



COMPANY UPDATE

GT Advanced Technologies Inc (GTAT)

Buy

Equity Research

Not all about Apple - more value in the "core"; target up to \$24; Buy

What's changed

We believe investor focus on GTAT's Apple opportunity – a key part of our Buy thesis – is well deserved, but has created a dynamic in which "core" equipment is underappreciated. We continue to see a next-gen iPhone in 2H14 worth \$15/share alone in a base-case with an upside case of over \$25. Additionally, we are incrementally more positive on GTAT's ability to monetize new equipment technologies – for which the company has exhibited a solid track record historically (Exhibit 6) – and we estimate about \$0.60 of EPS power by 2016, or a potential \$5-\$10 of value per share.

Implications

While sentiment on GTAT skews positive overall, our investor feedback – plus high short interest (27% of float) – suggests skepticism still remains healthy, in our view. Against this backdrop, we believe recent Apple-related data points continue to trend positive and with our 2015E-16E estimates moving higher on the back of new equipment opportunities, we reiterate our Buy on GTAT with c.40% upside to our new \$24, 12-month price target.

The Apple mosaic is building momentum. In recent weeks, we see a positive read-across for GTAT from (1) sapphire processing equipment vendors in Europe – we believe for display covers – plus (2) reports of more Apple-related sapphire developments (e.g. fab expansion, patent).

Deep dive suggests upside in equipment. We raise our 2015-16E EPS to \$0.98/\$1.94 solely on higher equipment volumes. On top of a potential poly capex recovery, we see \$300-\$400mn of "new" equipment upside by 2016 owing to monocrystalline tools and greenfield technology (Hyperion).

Valuation

We raise our 12-month price target to \$24 (vs. \$20) to reflect our higher earnings estimates; it is DCF-based with a 12% cost of equity (unchanged).

Key risks

Customer concentration, volume/cost target execution, capex cycle.

INVESTMENT LIST MEMBERSHIP

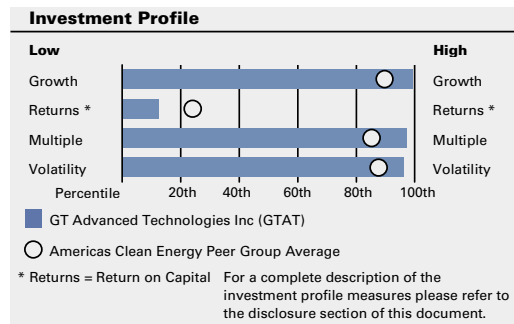
Americas Buy List

Coverage View: Neutral

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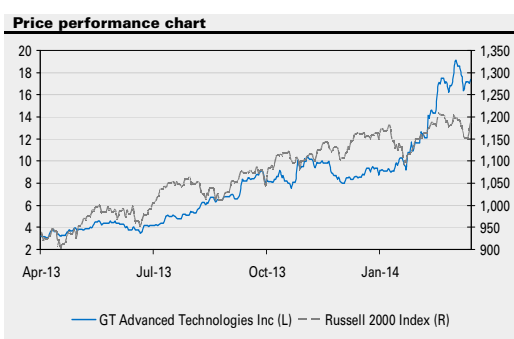
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Key data	Current
Price (\$)	17.38
12 month price target (\$)	24.00
Market cap (\$ mn)	2,190.7

	12/13	12/14E	12/15E	12/16E
Revenue (\$ mn) New	299.0	694.1	1,291.2	1,882.1
Revenue (\$ mn) Old	299.0	694.1	1,230.5	1,513.6
EPS (\$) New	(0.32)	0.16	0.98	1.94
EPS (\$) Old	(0.32)	0.16	0.96	1.46
P/E (X)	NM	109.4	17.7	9.0
EV/EBITDA (X)	NM	25.5	9.2	4.9
ROE (%)	NM	NM	26.2	41.4

	12/13	3/14E	6/14E	9/14E
EPS (\$)	(0.23)	(0.23)	(0.09)	0.08



Share price performance (%)	3 month	6 month	12 month
Absolute	99.4	98.9	446.5
Rel. to Russell 2000 Index	95.2	81.9	331.6

Source: Company data, Goldman Sachs Research estimates, FactSet. Price as of 4/01/2014 close.

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GT Advanced Technologies Inc: Summary Financials

