
Total		187	140	690	518	2114	1586	3935	2951	5955	4466
Other		120	90	135	101	271	203	179	134	249	186
Total Worldwide Estimate		1396	1047	2422	1816	4871	3653	7790	5843	10814	8110

Source: Company documents, PJC estimates

MANAGEMENT PROFILES

- **CEO, Director and President** Thomas M. Zarrella joined GT Solar as President and COO in August 2004. He has >25 years experience spanning many facets of technology manufacturing. Prior to joining GT, Mr. Zarrella served as head of operations at Schott Solar AG.
- **CFO** Robert W. Woodbury was appointed Chief Financial Officer of GT Solar in January 2008. Prior to joining GT, Mr. Woodbury served as executive VP and Chief Financial Officer at Brooks Automation, Inc.
- **Vice President, General Counsel & Secretary** Edwin L. Lewis joined GT Solar in November 2007 and was appointed secretary of GT Solar in February 2008. Prior to joining GT Solar, Mr. Edwin was senior VP, General Counsel of Photonics Inc.
- **Vice President, Silicon Development** David W. Keck joined GT in April 2006. Besides operating his own consulting business prior to joining GT, Mr. Keck served as Vice President of Business Development, Plant Manager and Operations Manager at Advanced Silicon Materials Incorporated (ASIMI) and has experience in producing silane gas and polysilicon.
- **Vice President, Operations** John Tattersfield was appointed VP of operations in August 2007 and has served in various capacities at Instron Corporation, a division of ITW Inc. (ITW), a diversified international manufacturer.

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Income Statement (\$Mil.)

9/2/2008

		Jun-08	Sep-08	Dec-08	Mar-09		Jun-09	Sep-09	Dec-09	Mar-10		
FY Ending March:	2008A	1Q09A	2Q09	3Q09	4Q09	2009E	1Q10	2Q10	3Q10	4Q10	2010E	2011E
Revenues	244.1	57.1	129.3	232.8	194.3	613.4	174.4	137.7	246.4	368.4	926.9	1,443.3
COGS	151.7	32.8	76.5	145.5	121.6	376.4	108.8	79.5	150.1	219.1	557.5	878.2
Gross Profit	92.3	24.3	52.8	87.3	72.7	237.0	65.6	58.2	96.3	149.3	369.4	565.0
Operating Expenses	45.4	15.4	18.3	19.0	20.0	72.6	21.0	22.0	23.0	24.0	90.0	106.0
R&D	10.5	3.8	4.5	5.0	5.5	18.8	6.0	6.5	7.0	7.5	27.0	35.0
SG&A	34.9	11.6	13.8	14.0	14.5	53.8	15.0	15.5	16.0	16.5	63.0	71.0
EBITDA	51.0	10.0	35.7	69.5	53.9	169.2	45.9	37.6	74.7	126.7	284.8	466.4
D&A	4.1	1.1	1.2	1.2	1.3	4.8	1.3	1.3	1.4	1.4	5.4	7.4
Operating Profit , EBIT	46.9	8.9	34.5	68.3	52.7	164.4	44.6	36.2	73.3	125.3	279.4	459.0
Non Operating Expenses (Interest/F-cx)	(3.6)	(0.4)	0.1	(0.5)	(1.0)	(1.8)	(0.5)	(0.5)	(0.5)	(0.5)	(2.0)	(2.0)
Pretax Income	50.6	9.3	34.4	68.8	53.7	166.2	45.1	36.7	73.8	125.8	281.4	461.0
Income tax Expense (Benefit)	14.5	3.4	12.5	24.9	19.4	60.2	15.8	12.8	25.8	44.0	98.5	161.4
Non-GAAP Net earnings	36.1	5.9	21.9	43.9	34.2	105.9	29.3	23.9	48.0	81.8	182.9	299.7
Non-GAAP EPS	0.25	\$0.04	\$0.15	\$0.29	\$0.23	\$0.71	\$0.20	\$0.16	\$0.32	\$0.54	\$1.22	\$1.97
GAAP Net Income Reported	36.1	5.1	21.9	43.9	34.2	105.1	29.3	23.9	48.0	81.8	182.9	299.7
GAAP EPS Reported	0.25	\$0.03	\$0.15	\$0.29	\$0.23	\$0.71	\$0.20	\$0.16	\$0.32	\$0.54	\$1.22	\$1.97
Diluted Shares Outstanding	142.3	147.7	148.2	148.7	149.2	148.5	149.7	150.2	150.7	151.2	150.5	152.5

