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Energy (Citi)
Global

Energy Darwinism – stock implications

The evolution of the energy industry

- **Far-reaching implications** — The changes currently taking place in the global energy market should have significant ramifications for a wide range of sectors and stocks. In this report, designed to accompany the Citi GPS: ENERGY DARWINISM - The Evolution of the Energy Industry report by equity analysts Channell, Jansen, Syme and Savvantidou, we highlight these stocks by sector, providing actionable read-across.
- **The global energy complex is evolving** — While the world of energy is constantly evolving, we believe that the last five years has seen a dramatic acceleration in that rate of change and, more importantly, that the pace of change is set to at least continue if not accelerate further. Simplistically, we believe that certain power generation technologies are evolving - most notably gas via the shale revolution or solar via technological and manufacturing advances -- while other technologies such as wind are evolving much more slowly, with some such as coal showing more limited evolutionary change. The long-term nature of investments in these technologies and fuels means that the pace of change should have a profound impact on the returns of both upstream and generation projects, and the suppliers of equipment to these industries.
- **Implications for coal** — While coal represents much of the second quartile on our integrated cost curve, it is evolving more slowly than other technologies and is most at risk of substitution, not least due to environmental considerations.
- **Implications for gas** — The key implications for the gas sector are that despite the excitement about shale, the sector is not completely immune. Longer-term projects at the top end of the integrated cost curve are exposed to greater risk of substitution, and should therefore demand higher returns.
- **Implications for utilities** — For utilities the key issue is a shrinking addressable market, uncertainty over potential fuel costs and likely future utilisation rates of generation assets. Given the long-term nature of these assets, investment is extremely difficult, and calls into question future returns and growth potential in our view.
- **Implications for equipment manufacturers** — The choices made by utilities should have profound implications on the order books and hence revenues of the equipment providers. Moreover, regional differentials in demand (developed markets spending more on renewables, while emerging markets continue to favour conventional) should have implications for levels of local competition and location of manufacturing assets.
- **Implications for alternative energy** — While alternative energy can in many ways be seen as the disruptive winner, continuing overcapacity and trade wars mean that returns for manufacturers (outside of China) remain unappealing. Conversely project developers are the main beneficiary of the boom in renewables' adoption.

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Energy Darwinism

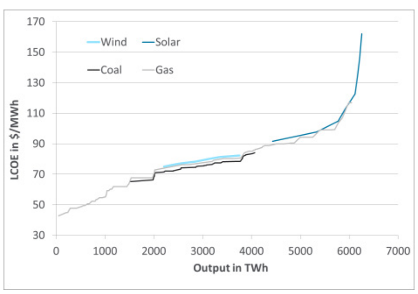
The evolution of the energy industry

This is not a report about renewables, or indeed about shale gas. It is about the evolution of the whole energy industry, the relative pace of that evolution and the substitutional effects which are beginning to take place and are likely in our view to accelerate, be they gas for coal or oil, wind for nuclear, or solar for gas. The sums of money involved are vast; the IEA estimate $37trn will be invested in primary energy between now and 2035, and hence even small swings can be material. These changes will affect any investor, owner, producer or consumer of energy - which to be honest, whether directly or indirectly, is all of us.

The global energy industry has been transformed in the last five years in ways and to an extent that few would have thought credible. The emergence of shale gas has transformed the US energy market; Germany has seen some gas fired power stations running for less than 10 days a year due to the impact of solar, with their utility owners profit warning; developed markets now spend more on renewable capex than they do on conventional generation, largely due to uncertainty over commodity pricing and likely future utilisation rates; the legacy of Fukushima has seen Japan burning gas at $16-17/mmbtu (while the US basks in $3 shale), introducing the world's most attractive solar subsidy scheme catapulting it to be the world's second largest solar market; conversely the intermittency of renewables has led in some markets to greater demand for the flexibility offered by gas.

So, fuel and technology substitution is happening, and not just in developed markets; the shift in emerging markets is less marked, but is nonetheless there. The voracious appetite for power displayed by emerging markets should engender a higher level of new conventional generation (in particular coal), though gas is gradually taking demand from coal, and renewables are forecast to represent 10% of new installed power generation capacity in China over the next two years.