Profit model (\$ mn)	12/13	12/14E	12/15E	12/16E	Balance sheet (\$ mn)	12/13	12/14E	12/15E	12/16E
Total revenue	299.0	694.1	1,291.2	1,882.1	Cash & equivalents	498.2	266.6	339.3	547.1
Cost of goods sold	(186.7)	(428.8)	(828.4)	(1,192.5)	Accounts receivable	12.4	34.7	103.3	150.6
SG&A	(84.3)	(85.0)	(99.0)	(118.0)	Inventory	39.1	104.1	193.7	282.3
R&D	(83.0)	(83.0)	(90.0)	(94.0)	Other current assets	32.0	68.8	128.1	186.7
Other operating profit/(expense)	(5.7)	0.0	0.0	0.0	Total current assets	581.6	474.3	764.4	1,166.7
ESO expense	--	--	--	--	Net PP&E	209.8	707.8	698.6	693.3
EBITDA	(60.8)	97.3	273.7	477.6	Net intangibles	95.9	84.0	72.1	60.2
Depreciation & amortization	(30.3)	(98.5)	(123.3)	(137.1)	Total investments	1.3	0.0	0.0	0.0
EBIT	(91.1)	(1.2)	150.5	340.5	Other long-term assets	298.6	333.3	363.2	392.7
Net interest income/(expense)	(31.5)	(8.1)	(8.8)	(6.9)	Total assets	1,187.3	1,599.5	1,898.3	2,313.0
Income/(loss) from associates	0.0	0.0	0.0	0.0	Accounts payable	77.3	30.9	75.2	105.4
Others	0.1	0.0	0.0	0.0	Short-term debt	0.0	0.0	0.0	0.0
Pretax profits	(122.5)	(9.4)	141.7	333.6	Other current liabilities	98.4	141.2	225.4	300.4
Provision for taxes	39.7	0.0	(35.4)	(83.4)	Total current liabilities	175.7	172.2	300.6	405.8
Minority interest	0.0	0.0	0.0	0.0	Long-term debt	283.9	283.9	283.9	283.9
Net income pre-preferred dividends	(82.8)	(9.4)	106.2	250.2	Other long-term liabilities	222.8	222.3	266.4	305.7
Preferred dividends	0.0	0.0	0.0	0.0	Total long-term liabilities	506.7	506.2	550.3	589.6
Net income (pre-exceptionals)	(82.8)	(9.4)	106.2	250.2	Total liabilities	854.9	1,256.4	1,429.0	1,573.5
Post tax exceptionals	43.9	31.9	39.9	39.9	Preferred shares	0.0	0.0	0.0	0.0
Net income (post-exceptionals)	(38.9)	22.5	146.1	290.1	Total common equity	332.4	343.1	469.3	739.5
EPS (basic, pre-exception) (\$)	(0.68)	(0.07)	0.71	1.67	Minority interest	0.0	0.0	0.0	0.0
EPS (diluted, pre-exception) (\$)	(0.68)	(0.07)	0.71	1.67	Total liabilities & equity	1,187.3	1,599.5	1,898.3	2,313.0
EPS (basic, post-exception) (\$)	(0.32)	0.16	0.98	1.94	Additional financials	12/13	12/14E	12/15E	12/16E
EPS (diluted, post-exception) (\$)	(0.32)	0.16	0.98	1.94	Net debt/equity (%)	(64.9)	5.0	(11.8)	(35.6)
Common dividends paid	--	--	--	--	Interest cover (X)	(2.9)	(0.1)	11.6	26.1
DPS (\$)	0.00	0.00	0.00	0.00	Inventory days	168.5	61.0	65.6	72.8
Dividend payout ratio (%)	0.0	0.0	0.0	0.0	Receivable days	22.1	12.4	19.5	24.6
Growth & margins (%)	12/13	12/14E	12/15E	12/16E	BVPS (\$)	2.71	2.42	3.16	4.94
Sales growth	(59.2)	132.2	86.0	45.8	ROA (%)	(7.6)	(0.7)	6.1	11.9
EBITDA growth	(2,812.7)	260.0	181.3	74.5	CROCI (%)	(5.6)	17.4	23.0	31.3
EBIT growth	(198.1)	98.6	NM	126.3	Dupont ROE (%)	(24.9)	(2.7)	22.6	33.8
Net income (pre-exception) growth	(30.9)	88.7	NM	135.5	Margin (%)	(27.7)	(1.3)	8.2	13.3
EPS growth	(27.0)	90.3	1,185.6	133.9	Turnover (X)	0.3	0.4	0.7	0.8
Gross margin	37.6	38.2	35.8	36.6	Leverage (X)	3.6	4.7	4.0	3.1
EBITDA margin	(20.3)	14.0	21.2	25.4	Free cash flow per share (\$)	(1.62)	(4.50)	0.49	1.39
EBIT margin	(30.5)	(0.2)	11.7	18.1	Free cash flow yield (%)	(29.6)	(25.9)	2.8	8.0
Cash flow statement (\$ mn)	12/13	12/14E	12/15E	12/16E					
Net income	(82.8)	(9.4)	106.2	250.2					
D&A add-back (incl. ESO)	30.3	98.5	123.3	137.1					
Minority interest add-back	0.0	0.0	0.0	0.0					
Net (inc)/dec working capital	(124.4)	(159.0)	(73.0)	(75.7)					
Other operating cash flow	17.8	16.1	18.3	16.1					
Cash flow from operations	(159.1)	(53.7)	174.8	327.8					
Capital expenditures	(39.9)	(584.7)	(102.1)	(120.0)					
Acquisitions	0.0	0.0	0.0	0.0					
Divestitures	0.0	0.0	0.0	0.0					
Others	131.7	1.3	0.0	0.0					
Cash flow from investing	91.8	(583.4)	(102.1)	(120.0)					
Dividends paid (common & pref)	0.0	0.0	0.0	0.0					
Inc/(dec) in debt	156.1	405.5	0.0	0.0					
Other financing cash flows	(8.6)	0.0	0.0	0.0					
Cash flow from financing	147.4	405.5	0.0	0.0					
Total cash flow	80.1	(231.6)	72.7	207.8					

Note: Last actual year may include reported and estimated data.

Source: Company data, Goldman Sachs Research estimates.

