

Equities

2 April 2012 | 17 pages

A FiT-ting end to a growth industry?

German solar feed-in-tariffs finally determined by parliament

■ Industry Overview

- **Likely to impact global demand** — On 30 March, the German Bundestag passed the amended bill that will govern solar subsidies and installation levels out to 2017. The net effect is that a market that represented >30% of global demand in 2011 is likely to all-but disappear from 2013 onwards, leaving a gap in global demand.
- **IRR's reduced to unattractive levels** — We believe that these tariff reductions will reduce IRR's to low-single-digit levels for domestic installations, and to non-existent levels for large-scale installations. While some installations will remain post 2012 due to environmental or own-use justifications, we believe that overall installations in Germany will be severely limited.
- **Likely to impact global demand** — With other key markets such as Italy also examining support mechanisms as subsidy bills balloon, the global demand outlook for solar is likely to be weak. While other markets such as the US, China and India may offset some of this shortfall in demand, they will be hard-pressed to provide meaningful global growth. Moreover, some of these markets such as China and India are lower-priced markets, offering little respite to struggling manufacturers.
- **Overcapacity continues** — We forecast growth in installations of just 0.8% in 2012, basically flat at 24GW, and with this we estimate around 40GW of manufacturing capacity remaining, meaning severe overcapacity looks set to continue until the industry shake-out picks up pace. Accordingly we see limited scope for a let-up in the pricing pressure across the solar value chain.
- **Favour low-cost, diversified or equipment players** — With industry fundamentals remaining unattractive, we favour differentiated players such as Centrotherm (Buy 1H, TP €16, +61%) in Europe, Advanced Energy Industries (Buy 1H, TP \$16.5, +27%) and MEMC (Buy 1H, TP \$10, +171%) in the US, and Trina Solar (Buy, 1H, TP \$11, +53%) in Asia.

Jason Channell

+44-20-7986-8661
jason.channell@citi.com

North America

Timothy M Arcuri
timothy.arcuri@citi.com

Seth Tennant
seth.tennant@citi.com

Asia

Timothy Lam
timothy.lam@citi.com

See Appendix A-1 for Analyst Certification, Important Disclosures and non-US research analyst disclosures.

Citi Investment Research & Analysis is a division of Citigroup Global Markets Inc. (the "Firm"), which does and seeks to do business with companies covered in its research reports. As a result, investors should be aware that the Firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision.

Summary

With the new law on German solar feed-in-tariffs passed in the Bundestag, the uncertainty regarding the future of the industry there is over; so, however, is German demand, we believe. With IRR's set to fall to unattractive levels, we expect German installations post 2012 to be very limited, leading to a 'gap' in global demand that other countries may be hard pushed to fill. With continuing oversupply in manufacturing, and other key markets such as Italy also revisiting subsidy levels, we believe that the outlook for the industry and the majority of solar manufacturers continues to look bleak.

German demand to plummet post 2012

Amended changes to tariffs passed

On Thursday, 30 March 2012, the German Bundestag passed by a majority of 305 to 235 the amended bill that will govern solar Feed-in-Tariffs (FiT's) and targeted installation volumes out to 2017.

The bill has some important changes from the draft proposal put forward by the cabinet in February, though some of the more draconian changes were overruled by the coalition majority.

Cuts of 20-29%, with volume related adjustments

- Tariffs will be cut from 1 April by 20-29% depending on the size of the installation, with 1% per month base-level tariff cuts thereafter.
- Targeted installations of 2.5-3.5GW per annum will gradually reduce each year.
- Excesses/shortfalls vs. targeted installations will lead to adjustments to the 1% monthly reduction.
- Not all of the electricity generated by solar installations will be eligible to receive the FiT..
- A slightly longer grace period for previously approved installations has been allowed.

While the Green party had wanted the removal of unscheduled tariff cuts from the plans, and the introduction of low interest loans for the industry, these proposals were defeated.

Key changes from initial proposals: Monthly tariff cuts of 1% with volume-related adjustments are a slight increase from previous proposals, while the grace period for installations is longer. Domestic installations will now receive the FiT for a lower amount of electricity generated than previously planned.

2012 installations likely to be strong given extended grace period...

The extended grace period will likely mean that higher levels of installations will go through prior to the cuts, leading we believe to potential installations in 2012 in Germany of 5GW. This could be significantly higher, with the German chamber of industry & commerce forecasting 8GW, though we see this as unlikely given the lack of large-scale projects that would have gained approvals before the cut-off, and difficulty in gaining financing given the uncertainty.

...but this only makes future cuts worse, reducing IRR's levels where installations are unlikely to be material

These cuts will, we believe, make IRR's on larger-scale installations non-existent, and reduce IRR's on domestic installations to low-single-digit levels. While some may still install systems for environmental or own-daytime-use reasons, demand is likely to be very limited beyond 2012. This has important read-across for the sector, given that in 2011, Germany accounted for >30% of global demand. While other countries such as the US, China and India may offset some of this decline, they will be hard pushed to create meaningful growth in global installations in Germany's absence, especially as other key markets such as Italy are also examining solar

We favour equipment players, companies with diversified exposure, or low-cost production

subsidy schemes. Given the continuing overcapacity in the manufacturing space, this lack of demand means that pricing is likely to remain weak across the solar value chain.

Accordingly, we continue to favour discounted equipment players in Europe such as Centrotherm (CTNG.DE; €9.85; 1H), believing that they will be exposed to the upgrade market as manufacturers struggle to stay ahead in the cost war. In the US we favour companies such as Advanced Energy Industries (AEIS.O; US\$13.21; 1H) again from the equipment and diversification angle, and MEMC (WFR.N; US\$3.65; 1H). In Asia we favour low-cost producers such as Trina Solar (TSL.N; US\$7.16; 1H).

Tariff cuts unchanged at 20-29%, but a different starting date

Detail of the new agreed tariff mechanism

New Feed-in Tariff levels

There appear to be no changes (vs. the February cabinet proposals) in the quantum of the tariffs to apply to different sizes of solar installations, though the key change remains that these will apply from 1 April 2012, rather than the initially planned 9 March 2012 (which would of course now have been retrospective, had it not been updated).

The key tariff cuts and rates are as follows:

- For <10kW systems (i.e. domestic) the new tariff is 19.5€/kWh (a 20.2% cut)
- For <1MW systems, 16.5€/kWh (a 24.9% to 29% cut, as two previous categories have been merged into one)
- For systems <10MW, 13.5€/kWh (a 26.4% cut).
- Systems >10MW will not receive a FiT, except for the portion of the plant up to 10MW.

Proportion of electricity to be remunerated

Lower proportions of electricity allowed to receive FiT

One key change of the initial 2012 proposals was that only a certain percentage of the electricity generated from solar installations would be eligible to receive the FiT (prior to 2012 all the electricity generated was eligible for the requisite tariff). This will come into effect from 1 January 2013, but will apply to everything installed from April 2012 onwards.

- Residential systems (i.e. up to 10kW) will now only receive the FiT for 80% of electricity generated (down from 85% in the February 2012 initial proposals, and 100% prior to that); the remainder can effectively be used for self-consumption. While this sounds negative, it could be viewed as a benefit to consumers who have daytime electricity usage (i.e. when the sun is shining), as the domestic FiT of €19.5ct/kWh is effectively below the residential cost of electricity, at about €25ct/kWh.
- Systems between 10kW and 1MW will now receive the FiT for 90% of electricity generated (unchanged from the February 2012 proposals).
- Systems from 1MW to 10MW will receive the FiT for all electricity generated (although admittedly at a very low price relative to the levelised cost of solar in Germany).