Figure 1. Citi integrated energy cost curve



Source: Citi Research

Despite these shifts, the analysis of individual fuel and technology cost curves has continued largely on a standalone basis, with limited emphasis on the risks of substitution. Accordingly we have combined the work of our alternative energy, oil & gas, mining (coal), utility and commodity research teams to create an integrated energy curve, which allows us to assess the impact and risks of this substitutional change across all fuel and technology types, right down to the granularity of individual coal mines and upstream oil & gas fields. Importantly this integrated curve looks at incremental energy demand and supply, meaning relatively small changes in mix can have a material impact on the returns of projects, particularly those at the upper end of the cost curve. To make comparison easier we have focused on the power generation market as this is by far the largest and fastest growing consumer of primary energy, with the highest level of substitution risk. To do this we have used the levelised cost of electricity concept which allows us to compare different fuels and technologies on a like-for-like basis. Gas dominates the first quartile, driven largely by shale. However, the gas curve is long and the fourth quartile is coincident with solar, where arguably the longer term evolutionary potential is greater. Coal represents much of the second quartile, but interestingly wind overlaps coal, without the same commodity price risk or indeed utilisation rate risk, and no pollution. Moreover, within the report we examine the different evolutionary pace of the various fuels and technology, in an attempt to assess how this curve itself will evolve. Given the long term nature of both upstream and consumer projects, these changes could well have a material impact within the life of many of these projects.

This stock implications report is designed to accompany the Citi GPS: ENERGY DARWINISM - The Evolution of the Energy Industry published today.

Oil and gas

Sector implications

Industry has always assumed its products will be sold

The Oil & Gas industry has never before really had to take seriously the threat of competing fuels. In fact, the last decade of a steepening cost-curve has positively encouraged the industry to believe that the world has an appetite to consume unlimited oil and gas products at almost any price.

Strategically the belief in continued high prices has allowed many players to fill backlogs over recent years. The challenge for the investors is to now decide if those backlogs have much value against a backdrop of rapid shifts in the energy mix.

Cheap gas has an important, symbiotic role in an evolving energy mix

What the cost-curve does tell us is that cheap gas does have an important role in the global energy mix; indeed all of the 1st-quartile of gas remains below the competition point from renewables and coal. In a renewables-based energy mix we see an important, symbiotic role for gas, with CCGT flexibility filling in for intermittency of other technologies (at least until the day that storage solutions fill that void). For example, as base-load coal/nuclear is displaced by solar, morning and evening power needs would likely come from gas. Low-cost gas should benefit from a demand standpoint.

High-cost gas risks competition from renewables; greenfield LNG dominates 4th-quartile

We think the challenge is especially pertinent for the 4th-quartile of gas export projects, most of which we think is occupied by LNG. Part of the issue here is that LNG as a technology has been unable to introduce efficiency/cost-improvement to offset many of the supply-chain pressures (particularly labour costs) that the industry has faced. Greenfield Australia and Western Canada now look to require close to oil-parity LNG pricing to generate a 10% IRR. Can oil-parity pricing be guaranteed to deliver the multi-year payback these projects need?

The last point also raises how the issue of payback sits alongside the issue of price. We would argue that for high-cost, long-payback gas projects that the cost of equity against these projects is potentially higher than the market currently perceives. Conversely, projects that can generate rapid payback are perhaps now significantly lower risk; a value-characteristic that shale gas has been able to exploit.

Winners and Losers

For equity investors in energy, the risks of a rapidly changing energy mix signal to us that cost-curve positioning is becoming paramount. In that regard we have two central beliefs:

1st-quartile worth more than 4th-quartile

- Investing in high-cost projects carries a higher risk profile than low-cost. 4th-quartile oil projects (e.g. Canadian heavy oil) might be alright, but 4th-quartile gas projects carry questionable value in our view.

Short payback lower risk than long payback

- Investing in long-payback projects carries a different risk profile than short-payback. Equity should demand a much higher return in a backdrop where payback is at risk.

We see winners around companies that can grow comfortably from assets low on the cost-curve. From a gas perspective the low-cost assets are brownfield LNG (PNG T3, Sabine Pass, Lake Charles), gas that benefits from huge economies of scale (Mozambique, potentially Kurdistan) and many of the gas resources that sit close to market (India's KG basin, Chinese domestic supply, Marcellus). We see BG, Genel, Range Resources, Southwestern and Sempra all sitting as strong relative winners.

Companies where growth looks highly dependent on high-cost gas sit as our relative losers, with risks that those assets become stranded by price. We think the growth optionality that sits underneath RD Shell as relatively high cost (especially Australian LNG); and similarly that of Woodside.