Margin

COGS	62.2%	57.4%	59.2%	62.5%	62.6%	61.4%	62.4%	57.7%	60.9%	59.5%	60.1%	60.9%
Gross Margin	37.8%	42.6%	40.8%	37.5%	37.4%	38.6%	37.6%	42.3%	39.1%	40.5%	39.9%	39.1%
EBITDA	20.9%	17.6%	27.6%	29.9%	27.8%	27.6%	26.3%	27.3%	30.3%	34.4%	30.7%	32.3%
R&D	4.3%	6.7%	3.5%	2.1%	2.8%	3.1%	3.4%	4.7%	2.8%	2.0%	2.9%	2.4%
SG&A	14.3%	20.2%	10.6%	6.0%	7.5%	8.8%	8.6%	11.3%	6.5%	4.5%	6.8%	4.9%
EBIT	19.2%	15.6%	26.7%	29.3%	27.1%	26.8%	25.6%	26.3%	29.8%	34.0%	30.1%	31.8%
Pretax Income	20.7%	16.3%	26.6%	29.6%	27.6%	27.1%	25.9%	26.7%	30.0%	34.1%	30.4%	31.9%
Net Earnings	14.8%	10.4%	17.0%	18.8%	17.6%	17.3%	16.8%	17.3%	19.5%	22.2%	19.7%	20.8%
Effective tax rate	28.6%	36.2%	36.2%	36.2%	36.2%	36.2%	35.0%	35.0%	35.0%	35.0%	35.0%	35.0%

Y/Y Growth

Total Revenue	305.9%	271.7%	58.1%	1479.7%	47.0%	151.3%	205.5%	6.5%	5.8%	89.7%	51.1%	55.7%
Gross Profit	287.4%	356.5%	78.3%	4902.9%	30.4%	156.6%	169.9%	10.4%	10.3%	105.5%	55.9%	53.0%
EBITDA	184.5%	-445.6%	76.9%	-982.6%	29.7%	232.0%	357.2%	5.3%	7.4%	134.8%	68.3%	63.8%
EBIT	2634.2%	NA	79.7%	NA	30.2%	250.3%	399.7%	5.0%	7.4%	137.9%	70.0%	64.3%
Net Earnings	NA	NA	28.4%	NA	20.0%	193.4%	393.9%	8.8%	9.4%	139.0%	72.6%	63.8%
EPS	NA	NA	23.3%	NA	14.4%	181.2%	387.3%	7.4%	7.9%	135.8%	70.4%	61.7%

Q/Q Growth

Revenue	-56.8%	126.4%	80.1%	-16.6%		-10.2%	-21.0%	78.9%	49.5%
Gross Profit	-56.4%	117.1%	65.5%	-16.8%		-9.7%	-11.2%	65.5%	55.0%
EBITDA	-75.9%	255.3%	94.9%	-22.4%		-14.9%	-18.2%	98.9%	69.6%
EBIT	-77.9%	286.7%	98.0%	-22.9%		-15.3%	-18.8%	102.5%	70.8%
Net Earnings	-79.2%	269.6%	100.0%	-22.0%		-14.3%	-18.6%	101.1%	70.4%
EPS	-80.0%	268.4%	99.3%	-22.3%		-14.6%	-18.8%	100.4%	69.8%

	CY08E
Rev	\$551.3
GM	39.9%
GAAP EPS	\$0.68

	CY09E
Rev	\$752.8
GM	38.9%
GAAP EPS	\$0.90

For up-to-date disclosure info on this company, please visit
<http://www.piperjaffray.com/researchdisclosures>

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Quarterly Balance Sheet (\$Mil.)