Timing changes

Extended grace period

Perhaps the biggest change in the amended proposals was for a slightly longer “grace period” in which applications received by 24 February 2012 will have until 1 July 2012 (for rooftop) and September 30 (for brownfield) to be completed (as determined by starting to generate electricity).

Target installation corridors reduce by
400MW per annum

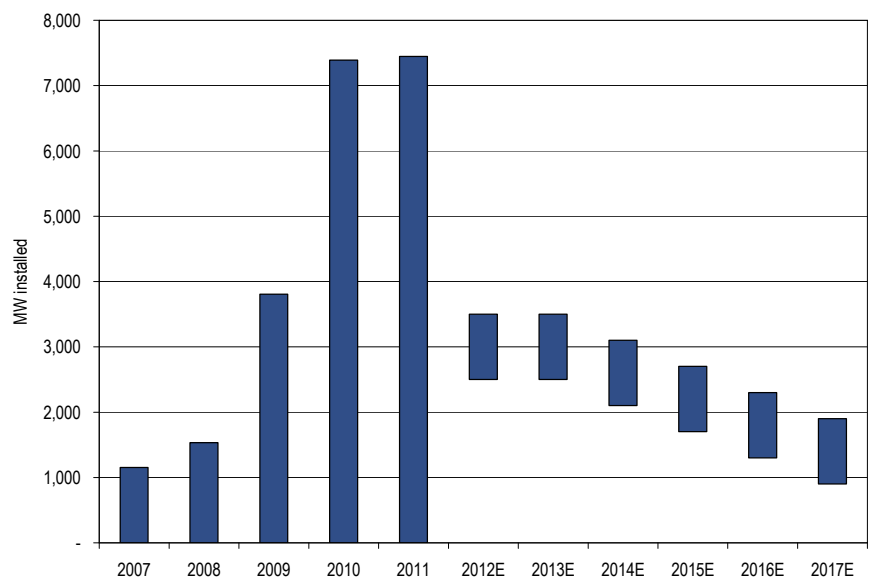
Target annual installation corridors:

The historically targeted annual installations corridor of 2.5-3.5GW per annum (which has been materially exceeded in recent years, hence the need for more regular cuts) is to be retained, but reduced by 400MW per annum as follows:

- For 2012 and 2013 the corridor of 2500-3500 MW will apply, and then be reduced to...
- 2014 : 2.1 – 3.1 GW
- 2015 : 1.7-2.7GW
- 2016 : 1.3-2.3GW
- 2017 : 0.9-1.9GW

This is represented graphically in Figure 1, with reference to historic installation levels.

Figure 1. Target annual solar installation corridors, beyond/beneath which monthly tariff adjustments will apply



Source: Citi Investment Research and Analysis; Deutsche Bundestag

As figure 1 shows, these target installations corridors imply a dramatic reduction in installations compared to previous years. This is also hugely important for global demand, given that Germany represented > 30% of the 24GW of global demand in 2011. While other countries such as the US, China and India may be able to make up for a certain amount of this shortfall, their ability to compensate fully (let alone provide meaningful global growth yoy) is questionable.

Monthly tariff adjustments of 1%...

...adjusted for the preceding annualised installations

Reference periods

The basic ongoing adjustments will consist of a monthly reduction in FiT of 1% (vs. the previous month) to apply from 1st May 2012. This is a slight change to the previously announced reduction of €0.15ct/months, proposed in the February draft.

However, this monthly reduction will be adjusted depending on installations in prior periods, and whether or not these exceed the corridors (or look set to) mentioned previously. From 31 August 2012 onwards, the authorities must publish the installation figures for the month just ended. Since the cuts are to be based on installations following this new ruling, this monthly data will be 'annualised' to assess the monthly FiT adjustments necessary, until a full year's worth of installation data (post the changes) is available.

The following data will be published and will be used to determine the monthly tariff cuts for the following periods:

- On 31st October 2012, the ministry must publish the total installed capacity from 30 June 2012 to 1 October 2012 (i.e. calendar Q3 2012 installations). These will then be multiplied by 4 (i.e. annualised) and will be used as a reference volume vs. the 2.5-3.5GW target corridor. Any excess or shortfall will be used to adjust monthly tariffs reductions in November and December 2012 and January 2013. (For value adjustments see later section).
- On 31 January 2013, the ministry must publish installations from 30 June 2012 to 1 January 2013 (i.e. H2 2012 installations). These will then be multiplied by 2 to annualise them, and any shortfall excess with reference to the target corridor will govern changes to monthly tariff cuts on 1 February 2013, 1 March 2013 and 1 April 2013.
- On 30 April 2013, the ministry must publish installations from 30 June 2012 to 1 April 2013, (i.e. 9 months to end of March 2013), which will then be annualised by multiplying by 4/3. Any excess/shortfall versus the target corridor will be used to adjust monthly tariff adjustments on 1 May 2013, 1 June 2013 and 1 July 2013.
- On 31 July 2013 and thereafter on 31 October, 31 January and 30 April of each year, the sum of installations in the previous 12 months must be published. From 1 August 2013, the monthly 1% tariff reduction will be adjusted depending on how the previous annual installations figure compares to the corridor.

Monthly volume-related tariff adjustments

Monthly tariff cuts could vary from 2.8%...

If the annualised installation figures for the reference periods listed above exceed the 3.5GW upper end of the target corridor, the 1% monthly tariff reduction will be adjusted as follows:

- Up to 1000 MW excess will receive a further 0.4% tariff cut percentage points,
- > 1,000MW excess, + 0.8%
- > 2,000 MW +1.2%
- > 3,000 MW +1.5%
- > 4,000 MW +1.8%