Figure 2. Oil & Gas Winners and Losers

										2013		
	Ticker	**Rating**	**Risk**	**Currency**	**Market Cap ($bn)**	**Price**	**Target Price**	**Yield (%)**	**ETR (%)**	**P/E**	**P/B**	**RoE**
Winners												
BG Group	BG.L	1		USD	64.8	11.75	14.2	1.5%	22.4%	15.2 x	1.9 x	13%
Rational: *Low-cost growth from pre-salt Brazil oil underpins most of BG's growth this decade, an asset that recent data (well productivity etc) supports improving cost-efficiency. On the gas (LNG) side (c. 20% of BG's cash flow) we think the company has enough low-cost, asset light options in both Sabine Pass and Lake Charles to support growth without relying on higher-cost options such as W. Canada.*												
Genel Energy	GENL.L	1	H	USD	4.3	9.4	11.5	0.0%	22.3%	20.8 x	1.0 x	5%
Rational: *Kurdistan continues to be de-risked from a political standpoint, leaving the resource-potential well positioned on our global cost curve. The oil potential is being exploited today, but ultimately we believe there is a lot of value currently stranded within the gas discoveries that can be monetised at low cost.*												
Range Resources Corp	RRC.N	1		USD	12.4	75.99	95	0.2%	25.2%	54.0 x	4.1 x	6%
Rational: *Continued cost-efficiencies in the Marcellus make this one of low-cost suppliers into the US energy market. We see strong growth potential from the current portfolio, and with long-term portfolio visibility.*												
Southwestern Energy Co	SWN.N	1		USD	12.9	36.64	46	0.0%	25.5%	18.3 x	3.4 x	22%
Rational: *Strong US shale gas position based around low-cost Marcellus portfolio and potential to optimise Fayetteville position.*												
Sempra Energy	SRE.N	1		USD	20.8	85.15	91	2.9%	9.8%	21.2 x	1.9 x	9%
Rational: *Development potential from brownfield Cameron LNG project (Louisiana)- which is likely to move through into FERC approval early 2014 - sees this as another source of low-cost LNG into global markets. Growing renewables poer portfolio geared towards the development of solar and wind capacity in the US desert southwest.*												
Losers												
Royal Dutch Shell	RDSa.L	2		USD	211.7	20.19	22	5.5%	14.3%	8.9 x	1.1 x	13%
Rational: *Too much of backlog build of recent years has been built around an assumption of high prices, in our view. In that regard future growth looks at risk, with monetisation of high-cost Australian LNG (GLNG, Browse LNG and extensive US shale build-out now facing uncertainty.*												
Woodside Petroleum Ltd	WPL.AX	2		USD	29.0	37.77	42.2	6.9%	17.8%	15.0 x	2.0 x	13%
Rational: *Pipeline of growth options (Browse, Laverda, Leviathan, Sunrise) all carry a lot of risk, in our view, given relatively high cost positions and to some extent geopolitical considerations.*												

Source: Citi Research

Renewables – developers vs. manufacturing

Sector implications – now a mainstream contender

Renewables is now no longer a niche industry

The key implication of the GPS Energy Darwinism report for the renewables sector is that it is no longer a niche industry – it has become a member (albeit a smaller one) of the mainstream energy complex. The rapid cost reductions of renewable technologies in recent years mean that they can compete with conventional generation in an increasing number of places around the world on an unsubsidized basis.

Its pace of evolution means it is likely to become even more disruptive

Given the focus of the GPS report on the evolution of energy markets, and in particular this topic of 'substitution', in many way renewables could be seen as 'the winner', given that it is being adopted at the expense of other fuels and technologies. Moreover, in an evolutionary sense, the most disruptive aspect of both solar and wind is that they are evolving faster than conventional generation (with the possible exception of the shale effect). Hence the risk of the pace of substitution increasing is not insignificant.

The upward impact of renewables on power costs does pose the risk of negative regulatory/political intervention

However, with success comes risk. Renewables is responsible for a lot of the disruption to energy markets in markets like Germany, where utilisation rates are falling on conventional plant causing a need for capacity payments to make those plants economic. All of this pushes up energy prices, and therein lies the key risk; that having been heavily subsidised to make them competitive, those renewables technologies are now no longer (in many cases) deserving of such large subsidies, and it could be argued that the extra costs that they are placing on energy systems leaves them exposed to either having subsidies reduced or phased out at least, with even the potential of taxes to offset their impact on energy markets.

Attractive growth in both developed and emerging markets

As the GPS report highlights the prospects for renewables in volume terms are attractive in both developed and emerging markets, though in different ways. In developed markets a mix shift is taking place, with renewables being added at the expense of often existing as well as new build conventional. In emerging markets the voracious appetite for power means that while the bulk of new capacity will be conventional, renewables will still be a sizeable proportion, and indeed investment in renewables in developing markets will be greater than that in developed markets.