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Not all about Apple - more value in the "core"; target to \$24; Buy

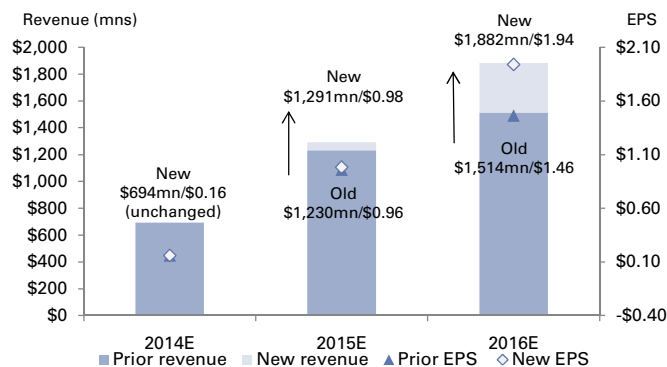
Apple (AAPL, Buy) is covered by Bill Shope

We believe investor focus on GTAT's Apple opportunity – a key part of our thesis – is well deserved, but has created a dynamic in which the company's "core" equipment segment is underappreciated. We continue to see a next-gen iPhone worth \$15/share alone in a base-case with an upside case of over \$25. Additionally, we are more positive on GTAT's ability to monetize new equipment technologies – for which the company has exhibited a strong track record historically – and we estimate roughly \$0.60 of EPS power by 2016, or a potential \$5-\$10 of value per share. We reiterate our Buy rating on GTAT with c.40% upside to our new \$24, 12-month price target.

Deep dive suggests more upside in equipment; raise estimates

Following a deep dive on GTAT's next-gen equipment portfolio (starting on page 7), we raise our out-year estimates, which had largely not reflected incremental revenue growth outside of polysilicon. Our 2015/16E revenue goes up by 5%/24%, respectively, which drives our EPS estimates to \$0.98/\$1.94 (vs. \$0.96/\$1.46 prior). By 2016, we estimate equipment-only EPS power for GTAT will be roughly \$0.60, which we believe represents \$5-\$10 of potential value per share assuming P/E multiples in the 12X-15X range (Exhibit 2).

Exhibit 1: We raise 2015E-16E estimates solely on higher equipment volumes, particularly from new technology...
GTAT revenue/eps, new vs. old



Source: Company data, Goldman Sachs Global Investment Research.

Exhibit 2: ...and we see EPS power from equipment of \$0.60 by 2016, or \$5-\$10 of potential value per share
2016 equipment EPS and value sensitivity

2016 Incremental EPS		Low	Base	High
Avg. GM %	26%	\$0.18	\$0.30	\$0.43
	30%	\$0.27	\$0.45	\$0.63
	34%	\$0.36	\$0.60	\$0.84
	38%	\$0.45	\$0.75	\$1.05
	41%	\$0.55	\$0.90	\$1.25
2016 Equipment value per share				
P/E Multiple	10.0x	\$1.76	\$3.00	\$4.25
	12.0x	\$3.22	\$5.40	\$7.59
	14.0x	\$5.05	\$8.40	\$11.75
	16.0x	\$7.25	\$12.00	\$16.75
	18.0x	\$9.82	\$16.20	\$22.57

*Low equates to a 24%, Base a 44%, and High a 64% average share of the market opportunity for each equipment technology.

Source: Company data, Goldman Sachs Global Investment Research.

Exhibit 3: We see highest upside potential in 2016 from "new" equipment: monocrystalline tools and Hyperion
Equipment revenue by segment

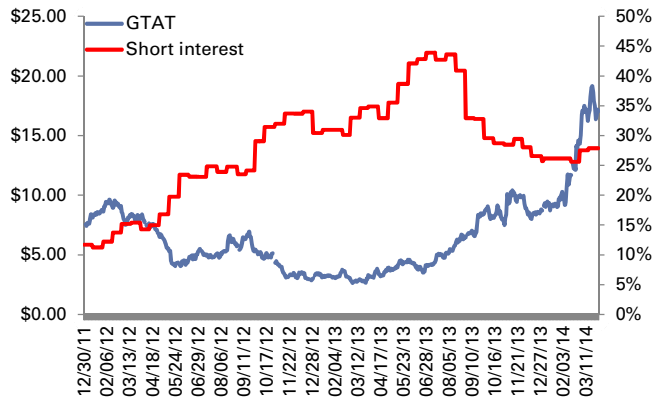
Next generation equip.	2014E			2015E			2016E		
	Current	Prior	Variance	Current	Prior	Variance	Current	Prior	Variance
DSS G8 (multi PV)	\$20	\$20	0%	\$40	\$30	34%	\$120	\$20	500%
HiCz (mono PV)	\$0	\$0	-	\$33	\$0	-	\$248	\$0	-
SDR (polysilicon)	\$150	\$150	0%	\$189	\$190	-1%	\$324	\$360	-10%
Sapphire equipment	\$25	\$25	0%	\$53	\$53	0%	\$95	\$95	0%
Sapphire Materials	\$500	\$500	0%	\$958	\$958	0%	\$1,039	\$1,039	0%
Hyperion	\$0	\$0	-	\$19	\$0	-	\$57	\$0	-
Total	\$694	\$694	0%	\$1,291	\$1,230.5	5%	\$1,882	\$1,514	24%

Source: Company data, Goldman Sachs Global Investment Research.

Investor sentiment is positive, but not overly so, in our view...

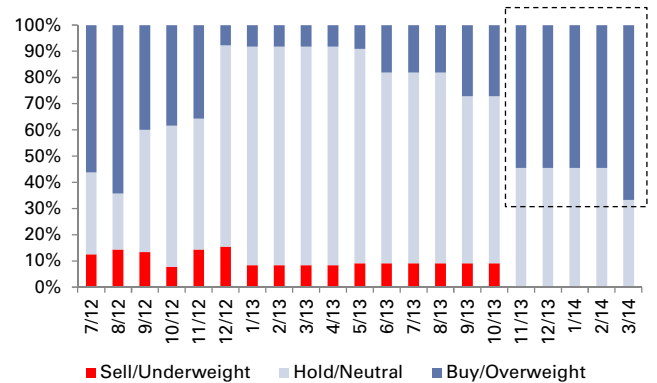
GTAT has seen steady short covering, as well as an improvement in sell-side ratings distribution, over the past several months as the stock has marched higher. That said, we note that short interest, at 27% of float (or 35.2mn shares), remains elevated while our investor discussions suggest a healthy level of skepticism on the stock persists owing to: (1) uncertainty around the Apple relationship and, in particular, which device will use GTAT’s materials; and (2) limited visibility into GTAT’s execution ability on volumes and costs, among other concerns.