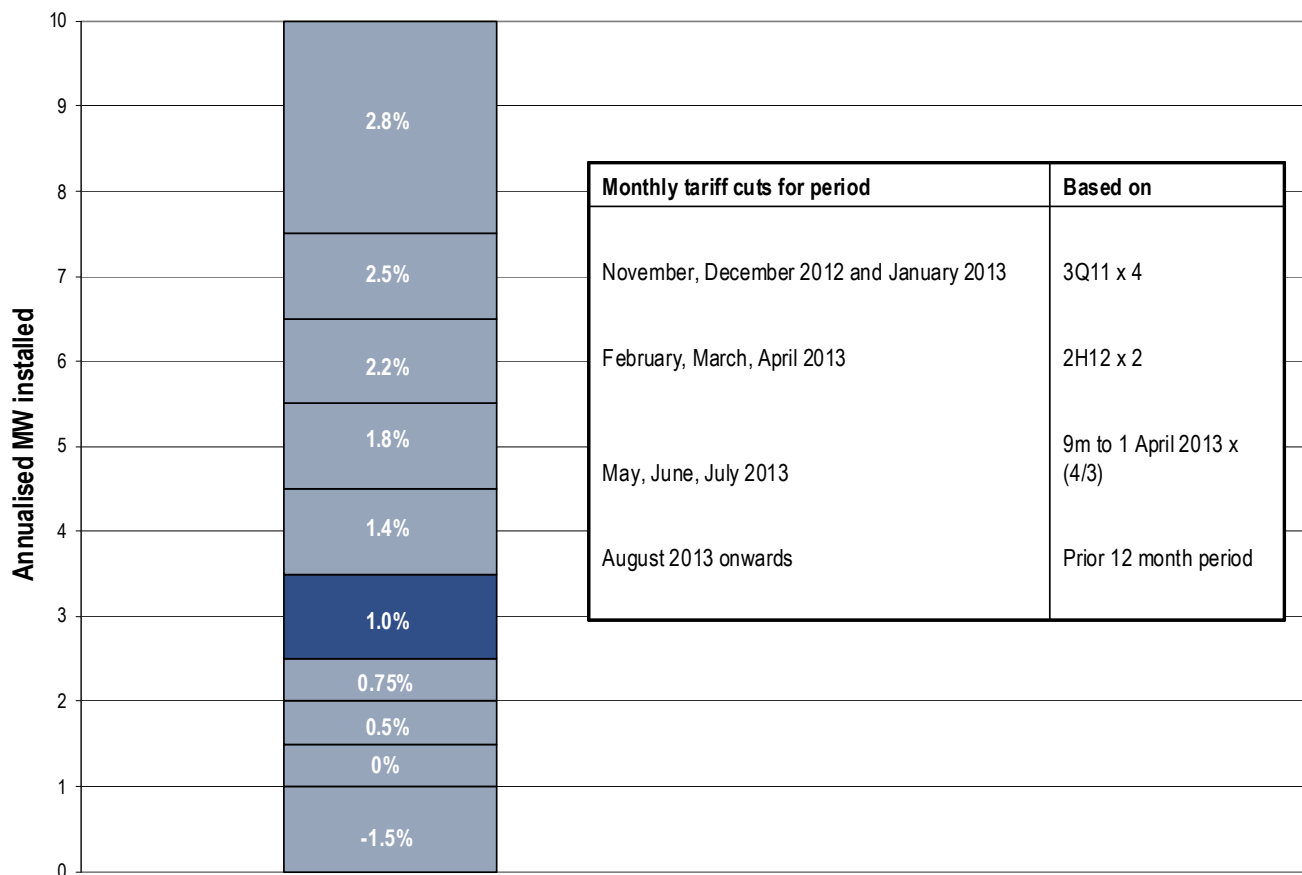
...to an increase of 1.5% in the event of an installations shortfall

For the periods in question, if the annualised reference installations fall below the 2.5GW lower corridor limit, the following adjustments to the monthly 1% tariff reduction apply:

- A shortfall of up to 500MW will reduce the monthly reduction to 0.75%.
- A shortfall of < 1,000 MW will reduce the monthly reduction 0.5%.
- A shortfall of <1500 MW will reduce the monthly reduction to zero.
- For a shortfall of >1,500MW the monthly decrease will be reduced zero, and in addition the allowance will be increased by 1.5% for the month(s) in question

These tariff adjustments are perhaps more easily demonstrated graphically.

Figure 2. Monthly FiT adjustments depending on preceding annualised installations. Reference corridor of 2.5-3.5GW applies to 2012 and 2013, and though the target corridor is reduced thereafter (see Figure 1), excess/shortfall amounts and tariff adjustments remain the same



Source: Citi Investment Research and Analysis and Deutsche Bundestag

As target volumes reduce, risk of excess installations leading to sharper tariff cuts increases

As Figure 2 shows, if annualised installations fall with the specific corridor, the monthly tariff reduction of 1% applies; however it is important to remember that as highlighted in Figure 1, this reference corridor reduces significantly from 2014 onwards.

Annualised cuts to tariffs could still be material, especially given reducing volume targets

Moreover, while these percentage changes might not sound that draconian given the small numbers, when annualised they could amount to material reductions, conceivably (although unlikely) up to 34%. It is also worth noting that any 'boom' period of installations will have a lasting effect on tariff reductions. On a slightly positive note, the monthly nature of tariff reductions should limit the boom/bust effect seen historically as developers waited until the last minute (so that module prices had fallen as far as possible) to install before annual tariff changes occurred.

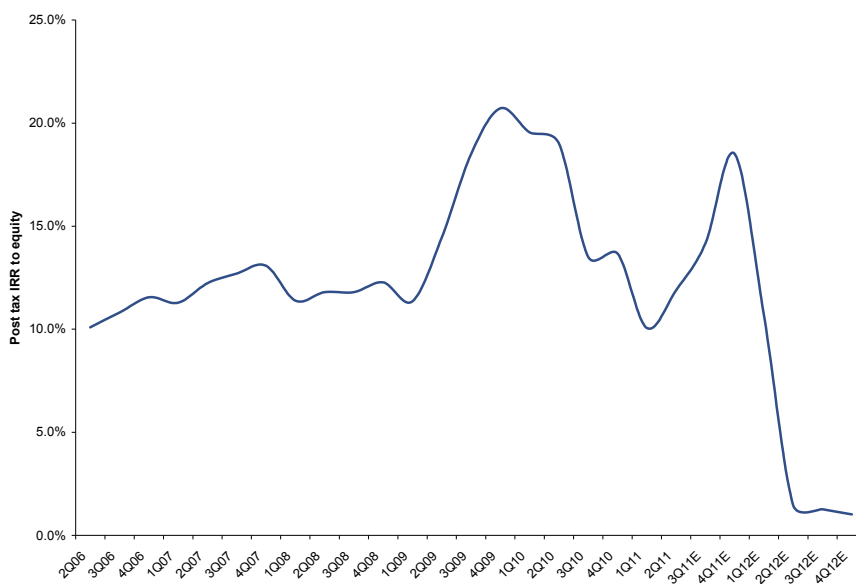
Conclusion: low IRR's likely to decimate demand

Uncertainty over, but low returns likely to severely limit installations

While it is positive that the uncertainty regarding German FiT's is now effectively over, it is important not to forget that these changes will in our view largely kill the German solar industry once the grace period is over.

The new starting tariffs from 1 April, representing 20-29% cuts from prior tariffs, we estimate will reduce post tax levered IRR's on domestic installations to the low-single-digit level, and reduce IRR's on larger projects to non-existent levels.

Figure 3. Post-tax levered IRR's on German domestic solar projects



Source: Citi Investment Research and Analysis

2012 installations may be surprisingly high, but this only makes the cuts (and future installations) worse

Accordingly, while we believe that this year's installation figures might appear surprisingly healthy for Germany, at up to 5GW given the grace period (with the German National chamber of Industry and Commerce expecting 8GW), the industry may all but disappear thereafter; ironically the more successful the industry is in rushing projects through, the worse it will be thereafter given the volume-sensitive tariff adjustments. While some domestic installations will undoubtedly continue, either for environmental reasons, or financial if there is significant daytime usage where own-use would offset more expensive purchased electricity, medium- and large-scale installations we expect to disappear.

Germany critical to global demand

Putting these figures in a global context (Figure 4) shows the importance of the reduction in German consumption on global demand. Germany in 2011 represented over 30% of global solar installations. Even if we upgrade German demand to 5GW in 2012 (from 3.5GW previously) given the longer grace period, this still leaves global demand basically flat yoy at 24GW. Moreover, with countries such as Italy (which was responsible for >25% of global demand in 2011) also examining subsidy schemes, the global outlook looks weak.