Winners and Losers – developers more attractive

Manufacturing remains tough outside China

While renewables as a technology may be a 'winner', the same is not necessarily so of the companies. The high initial returns available in the early boom years has led to material manufacturing overcapacity which has yet to clear. Moreover, a global trade war is also hampering the efforts of some companies, and it seems the manufacturing battle is largely over, with China now hosting the majority of plant. While some important industry players such as Meyer Burger (MBTN.S; SFr10.30; 2H) and SMA exist in Europe, and while they are likely to be longer term winners given their technological edge, until the prices have stabilized (benefitting SMA) and overcapacity ceases and capacity reinvestment starts (benefiting Meyer Burger), it is hard to be positive on manufacturers outside of China. This leaves GCL Poly as our favoured play in manufacturing (and in Asia).

US Developers are most attractive ex-China play

Conversely, with the attractive returns on offer in many markets, the key area of potential we see for renewables is in the project developers who benefit from the growth and returns that these projects provide. Our preferred plays in this space are all US listed, namely SunEdison and First Solar.

Figure 3. Renewables Winners and Losers

	Ticker	Rating	Risk	Currency	Market Cap ($bn)	Price	Target Price	Yield (%)	ETR (%)	2013 P/E	2013 P/B	2013 EV/EBITDA	2013 RoE
Winners													
SunEdison	SUNE.N	1	H	USD	2.2	8.29	11.0	0.0%	32.7%	1215.5 x	4.7 x	11.3 x	-23%
Rationale: Decision to spin off its Semi business through an IPO enables the refocus of management and board on its solar business. The company has 2.9GW of pipeline and 1GW of backlog - all backlog projects have a signed PPA or FiT and most of the backlog is expected to be completed in the next 24 months. SUNE also seems to have an attractive growth profile for a YieldCo given its proprietary deal flow and deep pipeline of PPA backed solar development projects.													
First Solar Inc.	FSLR.O	1	H	USD	3.9	40.18	50.0	0.0%	24.4%	9.3 x	0.9 x	4.0 x	10%
Rationale: Recently announced partnership with GE to advance their thin-film solar cells and modules is a significant move for the company in their quest to improve module efficiencies. Key driver of partnership with GE is the ability of FSLR to leverage the relationship to capture business across the globe; similar to the relationship SunPower has with Total. Last quarter, the company also announced the acquisition of 1.5GW of pipeline in various stages of development from Element Power - expanding their pipeline to 8GW.													
SunPower Corp.	SPWR.O	1	H	USD	3.2	26.46	32.0	0.0%	20.9%	18.8 x	3.0 x	9.0 x	4%
Rationale: SPWR boasts the highest efficiency cells and panels in the industry and this has helped the company push record MW volumes in recent quarters. Their relationship with French oil giant Total has led to key project wins around the globe in emerging growth markets such as Japan, South Africa and France. On top of that, strategic JV's with Toshiba and Sharp in Japan has opened the door for SPWR to gain exposure to one of the largest residential markets in the world.													
GCL-Poly Energy Holdings	3800.HK	1	H	HKD	4.5	2.24	2.50	0.2%	11.6%	92.7 x	1.9 x	17.6 x	2%
Rationale: With solar gaining competitiveness by 2020, GCL is set to benefit from expanding demand for solar installations. This both benefits their poly business upstream where fundamentals on stronger demand are expected to benefit GCL and their emerging solar development business.													
Losers													
Renewable Energy Corporation	REC.OL	3	H	NOK	1.0	2.72	2.50	0.0%	-8.1%	-13.7 x	0.9 x	16.7 x	-6%
Rationale: China tariffs and structural overcapacity in the poly market pose significant headwinds for REC. As China represents the majority of the polysilicon market, China tariffs of 57% represent the key risks to REC's profitability.													
SMA Solar Technology	S92G.DE	3	H	EUR	1.2	26.41	17.2	0.0%	-34.9%	-35.6 x	1.2 x	20.5 x	-3%
Rationale: Declining inverter prices erode margins. On top of that SMA has significant exposure to Europe where end demand is shifting away into Asia and the US. As SMA rebalances its portfolio we are expecting additional price declines.													