Exhibit 4: While short interest has fallen from its mid-2013 peak, it remains elevated at 27% of float
GTAT vs. short interest as % of float



Source: FactSet.

Exhibit 5: Sell-side ratings are trending positive, though nearly 1/3 are still at the equivalent of a Neutral rating
GTAT sell-side ratings distribution



Source: FactSet.

...even as recent data points augur favorably for Apple opportunity

Though investors continue to debate GTAT’s positioning for an Apple iPhone opportunity in 2014, if not longer-term, we believe several recent data points continue to build positive momentum around the thesis that GTAT will supply into a next-gen iPhone later this year:

- On March 28, Manz Automation (Not Covered) – a major laser equipment vendor (e.g. sapphire cutting) – noted the receipt of two large orders for its display segment in 1Q14, representing €95mn or roughly half of its entire display revenue from 2013 revenue, further noting a “well known” US-based company is a major customer.
- On March 24, Meyer Burger (Not Covered) – a major equipment vendor of diamond wire saws (sapphire ingot slicing) – provided high-level details on its slurry and wire saw opportunity for sapphire cover displays for handsets on its 4Q13 earnings call, mentioning that it cannot disclose much detail in the current environment.
- On March 28, AppleInsider reported that Apple and GTAT could be expanding the size of the Mesa, AZ manufacturing facility where GTAT is currently in the process of ramping up production of sapphire materials for Apple. While not confirmed by either company, AppleInsider cites “higher yields for an as-yet-unknown component” as the potential driver of the expansion.
- On March 27, AppleInsider reported on an Apple patent for “oleophobic coating on sapphire” which would enable repellent coating on a touchscreen display without impacting the hardness of sapphire that is a key attribute of the material.

Solid track record of rapidly commercializing equipment technology

DSS: directional solidification system

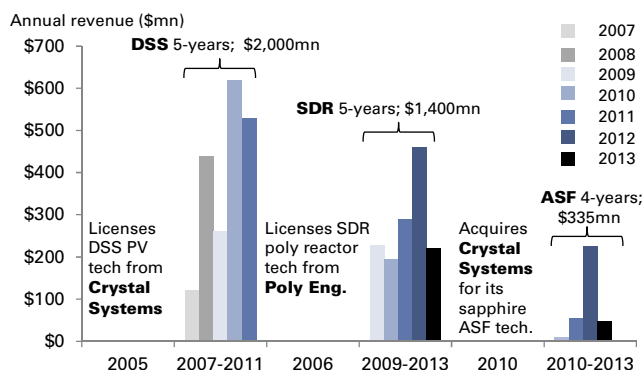
SDR: silicon deposition reactor

ASF: advanced sapphire furnace

GTAT has successfully acquired and/or licensed three equipment technologies, to date: (1) multicrystalline furnaces for solar (DSS), (2) polysilicon reactors for solar (SDR); and (3) sapphire furnaces for LED (ASF). More importantly, the company has exhibited a very strong track record in monetizing and growing the annual sales from these technologies by \$200mn to \$600mn within a few years, depending on product line (Exhibit 6). While we acknowledge past performance does not guarantee future success, we are encouraged by GTAT’s track record and see it boding well for its efforts in (1) monetizing its latest generation solar and LED tools (Exhibit 7), and (2) commercializing its newer product portfolio for more emerging applications.

Exhibit 6: DSS, SDR and ASF acquisitions/licensing agreements led to material revenue growth for GTAT...

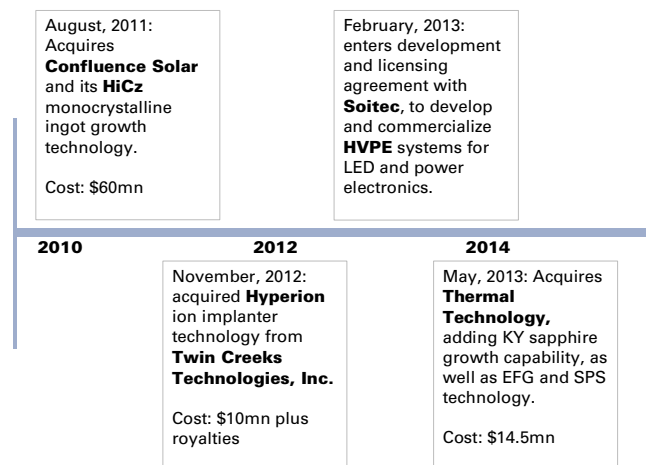
Annual revenue by equipment product line



Source: Company data.