Figure 4. Global annual PV installations by country

MW	2006	2007	2008	2009	2010	2011E	2012E	2013E	2014E
China		74	69	160	300	2,700	5,000	6,500	8,000
Czech Republic		3	52	412	1,150	350	100	150	250
France		45	46	221	710	900	630	750	611
Germany		1,154	1,532	3,806	7,391	7,445	5,000	3,500	3,000
Greece		5	11	41	100	200	75	125	300
India		20	32	56	75	350	1,000	3,500	5,000
Italy		88	338	557	5,500	6,200	5,000	2,500	2,000
Japan		212	230	355	900	1,000	1,650	2,000	2,700
Portugal		14	50	63	84	98	148	221	332
South Korea		58	274	80	70	246	350	269	325
Spain		526	2,511	144	320	410	500	427	466
U.K.		4	6	10	40	850	300	200	300
U.S.		150	342	534	950	1,750	2,250	3,500	5,000
Saudi Arabia		-	-	-	-	250	400	440	484
South Africa		-	-	-	-	250	400	500	550
South America		-	-	-	-	150	300	330	363
Thailand		-	-	-	-	75	100	110	121
Other 5		-	-	-	-	-	-	-	-
ROW		481	409	506	462	775	1,000	1,200	1,260
Incremental Total	1,598	2,833	5,902	6,944	18,052	24,000	24,203	26,223	31,062
Yoy change %		77.3%	108.3%	17.7%	160.0%	32.9%	0.8%	8.3%	18.5%

Source: Citi Investment Research and Analysis

2013 global demand could also show limited growth

While the estimates in Figure 4 show demand growing in 2013 by 8%, we would highlight the downside risk to our German installation estimates (much will depend on panel price progressions through 2012 and 2013), and our Italian estimates. It appears likely that subsidy schemes in Italy could be reduced to levels only allowing around 1.5GW per annum to be funded, and while high insolation levels (i.e. it's sunny) and high electricity prices mean that many domestic installations are viable on a standalone basis, there is still downside risk to our demand forecast. Were both Germany and Italy to be weaker in 2013, this could lead to another fall year in demand.

Other countries may offset this, but potentially at lower price levels

While other countries such as the US, China and India may offset some of this decline, they will be hard pressed to do so completely, let alone generate material global demand growth. Moreover, markets such as China and India are lower-priced markets (currently by 15-20%), offering little potential respite to struggling manufacturers.

Advanced Energy Industries Inc

Valuation

We rate AEIS Buy with a \$16.50 target price. We have typically focused on mid-cycle earnings for semicap companies. However, because of the solar business and inverters are early in their growth cycle, we are choosing to use more of a spot earnings estimate for our valuation. As AEIS's business is shifting more toward the inverter side, with >50% rev coming out of solar biz, we apply a multiple of 10x to our C2013 EPS estimate of \$1.35 and add \$3/share in cash for our \$16.50 target.

Risks

The key risks to our investment thesis on AEIS are: 1) low earnings stability and, with a Beta of 1.9, high stock price volatility; 2) AEIS derives a significant portion of its revenue from the highly cyclical semiconductor industry and has exposure to other volatile markets such as flat panel display. Any unexpected drop in semiconductor demand or delays/cancellations in new fab projects or expansions could significantly lower demand for AEIS products; 3) AEIS may face further margin erosion in its solar inverter business, particularly if solar demand growth is slower than industry's inverter production expansion; 4) AEIS also is subject to competitive pricing pressure. For its inverter business, AEIS's European competitors may choose to compete in US market which is dominated by AEIS right now, causing a pricing war for market share. Additionally, on semi side, as its OEM customers look to increase the proportion of their outsourced components, specifically in the form of subsystems, AEIS faces the risk of share loss should it not be able to offer its customers a complete solution similar to those being offered by some of its top rivals. On the other hand, upside risks to our target price include any increase in market share in solar inverter, particularly in Europe, and at its largest customer (AMAT) in semis, especially in the PVD business where AEIS only has the DC power supply exposure, as well as better-than-expected GM improvement driven by incremental outsourcing benefits.

Centrotherm Photovoltaics

Valuation

We value the solar equipment manufacturers using trough EV/Sales multiples of 0.6x, applied to forecast 2012 sales. This produces a target price of €16.

Risks

We rate Centrotherm (as with all of the solar companies) as High Risk given the 12-month outlook.

The severe overcapacity in the solar manufacturing chain means that there is a significant risk that new orders are very limited, giving the potential for significantly reduced activity levels in 2012.

Added to this, there is the risk of further order cancellations or postponements, reducing the value of the existing order book. Moreover, evidence of some customers being reluctant to 'complete' on their orders and provide payment

suggests that there is a risk to some work in progress and of further write offs/provisions.

Both customers and suppliers could impose tougher payment terms leading to an expansion of working capital. However, with borrowing facilities of €360mn, about half of which is unused, Centrotherm appears to have significant financial headroom to weather this risk.

These risks could prevent the shares from reaching our target price.

MEMC Electronic Materials Inc

Valuation

Our target price on WFR is \$10. In valuing WFR, we look at a forward earnings-based approach given our view that WFR will begin to start generating earnings more indicative of normalized run rates over the next 12-18 months.

On a forward earnings basis, we note that WFR has traded as high as ~40x and as low as ~4x during the past cycle. Over the longer term, we think it is reasonable to assume a normalized market multiple in the mid-teens. To be fair, we acknowledge that WFR continues to deal with operational issues in the near term although they are improving, and SunEdison has complicated the business model to some degree. Consequently, we have elected to apply a ~10x multiple, at the lower end of the historical trading range, to our 2013 EPS estimate of \$0.94.

Risks

We rate MEMC shares High risk due to a number of factors including the following. 1) WFR has heavy exposure to the cyclical semiconductor industry that typically has limited visibility and a high degree of uncertainty regarding the timing and duration of cycles. Silicon wafer demand is highly correlated to semiconductor units, and thus any fall-off in chip demand would negatively affect wafer demand. 2) The commodity nature of wafers subjects wafer suppliers to intense competitive pressures and aggressive pricing. 3) WFR has a high debt/equity and we note that the company competes in an industry where there are few product differentiators, thus making capital spending one of the key differentiators. 4) WFR's solar revenues are hard to predict and now depend on the spot market for wafers which can be volatile. 5) SunEdison revenue is very hard to predict and the financials are reported as non-GAAP.

If the impact on the company from any of these factors proves to be greater than we anticipate, the stock will likely have difficulty achieving our target price. However, should they be less than anticipated, the stock could trade above our target price.

Trina Solar

Valuation

Our target price for TSL is \$11. With earnings power tough to come by in the solar sector, our valuation methodology is based on tangible book value with an adjustment for replacement cost to which we add the value of pipeline where warranted. In general, we estimate replacement cost for poly-silicon, tolling (wafer),

and cell/module capacity to be ~\$0.40/W for poly (\$70/kg, 6 g/W), \$0.30/W for tolling and \$0.35/W for cell/module. Using 2.4GWs of cell/module capacity and 1.2GWs of wafering capacity, TSL's replacement cost is ~\$1.2B to which we apply a 50% discount for a discounted replacement cost of ~\$600MM. This is ~\$325MM lower than our forecasted PPE for YE 2012. Applying this difference to estimated YE 2012E tangible book of ~\$1.1B yields an adjusted tangible book value of ~\$800M or ~\$11 per share. On this basis, our target price is \$11.