Source: Citi Research

Metals and Mining

Structural issues in Coal

Coal under pressure from weakening China consumption

Citi expect continued pressure on medium to long term coal prices as environmental controls in China along with political and legal hurdles in India limit growth. Our commodities team have published a report titled (The Unimaginable: Peak Coal in China) in which they argue the effect of a possible peak coal demand in China. The Energy Darwin GPS piece also highlights coal's inability to innovate and deliver a step change in competitive pricing power against to other energy sources is likely to cap the upside. Moreover, mounting environmental pressure and increasing willingness of the leadership to prioritize cleaner growth suggests these alternatives are set to meet an increasing share of electricity demand. We believe that investors should price in higher probabilities of lower coal demand.

Thermal coal prices remain under pressure

Thermal coal prices have maintained an almost steady descent throughout the year, hitting ~$76-78/t FOB CIF ARA and Newcastle FOB at the end of September

Thermal coal prices have maintained an almost steady descent throughout the year, hitting ~$76-78/t FOB CIF ARA and Newcastle FOB at the end of September; near the lowest levels seen this year. Prices have fallen about 15% YTD, due to a combination of abundant supplies and soft demand. Signs of a sustained pickup in demand remain elusive as demand from China & India, two of the most dominant consumers, remains tepid. Coal demand is likely to remain under pressure structurally due to increased environmental controls in China & legal hurdles which could limit growth in India. The market remains extremely well supplied, notwithstanding the weak price environment, as producers hesitate on output cutbacks due to the lack of a first mover advantage. We estimate 30% of producers face negative cash margins currently. The recent sharp increase in freight rates is also putting further pressure on prices, AUS-CN rates have risen $5/t over the past month. A lack of a concerted supply-side response and persistence of dull demand is likely to see prices stay subdued in H2. We have lowered our short and medium term thermal coal forecasts. Q4 forecasts for FOB Newcastle prices are lowered ~11% to $72/t and by a similar magnitude to $78/t in 2014.

Winners and Losers

Top picks: Rio, Impala, Southern Copper Company

The above argument revalidates Citi's muted view on the outlook for thermal coal, we have listed the companies under Citi's coverage that have exposure to coal in Figure 4. Rio Tinto remains our favoured Buy among the large-cap UK diversified mining companies, and Anglo American is our least favoured name among the large-cap miners. We have a Sell rating on New World Resources and Bumi Resources. Rio Tinto – predominately exposure to the iron ore market, the company has a significantly improving cash flow position. Southern Peru Copper remains our preferred exposure to copper due to its high quality asset base and organic growth potential. Impala Platinum remains one of the best placed platinum companies in South Africa with a relatively low cost position. Bumi Resources has pure coal exposure, and faces geographic and corporate issues. New World Resources faces a high cost operation and stretched balance sheet.

Figure 4. Mining and Metals Winners and Losers

	Ticker	Rating	Risk	Currency	Market Cap ($bn)	Price	Target Price	Yield (%)	ETR (%)	2013 P/E	2013 P/B	2013 EV/EBITDA	2013 RoE
Winners													
Rio Tinto PLC	RIO.L	1		USD	83.9	29.93	38.0	3.8%	30.6%	9.3 x	1.9 x	5.2 x	17%
Rationale: Rio Tinto – predominately exposure to the iron ore market, the company has a significantly improving cash flow position.													
Impala Platinum	IMPJ.J	1		ZAR	7.7	121.9	170.0	0.8%	41.4%	37.0 x	1.5 x	8.9 x	2%
Rationale: Impala Platinum remains one of the best placed platinum companies in South Africa with a relatively low cost position													
Southern Copper Company	SCCO.N	2		USD	22.9	27.18	28.0	3.1%	7.6%	14.7 x	4.2 x	8.8 x	31%
Rationale: Southern Peru Copper remains our preferred exposure to copper due to its high quality asset base and organic growth potential.													
Losers													
Anglo American PLC	AAL.L	2		USD	33.6	14.91	15.0	3.6%	4.6%	13.5 x	0.9 x	5.3 x	4%
Rationale: Anglo American is our least preferred global diversified miner, the company has outlined an ambitious turn around strategy but we believe that it will be difficult to achieve the company's stated objectives. The company has to deliver on key growth projects such as Minas Rio and is arguably constrained by an asset based heavily exposed to South Africa.													
New World Resources	NWRR.L	3	H	EUR	0.4	0.924	0.8	0.0%	-18.9%	-1.1 x	1.4 x	-3.3 x	-106%
Rationale: New World Resources faces a high cost operation and stretched balance sheet.													
Bumi Resources	BUMI.JK	3	H	USD	0.8	460	380.0	0.0%	-17.4%	-2.6 x	-4.8 x	15.6 x	
Rationale: Bumi resources has pure coal exposure, and faces geographic and corporate issues.													