Exhibit 7: ...while we see recent acquisitions of new technologies (HiCz, Hyperion, HVPE) as key future opportunities

Recent GTAT acquisitions

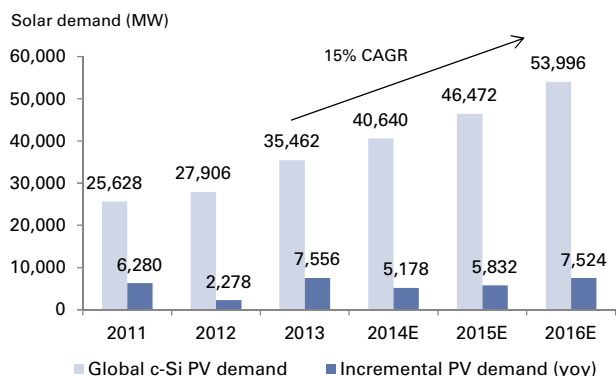


Source: Company data, Goldman Sachs Global Investment Research.

Polysilicon – we remain positive on a potential capex recovery

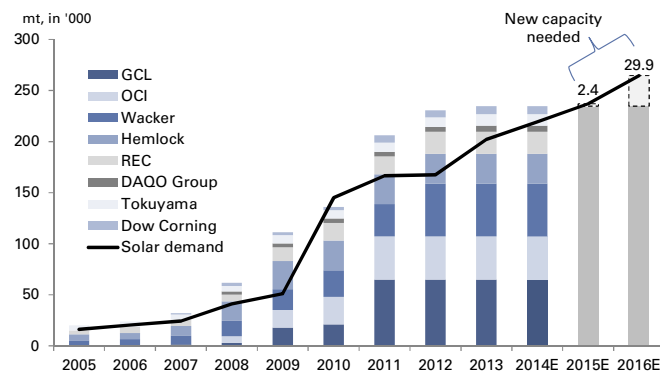
We continue to see the potential for an emerging polysilicon capex cycle benefitting GTAT’s core equipment business segment, as global solar demand growth tightens the polysilicon supply/demand imbalance that has capped new capacity investment over the past few years. We estimate roughly 5-8GW of incremental c-Si module demand driving 30,000mt of additional solar grade polysilicon requirements over the next two years.

Exhibit 8: We estimate 5GW-8GW of incremental solar demand growth per annum from 2013-2016...
Solar c-Si demand (excl. thin film), 2011-2016E



Source: Goldman Sachs Global Investment Research.

Exhibit 9: ...which we estimate would require over 30,000mt of new polysilicon supply through 2016
Est. polysilicon supply required to meet demand



Source: Goldman Sachs Global Investment Research.

We track 150k MT or roughly \$2.0bn in announced polysilicon projects. GTAT is a leading polysilicon equipment supplier globally, with an estimated market share in excess of 50%. Given a strong backlog of announced capacity expansions, we expect additional project wins by GTAT to serve as a key catalyst moving forward. Notably, GTAT recently announced a \$336mn supply agreement (subject to financing) with Cosmos Chemicals for a 25,000mt polysilicon production facility. The project is expected to utilize GTAT’s latest generation tools and, when finalized, should add to the company’s \$300mn poly backlog.

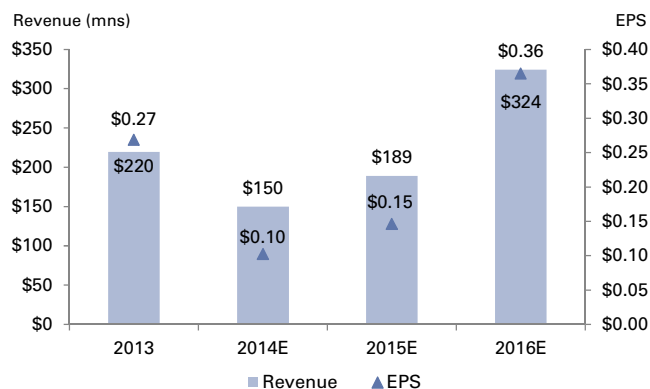
Exhibit 10: Announced polysilicon capacity expansions equal an over \$2bn opportunity; GTAT’s win with PMD/Cosmos will utilize its next generation CVD reactor and TCS

Company	Location	Size (mt)	# of reactors	\$ value (mns)	GTAT customer
Middle East					
PTC	Al Jubail	3,039	3	\$42	x
IDEA	Yanbu	9,072	9	\$122	
PMD/COSMOS	Al Jubail	9,072	9	\$122	x
QSTec (SolarWorld)	Ras Laffan	7,257	7	\$98	
Malaysia					
PMD/COSMOS	Sarawak	25,000	25	\$336	x
Korea					
OCI	Gunsan	10,000	10	\$134	x
Hanwha Q CELLS	Yeosu	2,500	3	\$34	x
China					
GCL-Poly	Jiangsu	20,000	20	\$269	x
DAQO	Xinjiang	5,850	6	\$79	
Feng Wei	Inner Mongolia	3,000	3	\$40	
REC Silicon	Shaanxi	19,000	19	\$255	
Taiwan					
Powertec	Changbin Industrial Park	20,000	20	\$269	x
Total		150,290	151	\$2,023	

Source: Company data, Goldman Sachs Global Investment Research.

A \$1.0bn TAM over the next three years for next-gen SDR-1K polysilicon reactors. Based on GTAT’s market sizing – which is admittedly back-end loaded – we estimate 2014E-16E polysilicon revenue/EPS of \$150mn/\$189mn/\$324mn and \$0.10/\$0.15/\$0.36, respectively, with upside potential to \$0.50-\$0.65 in 2016 EPS under a more bullish market share and margin scenario.

Exhibit 11: Our base case estimates GTAT reaches 70% share in polysilicon and close to \$0.40 of EPS...
Polysilicon revenue and EPS, 2013-2016E



Source: Company data, Goldman Sachs Global Investment Research.