Risks

We rate TSL High Risk primarily due to high earnings and stock price volatility.

Additional risk factors include: 1) TSL is a relatively young company competing in an emerging industry where key factors such as business models, the overall supply chain, and supply/demand fundamentals are still evolving, 2) Raw materials make up a large portion of TSL's cost structure and it purchases a significant amount of these key materials on the spot market where prices have fluctuated significantly in recent years, 3) TSL carries a debt-laden balance sheet with a healthy amount of debt that is short-term in maturity, 4) A good percentage of TSL's sales are concentrated in regions with strong financial incentive programs for solar power. To the extent that these incentives lessen over time, demand for TSL's products could be negatively impacted, 5) Solar stocks have historically exhibited a strong positive correlation with oil prices. This suggests any downward correction in oil prices could pressure solar stocks, in general. If the impact on the company from any of these factors proves to be greater/lesser than we anticipate, the stock will likely have difficulty achieving/or may exceed our target price.

Appendix A-1

Analyst Certification

The research analyst(s) primarily responsible for the preparation and content of this research report are named in bold text in the author block at the front of the product except for those sections where an analyst's name appears in bold alongside content which is attributable to that analyst. Each of these analyst(s) certify, with respect to the section(s) of the report for which they are responsible, that the views expressed therein accurately reflect their personal views about each issuer and security referenced and were prepared in an independent manner, including with respect to Citigroup Global Markets Inc and its affiliates. No part of the research analyst's compensation was, is, or will be, directly or indirectly, related to the specific recommendation(s) or view(s) expressed by that research analyst in this report.

IMPORTANT DISCLOSURES

Analysts' compensation is determined based upon activities and services intended to benefit the investor clients of Citigroup Global Markets Inc. and its affiliates ("the Firm"). Like all Firm employees, analysts receive compensation that is impacted by overall firm profitability which includes investment banking revenues.

For important disclosures (including copies of historical disclosures) regarding the companies that are the subject of this Citi Investment Research & Analysis product ("the Product"), please contact Citi Investment Research & Analysis, 388 Greenwich Street, 28th Floor, New York, NY, 10013, Attention: Legal/Compliance [E6WYB6412478]. In addition, the same important disclosures, with the exception of the Valuation and Risk assessments and historical disclosures, are contained on the Firm's disclosure website at https://www.citivelocity.com/cvr/epublic/citi_research_disclosures. Valuation and Risk assessments can be found in the text of the most recent research note/report regarding the subject company. Historical disclosures (for up to the past three years) will be provided upon request.

Citi Investment Research & Analysis Ratings Distribution

Data current as of 31 Dec 2011

	12 Month Rating			Relative Rating		
	Buy	Hold	Sell	Buy	Hold	Sell
Citi Investment Research & Analysis Global Fundamental Coverage	57%	34%	9%	10%	79%	10%
% of companies in each rating category that are investment banking clients	45%	41%	40%	49%	43%	41%

Guide to Citi Investment Research & Analysis (CIRA) Fundamental Research Investment Ratings:

CIRA's stock recommendations include an investment rating and an optional risk rating to highlight high risk stocks.

Risk rating takes into account both price volatility and fundamental criteria. Stocks will either have no risk rating or a High risk rating assigned.

Investment Ratings: CIRA's investment ratings are Buy, Neutral and Sell. Our ratings are a function of analyst expectations of expected total return ("ETR") and risk. ETR is the sum of the forecast price appreciation (or depreciation) plus the dividend yield for a stock within the next 12 months. The Investment rating definitions are: Buy (1) ETR of 15% or more or 25% or more for High risk stocks; and Sell (3) for negative ETR. Any covered stock not assigned a Buy or a Sell is a Neutral (2). For stocks rated Neutral (2), if an analyst believes that there are insufficient valuation drivers and/or investment catalysts to derive a positive or negative investment view, they may elect with the approval of CIRA management not to assign a target price and, thus, not derive an ETR. Analysts may place covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and / or trading in the company's securities (e.g. trading suspension). As soon as practically possible, the analyst will publish a note re-establishing a rating and investment thesis. To satisfy regulatory requirements, we correspond Under Review and Neutral to Hold in our ratings distribution table for our 12-month fundamental rating system. However, we reiterate that we do not consider Under Review to be a recommendation.

Relative three-month ratings: CIRA may also assign a three-month relative call (or rating) to a stock to highlight expected out-performance (most preferred) or under-performance (least preferred) versus the geographic and industry sector over a 3 month period. The relative call may highlight a specific near-term catalyst or event impacting the company or the market that is anticipated to have a short-term price impact on the equity securities of the company. Absent any specific catalyst the analyst(s) will indicate the most and least preferred stocks in the universe of stocks under consideration, explaining the basis for this short-term view. This three-month view may be different from and does not affect a stock's fundamental equity rating, which reflects a longer-term total absolute return expectation. For purposes of NASD/NYSE ratings-distribution-disclosure rules, most preferred calls correspond to a buy recommendation and least preferred calls correspond to a sell recommendation. Any stock not assigned to a most preferred or least preferred call is considered non-relative-rated (NRR). For purposes of NASD/NYSE ratings-distribution-disclosure rules we correspond NRR to Hold in our ratings distribution table for our 3-month relative rating system. However, we reiterate that we do not consider NRR to be a recommendation.

Prior to October 8, 2011, the firm's stock recommendation system included a risk rating and an investment rating. **Risk ratings**, which took into account both price volatility and fundamental criteria, were: Low (L), Medium (M), High (H), and Speculative (S). **Investment Ratings** of Buy, Hold and Sell were a function of CIRA's expectation of total return (forecast price appreciation and dividend yield within the next 12 months) and risk rating. Additionally, analysts could have placed covered stocks "Under Review" in response to exceptional circumstances (e.g. lack of information critical to the analyst's thesis) affecting the company and/or trading in the company's securities (e.g. trading suspension). Stocks placed "Under Review" were monitored daily by management and as practically possible, the analyst published a note re-establishing a rating and investment thesis. For securities in developed markets (US, UK, Europe, Japan, and Australia/New Zealand), investment ratings were: Buy (1) (expected total return of 10% or more for Low-Risk stocks, 15% or more for Medium-Risk stocks, 20% or more for High-Risk stocks, and 35% or more for Speculative stocks); Hold (2) (0%-10% for Low-Risk stocks, 0%-15% for Medium-Risk stocks, 0%-20% for High-Risk stocks, and 0%-35% for Speculative stocks); and Sell (3) (negative total return). For securities in emerging markets (Asia Pacific, Emerging Europe/Middle East/Africa, and Latin America), investment ratings were: Buy (1) (expected total return of 15% or more for Low-Risk stocks, 20% or more for Medium-Risk stocks, 30% or more for High-Risk stocks, and 40% or more for Speculative stocks); Hold (2) (5%-15% for Low-Risk stocks, 10%-20% for Medium-Risk stocks, 15%-30% for High-Risk stocks, and 20%-40% for Speculative stocks); and Sell (3) (5% or less for Low-Risk stocks, 10% or less for Medium-Risk stocks, 15% or less for High-Risk stocks, and 20% or less for Speculative stocks).