Utilities

Sector implications

Utilities to decouple from economic activities due to a) energy efficiency and b) decentralized renewables

In Developed Markets we expect to see demand for electricity generated from traditional utilities to continue to decouple from economic activity and decline as a function of energy efficiency and increased penetration from decentralized energy. Already utilization of CCGTs in Europe has dropped to teen-levels and we see scope for a ca. 20% demand destruction across Europe and overall 50% decline in the addressable market for conventional generation. Coal plants and at certain times even nuclear plants have also been affected in Europe with the load factor of all thermal generation declining by about 10% since 2006. In that context, we forecast no new thermal capacity additions beyond what is already planned and under construction by the middle of the decade.

Similar issues observed in the US, especially with solar reaching socket parity

In the US, solar energy is already trending to hit socket parity which would result to similar issues as with Europe and also lead to further decoupling of power demand from rate base growth investments.

Energy demand growth makes developing markets more attractive

The picture is rosier in Developing Markets, where GDP is growth is much faster and energy intensity per unit of GDP still catching with the Developed Economies. According to industry players about 80% of the power generation investment required globally is based in emerging markets. As a result the focus of utilities in those regions will be to deliver on that capex both for thermal and renewable energy, including grid expansion.

Winners and Losers

As we argued in our Global Utilities report US Regulateds and Asian power & gas names preferred we see more value and structural opportunities in Emerging Markets utilities, particularly Asian power and gas names rather than those in Developed Markets. However, as Europe and the US make up about 75% of the Global utilities listed space, investors cannot entirely ignore those regions.

European markets moving from volumetric remuneration to capacity payments

We believe the structural shifts that are occurring in the European utilities space, will result to the need for price-setting models to change. Traditionally, volumetric remuneration (i.e. per MWh) has been the key means of charging customers for power. However, this encourages a reduction in consumption, which drives up the cost per unit of the overall system, encouraging a further reduction in consumption and a disincentive for utilities to invest. An asset-based remuneration such as upstream capacity payment could lead to a “revenue per customer” model with ladder-style tariff structures.

Top picks: Duke, Southern Company, Edison International, GDF Suez, Veolia, Red Electrica, Pennon, CR Power, Huaneng Renewables, ENN, Dongfang Electric, CKI, Kepco and AES Gener

The top-line pressures that the sector is set to continue facing should in our opinion be addressed with the creation of new business models, emphasizing on customer-facing activities such as energy efficiency services, and further cost-reduction. The latter would likely be achieved through consolidation, which would take out legacy and redundant infrastructure from the system. Longer term, such structural shifts could also be encountered in the US with similar results.

We therefore structurally prefer regulated and non-generation names in Developed markets such as Duke and Southern Company in the US and GDFSuez and Red Electrica in Europe. In Emerging Markets we would focus on CR Power, CKI, Kepco and AES Gener.