Exhibit 12: ...with upside to \$0.50-\$0.65 under more bullish gross margin and market share assumptions
Polysilicon, 2016 EPS sensitivity

2016 Incremental EPS		Market share of TAM				
		50%	60%	70%	80%	90%
GM %	30%	\$0.16	\$0.19	\$0.22	\$0.25	\$0.29
	35%	\$0.21	\$0.25	\$0.29	\$0.33	\$0.38
	40%	\$0.26	\$0.31	\$0.36	\$0.41	\$0.47
	45%	\$0.31	\$0.37	\$0.43	\$0.49	\$0.56
	50%	\$0.36	\$0.43	\$0.50	\$0.57	\$0.65

Source: Company data, Goldman Sachs Global Investment Research.

Raising estimates on next generation equipment deep dive

Previously, we had given little credit in our model for GTAT’s new equipment opportunities, with only growth in polysilicon equipment revenue assumed in the out-years of our model. Following GTAT’s Technology Briefing in mid-March, and our analysis around select technology trends in key addressable markets (e.g. solar), we have performed a sensitivity analysis assuming different market share, gross margin, and commercialization timing outcomes across some of GTAT’s new product opportunities which we believe have the most near-term potential to see significant traction. Net/net, we are incrementally more positive on the ability for GTAT’s equipment business to be materially accretive to 2015-2016E revenue and EPS versus our prior expectations, and we dive into potential upside per product line below.

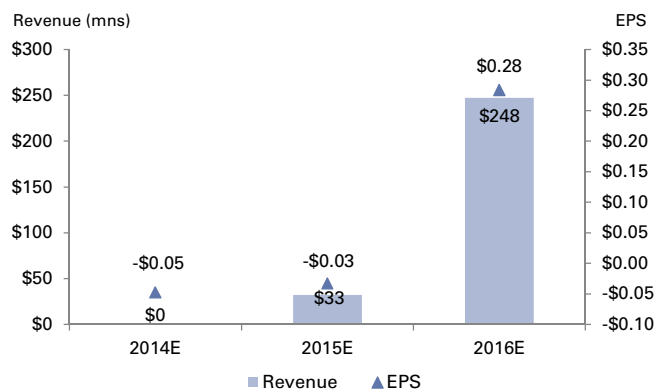
HiCz – taking advantage of a trend toward monocrystalline in solar

HiCz: continuously-fed Czochralski growth technology

We expect improving solar cell and module efficiency to be a key driver of future cost reductions, with the transition from multicrystalline to monocrystalline wafers/cells an emerging strategy by Tier 1 manufacturers. GTAT, through its August 2011 acquisition of Confluence Solar, has developed its HiCz tool that it believes will help enable a cost effective transition to monocrystalline.

While this product remains in the early stages of commercialization – with only one unit installed in the field today – GTAT expects its first commercial order in the next six months, a positive potential catalyst, in our view. More importantly, the company sees a \$1.6bn TAM for HiCz over the next three years. We estimate 2014-16E HiCz revenue/EPS of \$0mn/\$33mn/\$248mn and (\$0.05)/(\$0.03)/\$0.28, respectively, **with upside potential to \$0.40-\$0.60 in 2016 EPS under a more bullish market share and margin scenario.**

Exhibit 13: Our base case estimates HiCz achieves roughly 20% of its TAM by 2016 or \$0.28 in EPS...
HiCz revenue and EPS, 2013-2016E



Source: Company data, Goldman Sachs Global Investment Research.

Exhibit 14: ...with upside to \$0.40-\$0.60 under more bullish gross margin and market share assumptions
HiCz 2016 EPS sensitivity

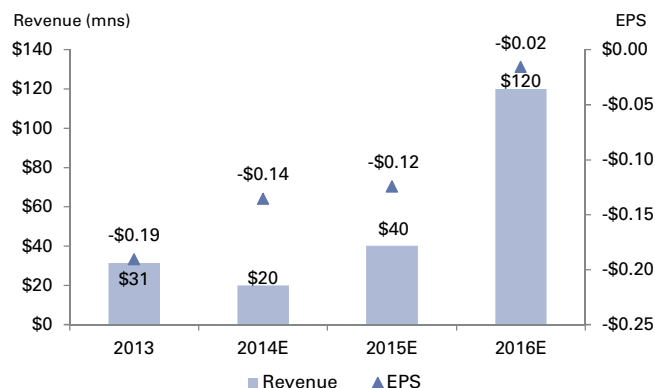
2016 Incremental EPS		Market share of TAM				
GM %		10%	15%	20%	25%	30%
		25%	\$0.09	\$0.13	\$0.18	\$0.22
30%	\$0.12	\$0.17	\$0.23	\$0.29	\$0.35	
35%	\$0.14	\$0.21	\$0.28	\$0.36	\$0.43	
40%	\$0.17	\$0.25	\$0.34	\$0.42	\$0.51	
45%	\$0.20	\$0.29	\$0.39	\$0.49	\$0.59	

Source: Company data, Goldman Sachs Global Investment Research.

Multicrystalline – still has some legs, though much less incremental

Roughly one year after GTAT announced it would exit the multicrystalline furnace business, upside in global solar demand, especially in China, has led to a revival of low-cost, multicrystalline capacity expansion. GTAT now sees a 2015/2016 DSS equipment sales cycle developing, with capacity additions split roughly 70/30 between multi and monocrystalline technology. The company’s new DSS Gen 8 tool, which can produce ingots representing >20MW of annual wafer capacity per annum at a lower cost/watt, looks to capitalize on this opportunity, which GTAT believes represents an \$800mn TAM over the next three years. We estimate 2014-16E DSS revenue/EPS of \$20mn/\$40mn/\$120mn and (\$0.14)/(\$0.12)/(\$0.02), respectively, **with upside potential to \$0.04-\$0.05 in 2016 EPS under a more bullish market share and margin scenario.**

Exhibit 15: Our base case estimates DSS Gen 8 achieves roughly 25% of its TAM by 2016, but is still an EPS loss...
DSS revenue and EPS, 2013-2016E



Source: Company data, Goldman Sachs Global Investment Research.