	Mar-08	Jun-08	Sep-08	Dec-08	Mar-09	Jun-09	Sep-09	Dec-09	Mar-10
FY Ending December:	4Q08A	1Q09A	2Q09	3Q09	4Q09	1Q10	2Q10	3Q10	4Q10
Cash and cash equivalents	219	155	101	124	207	244	303	301	346
Deferred Revenue									
Accounts Receivable, net	62	38	79	103	76	78	69	82	86
Inventory	38	64	102	81	68	60	44	67	73
Deferred Costs	105	144	151	158	166	170	178	187	196
Advances on Inventory Purchases	78	121	122	123	125	125	125	125	125
Deferred Income taxes	30	49	49	50	50	51	51	52	52
Prepaid expenses & Other current assets	7	6	6	6	6	6	6	6	6
Asset held for sale									
Total Current Assets	538	576	610	645	697	733	777	820	885
Property and equipment, net	10	14	15	15	16	16	17	17	17
Other Assets	0	0	0	0	0	0	0	0	0
Intangibles	52	51	51	51	51	52	53	53	53
Total Assets	601	641	676	711	764	801	846	890	955
Accounts Payable	38	50	38	73	61	54	40	50	73
Accrued liabilities and salaries	39	36	40	20	20	20	21	21	21
Customer deposits	264	307	304	301	298	295	292	289	286
Debt and obligation, current portion									
Deferred Revenue	164	235	240	230	232	232	200	180	180
Liability held for sale									
Other current liabilities									
Total Current Liabilities	505	628	622	624	611	602	552	540	560
Total Long Term Debt									
Long-Term Portion Of Bank Loans									
Convertible Debt									
Other	4	4	22	12	43	60	131	139	102
Total Shareholders' Equity	92	10	32	76	110	139	163	211	293
Total Liabilities and Shareholders' Equity	601	641	676	711	764	801	846	890	955

Important Research Disclosures



Notes: The boxes on the Rating and Price Target History chart above indicate the date of the Research Note, the rating, and the price target. Each box represents a date on which an analyst made a change to a rating or price target, except for the first box, which may only represent the first Note written during the past three years.

Legend:

I: Initiating Coverage

R: Resuming Coverage

T: Transferring Coverage

D: Discontinuing Coverage

S: Suspending Coverage

OP: Outperform (Piper Jaffray discontinued use of the OP, MP and UP ratings on November 15, 2007)

MP: Market Perform

UP: Underperform

B: Buy

N: Neutral

S: Sell

AL On/AL Off: Placed on/removed from the Alpha List maintained by Piper Jaffray

NA: Not Available

UR: Under Review

GP On/GP Off: Placed on/removed from one of the Guided Portfolios maintained by Piper Jaffray (Piper Jaffray discontinued the Guided Portfolios in August 2006.)

Distribution of Ratings/IB Services Piper Jaffray				
Rating	Count	Percent	IB Serv./Past 12 Mos.	
			Count	Percent
BUY [B]	333	55.59	81	24.32
HOLD [N]	235	39.23	28	11.91
SELL [S]	31	5.18	0	0.00
Short-Term Buy [Alpha List]	21	3.51	6	28.57

Note: Distribution of Ratings/IB Services shows the number of companies currently in each rating category from which Piper Jaffray and its affiliates received compensation for investment banking services within the past 12 months. NASD and NYSE rules require disclosure of which ratings most closely correspond with "buy," "hold," and "sell" recommendations. Accordingly, Buy corresponds most closely with buy, Neutral with hold, and Sell with sell. Alpha List is a short-term buy and is in addition to a 12-month rating. See Rating Definitions below.

Important Research Disclosures

Analyst Certification — Jesse W. Pichel, Sr Research Analyst — Torben Sommer, Sr Research Analyst

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Companies assigned to the Alpha List may have a 12-month rating of Buy, Neutral or Sell but, as a result of particular near-term catalysts or market conditions, the analyst chooses to emphasize the stock's potential for near-term appreciation. This short-term rating is separate from, and may be directionally different than, the fundamental 12-month rating and no specific price target is assigned.

- **Buy (B):** Anticipate total return appreciation generally in excess of 10% over the next 12 months.
 - **Neutral (N):** Anticipate limited total return (general appreciation less than 10% or decline less than 5%) over the next 12 months.
 - **Sell (S):** Anticipate negative total return generally in excess of 5% over the next 12 months.
 - **Alpha List (AL):** Anticipate appreciation in excess of 5% over the next 90 days as a result of a near-term catalyst or market event.
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 - **Low:** The stock price has moved up or down by more than 10% in a month in fewer than 8 of the past 24 months.
 - **Medium:** The stock price has moved up or down by more than 20% in a month in fewer than 8 of the past 24 months.
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