Figure 5. Utilities Winners and Losers

										2013			
	Ticker	**Rating**	**Risk**	**Currency**	**Market Cap ($bn)**	**Price**	**Target Price**	**Yield (%)**	**ETR (%)**	**P/E**	**P/B**	**EV/EBITDA**	**RoE**
Winners													
AES Gener	ASG.SN	1		USD	4.8	300.00	393.00	4.0%	35.1%	16.3 x	1.8 x	9.7 x	11%
Rationale: *There are few generation projects now under construction in Chile. The supply-demand relationship will tighten in 2015-17, owing to the lack of new capacity. We expect gencos to benefit from higher prices. The recent news on unlocking hydro project Alto Maipo is a positive catalyst for the stock. Besides growth prospects, 75% of total capacity is thermoelectric, and this portfolio will leverage earnings due to higher thermo generation to make up for weak hydrology.*													
Cheung Kong Infrastructure Holdings	1038.HK	1		HKD	17.3	53.75	62.00	3.3%	18.7%	11.4 x	1.9 x	62.5 x	17%
Rationale: *Further upward earnings potential as CKI has the financial resources (HK$5.1bn cash on hand and only 14% net debt to equity ratio by end 2011 to make acquisitions.*													
China Resources Power	0836.HK	1		HKD	11.4	18.44	26.00	3.9%	44.9%	8.2 x	1.4 x	6.2 x	18%
Rationale: *We have a Buy on CRP as (i) we believe the merger with CR Gas is unlikely, unless done through external support; overhang to lift if/when the deal is cancelled; (ii) Margin expansion from 7% yoy unit fuel cost cut in 2013E; and (iii) Highly profitable coal-fired units in Zhejiang and Guangdong to commence operation in 2H13-FY14E.*													
Drax Group Plc	DRX.L	1		GBP	4.5	6.85	7.25	2.0%	7.8%	25.2 x	1.8 x	13.3 x	7%
Rationale: *The UK government's decision to impose a carbon tax from 2013 will have substantial impact on the financials of the company. Drax trades on c.20x 2013E earnings. Unless the government increases support for biomass production, the company is likely to see continued downward pressure on both output and margins.*													
Duke Energy Corp	DUK.N	1		USD	47.3	67.03	80.00	4.7%	24.0%	15.4 x	1.5 x	9.3 x	7%
Rationale: *We believe investor concerns related to Crystal River 3 and rate case proceedings in the Carolinas are priced into shares, and that establishing conservative estimates for the likely outcomes reveals upside from current levels.*													
GDF Suez	GSZ.PA	1		EUR	61.0	18.70	18.00	8.0%	4.3%	14.2 x	0.8 x	7.0 x	5%
Rationale: *We anticipate Q3 results as likely to be supportive for the GDF Suez share price and payment of interim dividend in cash in Mid-November should also be supportive.*													
Hokkaido Electric Power	9509.T	1		JPY	2.7	1293.00	1600.00	0.0%	23.7%	-2.0 x	1.5 x	-72.4 x	-54%
Rationale: *We think Hokkaido Electric shares will see better relative performance for three reasons: 1) it is possible that the three Tomari reactors will restart at the same time; 2) we look for earnings improvement from FY3/14 H2 on rate hikes; and 3) if a return to profitability looks more likely, the reposting of DTAs would as well.*													
KEPCO	015760.KS	1		KRW	17.6	29500.00	38000.00	0.0%	28.8%	-72.0 x	0.4 x	8.6 x	-1%
Rationale: *We have a Buy on KEPCO as (i) Gradual re-commissioning of ten of the suspended 23 nuclear units in 2H13E should restore investor confidence; (ii) Unit fuel cost to fall 7.7% yoy in FY13E, including LNG cost decline of 9%, from W1,043k/t in 1Q13 to W945k/t in FY13E; and (iii) Cheapest PB among Asian utilities and below historical mean of 0.5x; negative effect of KRW/US$ depreciation appears priced in.*													
Red Electrica de Espana SA	REE.MC	1		EUR	7.7	42.17	48.00	6.7%	19.4%	11.2 x	2.6 x	8.0 x	24%
Rationale: *Red Electrica trades at a discount to regulated asset base with exposure to potential European economic recovery, while we think anticipation of potential positive Spanish newsflow on regulation could help the shares to outperform.*													
Southern Company Inc	SO.N	1		USD	36.0	41.23	51.00	4.9%	28.6%	15.0 x	1.8 x	9.8 x	13%
Rationale: *We are adding SO to our most preferred list. We believe the company's ongoing project development program will continue to provide steady and stable growth, while recent softer quarterly releases set the stage for the company to exceed near term lackluster sentiment among investors.*													
Losers													
Eletrobras (pn)	ELET6.SA	3	H	BRL	4.5	10.72	7.40	0.0%	-31.0%	-14.8 x	0.2 x	-249.1 x	-1%
Rationale: *Lackluster 3Q10 results + low cash generation + underpricing (Eletrobras' winning bid for HPP Teles Pires had an IRR of 5% in our ests, below expectations) reinforce our negative view. A weaker dollar may weigh further on ST performance.*													
Eletropaulo	ELPL4.SA	3		BRL	0.7	8.57	3.20	2.4%	-60.2%	3.9 x	0.8 x	9.5 x	5%
Rationale: *The July tariff reset (-5.8%) and the shorter time span to refund clients for excess collection in the last 12 months should force mgmt to (i) cut dividends, (ii) work under lower capex budget and heavy cost scrutiny that may impact quality of service, and (iii) likely renegotiate covenants (3.5x gross debt/EBITDA threshold; R$4.3 of gross debt by 1Q12). In this scenario, we forecast dividend yields (c.3.8% for 2012-2014; 25% payout) at the low end of the industry, thus reducing the attractiveness of an investment thesis founded on returning cash to shareholders as quickly as it is generated.*													
E.ON AG	EONGn.DE	3		EUR	35.1	12.985	11.50	5.1%	-6.6%	10.9 x	0.7 x	7.9 x	7%
Rationale: *With the gas renegotiations complete we see no more medium-term positive news flow. Conditions in European power markets are set to negatively impact spreads and load factors, we see potential further downward pressure on EPS and expect management to lower 2013 and 2015 guidance range.*													
Kyushu Electric Power	9508.T	2		JPY	6.8	1407	1450.00	0.0%	3.1%	-2.0 x	1.2 x	-34.3 x	-47%
Rationale: *We think Kyushu Electric's relative performance will lag peers for three reasons: 1) its rate hike is smaller than at other EPCOs, and while we look for profit improvement through FY3/16 Kyushu lags the others in terms of expected EPS; and 2) we think it will be slower than peers to resume dividends due to damage to shareholders' equity.*													
RWE AG	RWEG.DE	3		EUR	20.8	25.04	22.50	4.0%	-6.2%	6.3 x	1.2 x	7.1 x	19%
Rationale: *We expect the 9M results for RWE to lead to downward revisions to consensus earnings and expect the market to refocus on the group's dividend yield, which trades at 4% and has scope to expand towards the sector average of 5.5%, in our view.*													
SSE PLC	SSE.L	3		GBP	22.9	14.6804	12.70	5.7%	-7.6%	12.6 x	2.3 x	8.1 x	20%
Rationale: *Following the recent outperformance of SSE (shares up +16% and +15% relative to the sector since the beginning of the year) we expect both weak summer power prices and an overhang from credit rating agencies, updating the market on their outlook for the stock over the coming weeks, to weigh on the shares. This time last year, SSE was put on negative outlook by S&P.*													