Exhibit 16: ...with upside to \$0.04-\$0.05 under more bullish gross margin and market share assumptions
DSS 2016 EPS sensitivity

2016 Incremental EPS		Market share of TAM				
GM %		15%	20%	25%	30%	35%
		25%	-\$0.04	-\$0.05	-\$0.07	-\$0.08
30%	-\$0.03	-\$0.03	-\$0.04	-\$0.05	-\$0.06	
35%	-\$0.01	-\$0.01	-\$0.02	-\$0.02	-\$0.02	
40%	\$0.01	\$0.01	\$0.01	\$0.01	\$0.01	
45%	\$0.02	\$0.03	\$0.04	\$0.04	\$0.05	

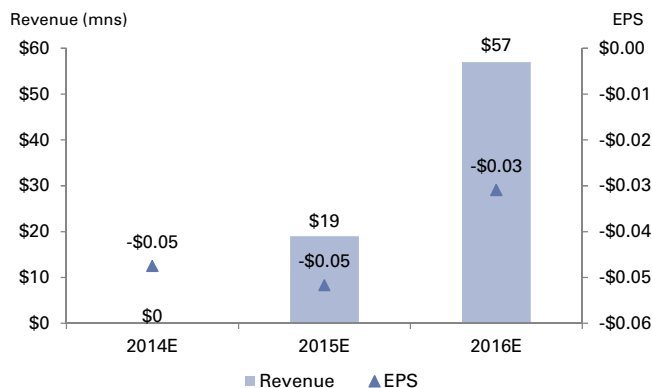
Source: Company data, Goldman Sachs Global Investment Research.

Hyperion – early stage, but substantial value potential by 2018

GTAT’s Hyperion ion implant technology, currently in its fourth generation, has broad applications across the silicon (solar), sapphire and silicon-carbide (LED) sectors. While

currently in the very early-stages of its market development, Hyperion represents the largest future TAM for GTAT, in our view, with a 200-250 tool market potentially materializing by 2018 according to the company. At an estimated ASP of \$4-\$15mn, this represents \$800-\$3,750mn in revenue potential. Assuming 150 tools by 2018, we estimate GTAT could see well over \$1 of EPS from Hyperion alone, with significantly more upside in more bullish margin and market share scenarios. We believe little, if any, of Hyperion's future value is currently being reflected in GTAT's shares. While this may be prudent given commercialization remains in the very early-stages, we view Hyperion as another potential upside lever to the GTAT investment case over the longer-term.

Exhibit 17: Our base case estimates Hyperion units remain limited in the near-term ...
Hyperion revenue and EPS , 2013-2016E



Source: Company data, Goldman Sachs Global Investment Research.

Exhibit 18: ...though significant upside potential exists by 2018 if GTAT can hit its 200-250 tool addressable market
Hyperion 2018 EPS sensitivity

2018 EPS sensitivity		Market share of TAM				
GM %		20%	40%	60%	80%	100%
		25%	\$0.33	\$0.66	\$0.99	\$1.32
30%	\$0.43	\$0.86	\$1.29	\$1.72	\$2.14	
35%	\$0.53	\$1.05	\$1.58	\$2.11	\$2.64	
40%	\$0.63	\$1.25	\$1.88	\$2.50	\$3.13	
45%	\$0.72	\$1.45	\$2.17	\$2.89	\$3.62	

Source: Company data, Goldman Sachs Global Investment Research.

Additional R&D in solar and LED create added future opportunities

GTAT has developed several other new products targeting applications in the solar and LED industries. While the near-term TAMs are relatively smaller and probability of commercial success difficult to predict at this time, they represent additional revenue opportunities for the company over the next several years, providing an upside lever to earnings estimates and GTAT's valuation, if successful.

- Merlin – new interconnect technology to lower solar system costs.** GTAT has developed a copper-based, interconnect technology that aims to reduce total solar system costs by >10% by (1) reducing silver usage by 80%, (2) improving cell conversion efficiency by 0.7%, (3) lowering cell-to-module losses; and (4) increasing installation efficiency. Currently, GTAT is operating a pilot line and is in the process of initial customer engagement, and expects to commission its first manufacturing line in 2H2014, with commercial availability targeted in 2015. The company noted that at 8%/12%/and 20% market adoption, Merlin would represent a \$400mn/>\$600mn and \$1.0bn revenue opportunity by 2018.
- HVPE/PVDNC – improving the capital efficiency of LED.** GTAT's HVPE and PVDNC technology aims to (1) improve LED cycle times versus MOCVD-only processes through a >50% reduction of GaN cycle time and a >30% reduction in overall Epi cycle times; (2) reduce the overall LED Epi stack cost by 25%; (3) reduce precursor costs by >50%; and (4) reduce total capex costs by >30%. The company expects to receive beta orders for both its HVPE and PVDNC tools in 2014, with the first beta tool shipments of HVPE in 4Q2014 and for PVDNC in 1Q2015, with volume launch targeted for 1Q2015 for HVPE and 2Q2015 for PVDNC. GTAT estimates a roughly \$50mn opportunity in 2015, growing to \$160mn by 2019.

HVPE: hydride vapor phase epitaxy

PVDNC: plasma vapor deposition of nano-columns

MOCVD: metallorganic chemical vapor deposition

Exhibit 19: GTAT annual estimate changes

\$ in millions, except per share data

Fiscal Year Ending December 31	Estimate revisions				Estimate revisions				Estimate revisions			
	2014E		Change		2015E		Change		2016E		Change	
	Current	Prior	Variance	Percent	Current	Prior	Variance	Percent	Current	Prior	Variance	Percent
PV	20.0	20.0	-	0%	72.7	30.0	42.7	142%	367.5	20.0	347.5	1738%
Polysilicon	150.0	150.0	-	0%	189.0	190.0	(1.0)	-1%	324.0	360.0	(36.0)	-10%
Sapphire	524.1	524.1	-	0%	1,010.5	1,010.5	-	0%	1,133.6	1,133.6	-	0%
Total revenue	\$694.1	\$694.1	-	0%	\$1,291.2	\$1,230.5	60.7	5%	\$1,882.1	\$1,513.6	368.5	24%
Total COGS	515.4	515.4	0.0	0%	939.8	894.2	45.6	5%	1,317.7	1,070.1	247.6	23%
Total gross profit	\$178.7	\$178.7	\$0.0	0%	\$351.4	\$336.3	\$15.1	4%	\$564.4	\$443.5	\$120.9	27%
Research and development	83.0	83.0	-	0%	90.0	90.0	-	0%	94.0	94.0	-	0%
Selling and marketing	16.0	16.0	-	0%	23.0	18.0	5.0	28%	32.0	20.0	12.0	60%
General and administrative	69.0	69.0	-	0%	76.0	71.0	5.0	7%	86.0	72.0	14.0	19%
Contingent consideration expense (income)	-	0.0	-	NM	-	0.0	-	NM	-	0.0	-	NM
Amortization of intangible assets	11.9	11.9	-	0%	11.9	11.9	-	0%	11.9	11.9	-	0%
Restructuring and other	-	0.0	-	NM	-	0.0	-	NM	-	0.0	-	NM
Total operating expenses	\$179.9	\$179.9	\$0.0	0%	\$200.9	\$190.9	\$10.0	5%	\$223.9	\$197.9	\$26.0	13%
Operating income	(\$1.2)	(\$1.2)	\$0.0	0%	\$150.5	\$145.4	\$5.1	3%	\$340.5	\$245.6	\$94.9	39%
+ Depreciation and amortization	98.5	98.5	-	0%	123.3	123.3	-	0%	137.1	137.1	-	0%
EBITDA	\$97.3	\$97.3	\$0.0	0%	\$273.7	\$268.7	\$5.1	2%	\$477.6	\$382.7	\$94.9	25%
Interest income	4.9	4.9	0.0	0%	4.2	4.2	(0.0)	-1%	6.1	6.1	0.1	1%
Interest expense	(13.0)	(13.0)	-	0%	(13.0)	(13.0)	-	0%	(13.0)	(13.0)	-	0%
Other, net	0.0	0.0	-	NM	0.0	0.0	-	NM	0.0	0.0	-	NM
Pretax income	(9.4)	(9.4)	0.0	0%	141.7	136.6	5.0	4%	333.6	238.6	95.0	40%
Provision (benefit) for income taxes	-	0.0	-	NM	35.4	34.2	1.3	4%	83.4	59.7	23.7	40%
Tax rate	0%	0%	0%	NM	25%	25%	0%	0%	25%	25%	0%	0%
Net income, continuing operations	(\$9.4)	(\$9.4)	\$0.0	0%	\$106.2	\$102.5	\$3.8	4%	\$250.2	\$179.0	\$71.2	40%
EPS (basic)	(\$0.07)	(\$0.07)	\$0.00	0%	\$0.71	\$0.69	\$0.03	4%	\$1.67	\$1.20	\$0.48	40%
Non-GAAP EPS (diluted)	\$0.16	\$0.16	\$0.00	0%	\$0.98	\$0.96	\$0.03	3%	\$1.94	\$1.46	\$0.48	33%
Shares -- basic	142.0	142.0	-	0%	148.6	148.6	-	0%	149.6	149.6	-	0%
Shares -- diluted	142.0	142.0	-	0%	148.6	148.6	-	0%	149.6	149.6	-	0%
Free Cash Flow Calculation												
Net cash provided by operating activities	(53.7)	(53.7)	0.0	0%	174.8	176.6	(1.8)	-1%	327.8	296.0	31.7	11%
less: Capex	(584.7)	(584.7)	-	0%	(102.1)	(102.1)	-	0%	(120.0)	(120.0)	-	0%
Free Cash Flow to Equity	(638.4)	(638.4)	0.0	0%	72.7	74.5	(1.8)	-2%	207.8	176.0	31.7	18%
plus: Net interest expense	(13.0)	(13.0)	-	0%	(9.8)	(9.8)	-	0%	(9.8)	(9.8)	-	0%
Free Cash Flow to the Firm	(651.4)	(651.5)	0.0	0%	62.9	64.7	(1.8)	-3%	198.0	166.3	31.7	19%
Free cash flow per share	(\$4.60)	(\$4.60)	\$0.00	0%	\$0.49	\$0.50	(\$0.01)	-2%	\$1.39	\$1.18	\$0.21	18%

Source: Company data, Goldman Sachs Global Investment Research.

Pricing and rating information: Apple Inc. (B/C, \$541.65)

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Reg AC

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