Investment ratings are determined by the ranges described above at the time of initiation of coverage, a change in investment and/or risk rating, or a change in target price (subject to limited management discretion). At other times, the expected total returns may fall outside of these ranges because of market price

movements and/or other short-term volatility or trading patterns. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. Your decision to buy or sell a security should be based upon your personal investment objectives and should be made only after evaluating the stock's expected performance and risk.

NON-US RESEARCH ANALYST DISCLOSURES

Non-US research analysts who have prepared this report (i.e., all research analysts listed below other than those identified as employed by Citigroup Global Markets Inc.) are not registered/qualified as research analysts with FINRA. Such research analysts may not be associated persons of the member organization and therefore may not be subject to the NYSE Rule 472 and NASD Rule 2711 restrictions on communications with a subject company, public appearances and trading securities held by a research analyst account. The legal entities employing the authors of this report are listed below:

Citigroup Global Markets Ltd	Jason Channell
Citigroup Global Markets Inc	Timothy M Arcuri; Seth Tennant
Citigroup Global Markets Asia	Timothy Lam

OTHER DISCLOSURES

For securities recommended in the Product in which the Firm is not a market maker, the Firm is a liquidity provider in the issuers' financial instruments and may act as principal in connection with such transactions. The Firm is a regular issuer of traded financial instruments linked to securities that may have been recommended in the Product. The Firm regularly trades in the securities of the issuer(s) discussed in the Product. The Firm may engage in securities transactions in a manner inconsistent with the Product and, with respect to securities covered by the Product, will buy or sell from customers on a principal basis.

Securities recommended, offered, or sold by the Firm: (i) are not insured by the Federal Deposit Insurance Corporation; (ii) are not deposits or other obligations of any insured depository institution (including Citibank); and (iii) are subject to investment risks, including the possible loss of the principal amount invested. Although information has been obtained from and is based upon sources that the Firm believes to be reliable, we do not guarantee its accuracy and it may be incomplete and condensed. Note, however, that the Firm has taken all reasonable steps to determine the accuracy and completeness of the disclosures made in the Important Disclosures section of the Product. The Firm's research department has received assistance from the subject company(ies) referred to in this Product including, but not limited to, discussions with management of the subject company(ies). Firm policy prohibits research analysts from sending draft research to subject companies. However, it should be presumed that the author of the Product has had discussions with the subject company to ensure factual accuracy prior to publication. All opinions, projections and estimates constitute the judgment of the author as of the date of the Product and these, plus any other information contained in the Product, are subject to change without notice. Prices and availability of financial instruments also are subject to change without notice. Notwithstanding other departments within the Firm advising the companies discussed in this Product, information obtained in such role is not used in the preparation of the Product. Although Citi Investment Research & Analysis (CIRA) does not set a predetermined frequency for publication, if the Product is a fundamental research report, it is the intention of CIRA to provide research coverage of the/those issuer(s) mentioned therein, including in response to news affecting this issuer, subject to applicable quiet periods and capacity constraints. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security. Any decision to purchase securities mentioned in the Product must take into account existing public information on such security or any registered prospectus.

Investing in non-U.S. securities, including ADRs, may entail certain risks. The securities of non-U.S. issuers may not be registered with, nor be subject to the reporting requirements of the U.S. Securities and Exchange Commission. There may be limited information available on foreign securities. Foreign companies are generally not subject to uniform audit and reporting standards, practices and requirements comparable to those in the U.S. Securities of some foreign companies may be less liquid and their prices more volatile than securities of comparable U.S. companies. In addition, exchange rate movements may have an adverse effect on the value of an investment in a foreign stock and its corresponding dividend payment for U.S. investors. Net dividends to ADR investors are estimated, using withholding tax rates conventions, deemed accurate, but investors are urged to consult their tax advisor for exact dividend computations. Investors who have received the Product from the Firm may be prohibited in certain states or other jurisdictions from purchasing securities mentioned in the Product from the Firm. Please ask your Financial Consultant for additional details. Citigroup Global Markets Inc. takes responsibility for the Product in the United States. Any orders by US investors resulting from the information contained in the Product may be placed only through Citigroup Global Markets Inc.

Important Disclosures for Morgan Stanley Smith Barney LLC Customers: Morgan Stanley & Co. LLC (Morgan Stanley) research reports may be available about the companies that are the subject of this Citi Investment Research & Analysis (CIRA) research report. Ask your Financial Advisor or use smithbarney.com to view any available Morgan Stanley research reports in addition to CIRA research reports.

Important disclosure regarding the relationship between the companies that are the subject of this CIRA research report and Morgan Stanley Smith Barney LLC and its affiliates are available at the Morgan Stanley Smith Barney disclosure website at www.morganstanleysmithbarney.com/researchdisclosures.

For Morgan Stanley and Citigroup Global Markets, Inc. specific disclosures, you may refer to www.morganstanley.com/researchdisclosures and http://www.citivelocity.com/cvr/eppublic/citi_research_disclosures.

This CIRA research report has been reviewed and approved on behalf of Morgan Stanley Smith Barney LLC. This review and approval was conducted by the same person who reviewed this research report on behalf of CIRA. This could create a conflict of interest.

The Citigroup legal entity that takes responsibility for the production of the Product is the legal entity which the first named author is employed by. The Product is made available in **Australia** through Citigroup Global Markets Australia Pty Ltd. (ABN 64 003 114 832 and AFSL No. 240992), participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in Australia to Private Banking wholesale clients through Citigroup Pty Limited (ABN 88 004 325 080 and AFSL 238098). Citigroup Pty Limited provides all financial product advice to Australian Private Banking wholesale clients through bankers and relationship managers. If there is any doubt about the suitability of investments held in Citigroup Private Bank accounts, investors should contact the Citigroup Private Bank in Australia. Citigroup companies may compensate affiliates and their representatives for providing products and services to clients. The Product is made available in **Brazil** by Citigroup Global Markets Brasil - CCTVM SA, which is regulated by CVM - Comissão de Valores Mobiliários, BACEN - Brazilian Central Bank, APIMEC - Associação dos Analistas e Profissionais de Investimento do Mercado de Capitais and ANBID - Associação Nacional dos Bancos de Investimento. Av. Paulista, 1111 - 11º andar - CEP. 01311920 - São Paulo - SP. If the Product is being made available in certain provinces of **Canada** by Citigroup Global