Source: Citi Research

Capital Goods

Sector implications

Choices made by utilities will ultimately affect equipment manufacturers

The choices made by utilities and upstream energy companies will have serious implications for equipment manufacturers. Some technologies and hence manufacturers will benefit at the expense of others, and moreover these effects will vary by region, with potential implications for the location of manufacturing bases and levels of competition within the industry. The impact of the shift in the energy mix on conventional generation is highlighted in that only 29% of the $9.7trn of investment in power generation forecast by the IEA out to 2035 is expected to be in 'conventional generation' technologies (coal, gas, oil & nuclear), with the remainder being in renewable or clean energies.

Winners and Losers

We prefer GE and Siemens; both have significant exposure to the gas theme

Within the Global Capital Goods sector we believe GE and Siemens are both best positioned to benefit from the long-term trends in the global Energy markets. GE is well-positioned to benefit from the long-term energy revolution, with a broad portfolio that spans across power gen (17% of revenues) markets. While gas turbines are still the largest piece of the Energy portfolio, the company also has the leading position in the wind turbine market, with nearly half the US installed base. GE is also a player within the Nuclear market through boiling water reactors, fuel cycle products, and nuclear plant services. Finally, while Solar & Renewables are still the smallest piece of the Energy portfolio, GE continues to invest in thin film technology and control systems to profit from the eventual shift in energy production mix away from conventional generation. Siemens (Buy Rated and is included in the *Citi Focus List Europe*) is the second largest player in the global gas turbine market with a market share of 31% over the past 5 years and the third largest player in the global wind turbine market with a market share of just under 10%. Within these two markets Siemens has strategically focused on the areas of high structural growth through investing heavily in its gas turbine business in the US in an attempt to gain market share through its new facility in Charlotte. Within wind, Siemens has comfortably captured by far the highest share in the offshore wind turbine market over the past two years.

Figure 6. Capital goods Winners and Losers

	Ticker	Rating	Risk	Currency	Market Cap ($bn)	Price	Target Price	Yield (%)	ETR (%)	2013 P/E	2013 P/B	2013 EV/EBITDA	2013 RoE
Winners													
Siemens	SIEGn.DE	1		EUR	108.3	90.85	93.00	3.5%	5.7%	14.0 x	2.6 x	10.2 x	13%
Rationale: Siemens is the second largest player in the global gas turbine market with a market share of 31% over the past 5 years and the third largest player in the global wind turbine market with a market share of just under 10%.													
General Electric Company	GE.N	1		USD	244.3	23.99	29.00	3.2%	24.1%	14.8 x	1.9 x	4.1 x	13%
Rationale: GE is well-positioned to benefit from the long-term energy revolution, with a broad portfolio that spans across power gen (17% of revenues) markets. While gas turbines are still the largest piece of the Energy portfolio, the company also has the leading position in the wind turbine market, with nearly half the US installed base. GE is also a player within the Nuclear market through boiling water reactors, fuel cycle products, and nuclear plant services. Finally, while Solar & Renewables are still the smallest piece of the Energy portfolio, GE continues to invest in thin film technology and control systems to profit from the eventual shift in energy production mix away from conventional generation													

Source: Citi Research

Appendix A-1

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