Markets (Canada) Inc. ("CGM Canada"), CGM Canada has approved the Product. Citigroup Place, 123 Front Street West, Suite 1100, Toronto, Ontario M5J 2M3. This product is available in **Chile** through Banchile Corredores de Bolsa S.A., an indirect subsidiary of Citigroup Inc., which is regulated by the Superintendencia de Valores y Seguros, Agustinas 975, piso 2, Santiago, Chile. The Product is made available in **France** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority, 1-5 Rue Paul Cézanne, 8ème, Paris, France. The Product is distributed in **Germany** by Citigroup Global Markets Deutschland AG ("CGMD"), which is regulated by Bundesanstalt fuer Finanzdienstleistungsaufsicht (BaFin). CGMD, Reuterweg 16, 60323 Frankfurt am Main. Research which relates to "securities" (as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong)) is issued in **Hong Kong** by, or on behalf of, Citigroup Global Markets Asia Limited which takes full responsibility for its content. Citigroup Global Markets Asia Ltd. is regulated by Hong Kong Securities and Futures Commission. If the Research is made available through Citibank, N.A., Hong Kong Branch, for its clients in Citi Private Bank, it is made available by Citibank N.A., Citibank Tower, Citibank Plaza, 3 Garden Road, Hong Kong. Citibank N.A. is regulated by the Hong Kong Monetary Authority. Please contact your Private Banker in Citibank N.A., Hong Kong, Branch if you have any queries on or any matters arising from or in connection with this document. The Product is made available in **India** by Citigroup Global Markets India Private Limited, which is regulated by Securities and Exchange Board of India. Bakhtawar, Nariman Point, Mumbai 400-021. The Product is made available in **Indonesia** through PT Citigroup Securities Indonesia. 5/F, Citibank Tower, Bapindo Plaza, Jl. Jend. Sudirman Kav. 54-55, Jakarta 12190. Neither this Product nor any copy hereof may be distributed in Indonesia or to any Indonesian citizens wherever they are domiciled or to Indonesian residents except in compliance with applicable capital market laws and regulations. This Product is not an offer of securities in Indonesia. The securities referred to in this Product have not been registered with the Capital Market and Financial Institutions Supervisory Agency (BAPEPAM-LK) pursuant to relevant capital market laws and regulations, and may not be offered or sold within the territory of the Republic of Indonesia or to Indonesian citizens through a public offering or in circumstances which constitute an offer within the meaning of the Indonesian capital market laws and regulations. The Product is made available in **Israel** through Citibank NA, regulated by the Bank of Israel and the Israeli Securities Authority. Citibank, N.A. Platinum Building, 21 Ha'arba'ah St, Tel Aviv, Israel. The Product is made available in **Italy** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. Via dei Mercanti, 12, Milan, 20121, Italy. The Product is made available in **Japan** by Citigroup Global Markets Japan Inc. ("CGMJ"), which is regulated by Financial Services Agency, Securities and Exchange Surveillance Commission, Japan Securities Dealers Association, Tokyo Stock Exchange and Osaka Securities Exchange. Shin-Marunouchi Building, 1-5-1 Marunouchi, Chiyoda-ku, Tokyo 100-6520 Japan. If the Product was distributed by SMBC Nikko Securities Inc. it is being so distributed under license. In the event that an error is found in an CGMJ research report, a revised version will be posted on the Firm's Citi Velocity website. If you have questions regarding Citi Velocity, please call (81 3) 6270-3019 for help. The Product is made available in **Korea** by Citigroup Global Markets Korea Securities Ltd., which is regulated by the Financial Services Commission, the Financial Supervisory Service and the Korea Financial Investment Association (KOFIA). Citibank Building, 39 Da-dong, Jung-gu, Seoul 110-180, Korea. KOFIA makes available registration information of research analysts on its website. Please visit the following website if you wish to find KOFIA registration information on research analysts of Citigroup Global Markets Korea Securities Ltd. <http://dis.kofia.or.kr/fs/dis2/fundMgr/DISFundMgrAnalystPop.jsp?companyCd2=A03030&pageDiv=02>. The Product is made available in **Malaysia** by Citigroup Global Markets Malaysia Sdn Bhd (Company No. 460819-D) ("CGMM") to its clients and CGMM takes responsibility for its contents. CGMM is regulated by the Securities Commission of Malaysia. Please contact CGMM at Level 43 Menara Citibank, 165 Jalan Ampang, 50450 Kuala Lumpur, Malaysia in respect of any matters arising from, or in connection with, the Product. The Product is made available in **Mexico** by Acciones y Valores Banamex, S.A. De C. V., Casa de Bolsa, Integrante del Grupo Financiero Banamex ("Accival") which is a wholly owned subsidiary of Citigroup Inc. and is regulated by Comision Nacional Bancaria y de Valores. Reforma 398, Col. Juarez, 06600 Mexico, D.F. In **New Zealand** the Product is made available to 'wholesale clients' only as defined by s5C(1) of the Financial Advisers Act 2008 ("FAA") through Citigroup Global Markets Australia Pty Ltd (ABN 64 003 114 832 and AFSL No. 240992), an overseas financial adviser as defined by the FAA, participant of the ASX Group and regulated by the Australian Securities & Investments Commission. Citigroup Centre, 2 Park Street, Sydney, NSW 2000. The Product is made available in **Pakistan** by Citibank N.A. Pakistan branch, which is regulated by the State Bank of Pakistan and Securities Exchange Commission, Pakistan. AWT Plaza, 1.1. Chundrigar Road, P.O. Box 4889, Karachi-74200. The Product is made available in the **Philippines** through Citicorp Financial Services and Insurance Brokerage Philippines, Inc., which is regulated by the Philippines Securities and Exchange Commission. 20th Floor Citibank Square Bldg. The Product is made available in the Philippines through Citibank NA Philippines branch, Citibank Tower, 8741 Paseo De Roxas, Makati City, Manila. Citibank NA Philippines NA is regulated by The Bangko Sentral ng Pilipinas. The Product is made available in **Poland** by Dom Maklerski Banku Handlowego SA an indirect subsidiary of Citigroup Inc., which is regulated by Komisja Nadzoru Finansowego. Dom Maklerski Banku Handlowego S.A. ul.Senatorska 16, 00-923 Warszawa. The Product is made available in the **Russian Federation** through ZAO Citibank, which is licensed to carry out banking activities in the Russian Federation in accordance with the general banking license issued by the Central Bank of the Russian Federation and brokerage activities in accordance with the license issued by the Federal Service for Financial Markets. Neither the Product nor any information contained in the Product shall be considered as advertising the securities mentioned in this report within the territory of the Russian Federation or outside the Russian Federation. The Product does not constitute an appraisal within the meaning of the Federal Law of the Russian Federation of 29 July 1998 No. 135-FZ (as amended) On Appraisal Activities in the Russian Federation. 8-10 Gasheka Street, 125047 Moscow. The Product is made available in **Singapore** through Citigroup Global Markets Singapore Pte. Ltd. ("CGMSPL"), a capital markets services license holder, and regulated by Monetary Authority of Singapore. Please contact CGMSPL at 8 Marina View, 21st Floor Asia Square Tower 1, Singapore 018960, in respect of any matters arising from, or in connection with, the analysis of this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). The Product is made available by The Citigroup Private Bank in Singapore through Citibank, N.A., Singapore Branch, a licensed bank in Singapore that is regulated by Monetary Authority of Singapore. Please contact your Private Banker in Citibank N.A., Singapore Branch if you have any queries on or any matters arising from or in connection with this document. This report is intended for recipients who are accredited, expert and institutional investors as defined under the Securities and Futures Act (Cap. 289). This report is distributed in Singapore by Citibank Singapore Ltd ("CSL") to selected Citigold/Citigold Private Clients. CSL provides no independent research or analysis of the substance or in preparation of this report. Please contact your Citigold/Citigold Private Client Relationship Manager in CSL if you have any queries on or any matters arising from or in connection with this report. This report is intended for recipients who are accredited investors as defined under the Securities and Futures Act (Cap. 289). Citigroup Global Markets (Pty) Ltd. is incorporated in the **Republic of South Africa** (company registration number 2000/025866/07) and its registered office is at 145 West Street, Sandton, 2196, Saxonwold. Citigroup Global Markets (Pty) Ltd. is regulated by JSE Securities Exchange South Africa, South African Reserve Bank and the Financial Services Board. The investments and services contained herein are not available to private customers in South Africa. The Product is made available in **Spain** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. 29 Jose Ortega Y Gassef, 4th Floor, Madrid, 28006, Spain. The Product is made available in the **Republic of China** through Citigroup Global Markets Taiwan Securities Company Ltd. ("CGMTS"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan

and/or through Citibank Securities (Taiwan) Company Limited ("CSTL"), 14 and 15F, No. 1, Songzhi Road, Taipei 110, Taiwan, subject to the respective license scope of each entity and the applicable laws and regulations in the Republic of China. CGMTS and CSTL are both regulated by the Securities and Futures Bureau of the Financial Supervisory Commission of Taiwan, the Republic of China. No portion of the Product may be reproduced or quoted in the Republic of China by the press or any third parties [without the written authorization of CGMTS and CSTL]. If the Product covers securities which are not allowed to be offered or traded in the Republic of China, neither the Product nor any information contained in the Product shall be considered as advertising the securities or making recommendation of the securities in the Republic of China. The Product is for informational purposes only and is not intended as an offer or solicitation for the purchase or sale of a security or financial products. Any decision to purchase securities or financial products mentioned in the Product must take into account existing public information on such security or the financial products or any registered prospectus. The Product is made available in **Thailand** through Citicorp Securities (Thailand) Ltd., which is regulated by the Securities and Exchange Commission of Thailand. 18/F, 22/F and 29/F, 82 North Sathorn Road, Silom, Bangrak, Bangkok 10500, Thailand. The Product is made available in **Turkey** through Citibank AS which is regulated by Capital Markets Board. Tekfen Tower, Eski Buyukdere Caddesi # 209 Kat 2B, 23294 Levent, Istanbul, Turkey. In the **U.A.E.**, these materials (the "Materials") are communicated by Citigroup Global Markets Limited, DIFC branch ("CGML"), an entity registered in the Dubai International Financial Center ("DIFC") and licensed and regulated by the Dubai Financial Services Authority ("DFSA") to Professional Clients and Market Counterparties only and should not be relied upon or distributed to Retail Clients. A distribution of the different CIRA ratings distribution, in percentage terms for Investments in each sector covered is made available on request. Financial products and/or services to which the Materials relate will only be made available to Professional Clients and Market Counterparties. The Product is made available in **United Kingdom** by Citigroup Global Markets Limited, which is authorised and regulated by Financial Services Authority. This material may relate to investments or services of a person outside of the UK or to other matters which are not regulated by the FSA and further details as to where this may be the case are available upon request in respect of this material. Citigroup Centre, Canada Square, Canary Wharf, London, E14 5LB. The Product is made available in **United States** by Citigroup Global Markets Inc, which is a member of FINRA and registered with the US Securities and Exchange Commission. 388 Greenwich Street, New York, NY 10013. Unless specified to the contrary, within EU Member States, the Product is made available by Citigroup Global Markets Limited, which is regulated by Financial Services Authority. Pursuant to Comissão de Valores Mobiliários Rule 483, Citi is required to disclose whether a Citi related company or business has a commercial relationship with the subject company. Considering that Citi operates multiple businesses in more than 100 countries around the world, it is likely that Citi has a commercial relationship with the subject company.

Many European regulators require that a firm must establish, implement and make available a policy for managing conflicts of interest arising as a result of publication or distribution of investment research. The policy applicable to CIRA's Products can be found at

https://www.citivelocity.com/cvr/eppublic/citi_research_disclosures.

Compensation of equity research analysts is determined by equity research management and Citigroup's senior management and is not linked to specific transactions or recommendations.

The Product may have been distributed simultaneously, in multiple formats, to the Firm's worldwide institutional and retail customers. The Product is not to be construed as providing investment services in any jurisdiction where the provision of such services would not be permitted.

Subject to the nature and contents of the Product, the investments described therein are subject to fluctuations in price and/or value and investors may get back less than originally invested. Certain high-volatility investments can be subject to sudden and large falls in value that could equal or exceed the amount invested. Certain investments contained in the Product may have tax implications for private customers whereby levels and basis of taxation may be subject to change. If in doubt, investors should seek advice from a tax adviser. The Product does not purport to identify the nature of the specific market or other risks associated with a particular transaction. Advice in the Product is general and should not be construed as personal advice given it has been prepared without taking account of the objectives, financial situation or needs of any particular investor. Accordingly, investors should, before acting on the advice, consider the appropriateness of the advice, having regard to their objectives, financial situation and needs. Prior to acquiring any financial product, it is the client's responsibility to obtain the relevant offer document for the product and consider it before making a decision as to whether to purchase the product. With the exception of our product that is made available only to Qualified Institutional Buyers (QIBs), CIRA concurrently disseminates its research via proprietary and non-proprietary electronic distribution platforms. Periodically, individual CIRA analysts may also opt to circulate research posted on such platforms to one or more clients by email. Such email distribution is discretionary and is done only after the research has been disseminated via the aforementioned distribution channels. CIRA simultaneously distributes product that is limited to QIBs only through email distribution.

The level and types of services provided by CIRA analysts to clients may vary depending on various factors such as the client's individual preferences as to the frequency and manner of receiving communications from analysts, the client's risk profile and investment focus and perspective (e.g. market-wide, sector specific, long term, short-term etc.), the size and scope of the overall client relationship with Citi and legal and regulatory constraints.

CIRA product may source data from dataCentral. dataCentral is a CIRA proprietary database, which includes Citi estimates, data from company reports and feeds from Reuters and Datastream.

© 2012 Citigroup Global Markets Inc. Citi Investment Research & Analysis is a division of Citigroup Global Markets Inc. Citi and Citi with Arc Design are trademarks and service marks of Citigroup Inc. and its affiliates and are used and registered throughout the world. All rights reserved. Any unauthorized use, duplication, redistribution or disclosure of this report (the "Product"), including, but not limited to, redistribution of the Product by electronic mail, posting of the Product on a website or page, and/or providing to a third party a link to the Product, is prohibited by law and will result in prosecution. The information contained in the Product is intended solely for the recipient and may not be further distributed by the recipient to any third party. Where included in this report, MSCI sourced information is the exclusive property of Morgan Stanley Capital International Inc. (MSCI). Without prior written permission of MSCI, this information and any other MSCI intellectual property may not be reproduced, disseminated or used to create any financial products, including any indices. This information is provided on an "as is" basis. The user assumes the entire risk of any use made of this information. MSCI, its affiliates and any third party involved in, or related to, computing or compiling the information hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of this information. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in, or related to, computing or compiling the information have any liability for any damages of any kind. MSCI, Morgan Stanley Capital International and the MSCI indexes are services marks of MSCI and its affiliates. The Firm accepts no liability whatsoever for the actions of third parties. The Product may provide the addresses of, or contain hyperlinks to, websites. Except to the extent to which the Product refers to website material of the Firm, the Firm has not reviewed the linked site. Equally, except to the extent to which the Product refers to website material of the Firm, the Firm takes no responsibility for, and makes no representations or warranties whatsoever as to, the data and information contained therein. Such address or hyperlink (including addresses or hyperlinks to website material of the Firm) is provided solely for your convenience and information and the content of the

A FiT-ting end to a growth industry?

2 April 2012

linked site does not in anyway form part of this document. Accessing such website or following such link through the Product or the website of the Firm shall be at your own risk and the Firm shall have no liability arising out of, or in connection with, any such referenced website.

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST
