US Electric Utilities & IPPs
SPI: Come Back Next Year

Equities

Americas
Electric Utilities

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Annual Solar Power International Conference Yields Bearish Conclusions
We hosted our latest set of meetings at the annual Solar Power International (SPI) conference in Vegas this week, providing largely bearish datapoints on pricing for solar panels, inverters, and more broadly for the industry. With demand appearing to decline in 2017 for the US, as well as slowing in 2H16 in China, we see little respite despite the prospects of lower prices. Overall, we reiterate our cautious view on the solar sector, with clear downside remaining despite the moves lower already.

Pricing on modules is down by ~20% in recent months, but could keep going
Pricing on average solar panels has slid considerably in recent months down to ~40c/W, down from what was closer to ~50c/W just several months ago. This appears to have been precipitated from the slowdown in 2H deployments in China as well as coincident delaying of projects in the US into 2017 (from 2016). The downturn was masked to a certain extent by surprisingly strong 1H deployments across China (~22GW). We see the bulk of lower costs for the resi players of late appear tied to declining cost of feedstock, rather than necessarily tied to compressing margins for module players. 1Q17 delivery of panels appears on pace to be in the low ~40's/W into the US, and we believe that prices could well hit the upper 30's/W for more competitive (non-tariff) markets; we estimate this would represent a ~25-30% decline, extrapolating largely intact margins (~15%) for Tier 1 developer costs (which are in the low 30's/W using current input costs). Expectations from mgmts suggest the lowest cost tier 1 producers could trend towards costs below the 30c/W production cost threshold by early next year. We expect continued sharp negative revisions in pricing through 2H. We could see further downside if panel makers fail to slowdown and build inventory resulting in further ~1-2c/W compression as margins decline to 10% or less. As a reminder, the last 2011-2012 down cycle saw margins drive to negative net cash margins.

The silver lining is a scaling back in expansion efforts – and cuts coming too
SPI provided the first indications of rationalization in the current cycle that had been missing from 2Q results, with initial indications of a willingness not only to run capacity at reduced output levels, but also a scaling back in expectations on expansion capex. While some appear committed already to pursue these efforts, for large part we see few as poised to put any meaningful expansion capex into 2017. To the contrary some Chinese manufacturers even discussed staffing reductions. Few discussed shutting any meaningful supply. Many in the industry noted that true shutdowns would be limited as much of the cost of operating solar was tied in variable costs for capacity rather than in fixed costs in running plants (as is the case in many other commoditized sectors).

Looking at the Solar Chain: Just how low can it go?
Following our latest meetings with manufacturers across the solar value chain (Wafer, Cells, Panels), we emphasize total costs could continue to compress not only as a function of further margin compression for module makes, but due to further compression in Poly prices too. Consensus Chinese expectation here remain for a fall towards ~$12/kg from the $15/kg level today (prices reached these lows just last year for context). Overall, panel declines remain the theme du jour, with the benefits likely being fully realized in 1Q17 (and FY17 guidance).

Summary Updates on Key Solar Equities

FSLR: So what do we think of shares? Still too pricey to get comfortable, in our view.

With clear downside risk from the rapid decline in panel prices, we have yet to see how this has impacted assumed ASPs and margins. We believe the sharp shift in the last couple months has yet to be reflected in consensus estimates, and we see clear headwinds into 3Q updates (although it's unclear if management will provide any meaningful updates on contracting efforts results from the latest pressures from China). Bottom line, we see FSLR exposed to the solar cycle, which remains under considerable pressure.

SPWR: It's really all about resi + holding out hope for Utility-scale

A key difference between FSLR and SPWR is the positioning of guidance around 2017 expectations. SPWR's recently established 2017 EBITDA guidance reflects limited to no contributions from utility-scale efforts despite having ~half of its ~1.1GW target for 2017 already identified and booked. We believe this expectation remains conservative as many of the PPAs date back to 2015 in a higher contracting and interest rate environment. We see just the decline in interest rates along YoY as add in considerable value to contracted solar projects. On the resi side, we emphasize the debate on a slowdown in the sector continues, but we continue to perceive this as being principally tied to the larger lease-focused entities.

RUN: Near-term best positioned company

Amidst both the ongoing turbulence from the pending SCTY deal as well as quelled concerns around liquidity, we see shares as poised to potentially recover off their recent flat line level. Mgmt was quite upbeat on prospects, but admitted pressures could remain on the Sales & Marketing front. Our principal concern remains RUN's strategy on focusing on the highest value consumer with seemingly 'more expensive' leases. While peers SCTY and VSLR have shifted towards loans for largely cash conservation purposes, the corresponding downward potential pressure on prices. While RUN indicates it has yet to see prices from any of its large rivals drop, we think this could be a next step in the cycle; the question into 4Q and into 1Q17 will be dissecting declines in offered residential rates between lower hardware costs (estimated at upwards of ~$0.25/W YoY alone) and any compression on rates. In the near-term, we think RUN could benefit as the most 'defensive' solar equity (apart from true YieldCos) out of a largely cautious solar update at SPI.

More Key Solar Themes

Resi Sector: Growth Continues... but Focus is on Marketing Costs

We note the most constructive datapoints were clearly to be found in the resi sector, with RUN appearing the most bullish of the conference amidst continued cost declines (~$0.25/W), ongoing access to financing, and latest success in net metering policies nationally. While RUN has previously exuded confidence earlier this year, execution on MWs has lacked creating a modest credibility gap on the latest outpouring of confidence for prospects.

Liquidity: Less of a Concern Overall despite substantial focus

Discussion persisted at the conference around the availability of financing following cautious datapoints from SCTY. Between constructive datapoints from SCTY and constructive commentary from peers, investor concerns appear to be largely quelled aside for discrete situations. Debt availability appears abundant, but access to Asset-Backed Securitization (ABS) appears less clear (several appear keen to tap this market but have held off for unclear reasons). A further trend appears towards asset sales such as that recently executed by SCTY in an effort to illustrate the value creation as well as to improve liquidity.

Who to watch now? VSLR Tax Equity Resolution for next financing datapoints

Among the key datapoints to watch in the sector is VSLR's effort to obtain tax equity. Mgmt has stated that while it has readily found suppliers for 2017, it has yet to find a source to fill its deficit in 2H16 (having just 24MWs as of 2Q call in August despite its 60MW quarterly pace). Mgmt stated it had other options to temporarily fund this deficit including its cash balance among other tools; mgmt further emphasized it has shifted sharply towards loan products (from a base of just ~5% beginning last year).

The Resi Loan vs. Lease Debate: Is this actually just about a competitive offer?

While RUN believes the overall value proposition to consumers is superior with leases (and specifically the best with pre-paid leases), the question is whether RUN pricing will be yet undercut by loan products. We note RUN's strategy of price discrimination in an effort to maximize prices across customer and channels could yet see pressures amidst the backdrop of an ever more competive field to hit targets and grow volumes.

Expanding the Resi Market Footprint: Prospects Brightening

We note the resi sector is once more deliberating expanding its product offering to new regions as the focus has shifted towards loan products rather than leases. While leases have historically proven problematic due to property tax issues in UT and FL, loans have less of a headwind. Given the importance of Florida and substantial efforts by incumbent utility to impede its deployment, we believe this could increasingly prove a pivotal state for resi players. We continue to perceive wide success in core resi markets across the Northeast and California.

Bracing for another wave of cost reductions on delivered cost of solar

We emphasize the latest compression in margins across the Solar value chain are likely to continue to drive a disproportionate decline in bids in pending RFPs for new solar projects. Despite concerns over unsustainably low costs of capital embedded in development bids, we don't perceive this as poised to shift through the current low interest rate environment. We expect PPA prices to begin trending regularly with prices in the $30's/MWh in future procurements nationally. We note there also appears less of a desire to incorporate PPA inflation adders (as there was previously with 2% a historic standard). Developers emphasize many quoted PPA prices of late are assumed to be flat unless stated otherwise.

We see merchant Texas play all the clearer

While many Power & Utility focused investors continue to doubt the economics of such an eventuality (premised on current ECOT forwards in the high 30's/MWh), we see the latest decline in solar costs with PPA prices trending well into the 30's as clearly leaving room for C&I contracts to be signed in the Texas market profitably. While we acknowledge that PPAs struck today typically have a 15-20 year tenor, deals done either with bank swaps in Texas would be ~7-years, whereas C&I deals could provide hedge support for 10-15 years too. Given the desire to hedge scarcity risk by retailers, this too could prove a promising avenue of further offtake support (such as the TXU Energy-SUNE deal last year). The key impediments we perceive to ERCOT deployment of solar remains large existing exposure for key lenders as well as potential transmission interconnection issues across West Texas. Overall, we emphasize the 2019 build-out of solar remains all the more real (timing is likely tied to 2019-2020 prior to the decline in the solar ITC from its 30% current level without a further extension).

Just how cheap can solar get? Focus remains on *crossing* the $1/W threshold

We emphasize developers remain closely focused on reducing all-in costs below the $1/W EPC developed cost of solar. While soft costs for development appear to add a further $0.10-0.20/W, we see opportunity for EPC costs to decline towards ~$0.90/W in time for the next large-scale deployment of panels in ~2019 (with panels achieving prices as low as ~$0.30-0.35/W and Balance of System likely ~$0.60/W under current quotes. We wouldn't doubt further deflation on these prices. We emphasize that many developers appear to be bidding in pre-emptively into forward year delivery procurements expectations for further cost declines.

The Utility-Scale: Best Prospects appear tied to QFs in the West & Southeast

We believe the best returns and demand prospects could remain tied to projects *outside* of the conventional RFP cycle. To this end, we see the Qualifying Facility (QF) opportunity afforded under PURPA as meriting the greatest attention. With the prices paid by utilities in non-RTO (organized markets) tied to Avoid Cost Rates, we see the delta between the declining solar costs and avoided cost rates as 'retainable' by solar developers. With many of these avoided cost rates historically in the ~5c/KWh range, we expect a proliferation of efforts to qualify projects; we expect solar developers will expedite their efforts under these avenues in an effort to put in applications 'prior' to interconnect queues being 'full' as well as prior to any reforms that could reduce solar.

The Big Picture on the West: Integration is a Risk to Solar.

We believe the success in organizing the Western power markets via the 'Energy Imbalance Market' (EIM) and now the latest efforts by Pacificorp and Berkshire Energy's wider utility footprint to organize more formally under the CAISO umbrella is a indication of the efforts to avoid being mandated to take delivery under PURPA rules. If Berkshire in cooperation with other regional utilities are successful in joining CAISO they will be able to avoid the PURPA mandates on any further QF puts.

Utility-scale development elsewhere: Sparse

With prospects for 2017 increasingly empty, developers and YieldCos alike emphasized the need to pursue acquisitive strategies to hit 'growth' targets. We believe this could push up valuations on existing assets further (and down returns). The focus on the discount rate reflected in private markets for developed assets remains around the 6-7% range, with the real wildcard driven by the corresponding terminal value assumptions. We're still broadly surprised at how robust the assumptions employed are given the deflationary trends in energy.

'2019 is the new 2016': The boom and bust is back

With the contemplated stepdown in the ITC slated for 2019, we see much of the procurement landscape for RFPs focused on this year given this the last year with the ITC in effect at the full 30% level. We believe some of this could still slip into 2020 given the start of construction language in place.

Where is the upside coming from? RPS expansion

Among the key themes emerging in the renewable landscape *outside of the conference* is a clear trend towards increasing Renewable Portfolio Standards (RPS) as existing mandates are achieved. While traditional utility investors appear readily aware of this factor, we note solar focused investors appear less keyed in on this opportunity as a driver to upside on 2019 deployments. A further question is when and if a shift will occur *back* towards solar (away from Wind which has won the bulk of utility-scale attention of late as costs are slated to hit the ~$30's/MWh). Net-net, pay attention to states such as AZ, CO, MN, OR, MD, and MA.

Community Solar is a shift in source of utility-scale growth

A further angle for Utility-scale procurement (albeit likely modest in size) is from Community Solar, as mandates appear to be expanding. This is likely to take the form of cannibalizing previously contemplated residential growth rather than be truly 'incremental' to overall deployment. We see prospects emerging in new states such as MD as well as upside to deployments in core Community Solar states like MN towards north of 400MW+.

All talk on storage? Few developments.

We continue to see limited progress on integrating storage opportunities. The most constructive datapoints were from RUN on this front, with initial expectations for the revisions in Time-of-Use rates enabling economic introduction of batteries for resi deploymeny in California as soon as next year. We remain skeptical of this given the lack of any meaningful capacity/demand charges benefits provided to resi players today, albeit aggregated benefits could be still be on the come.

Company Updates:

FSLR: Competing Down

Module-only strategy, but at better margins? We doubt this is sustainable

While management emphasized yet again its efforts to shift towards a module-focused business, it took added pains to reiterate it was keen to avoid direct competition with Chinese players with module sales. While this appears to take the form of focusing not just on sales to key relationships in the US (where import tariffs continue to apply), but also sell into higher priced panel markets like Japan. Overall, we see the argument around sustainably higher margins as weakening. While panels are indeed getting 'better' than the conventional Multi-Crystalline Silicon panels deployment typically deployed, we don't perceive any sustainable advantages in mgmt's latest strategy to sell module-only (and in a form factor that increasingly allows for deployment on a variety of tracking systems).

Swapping out drop at CAFD

FSLR continues to target drop down of the remaining 34% of Stateline by the end of the year, but this will be dependent on CAFD's ability to raise capital (as management has indicated previously). Mgmt has said it would be equally inclined to sell the remaining stake to Southern or another traditional corporate buyer.

What else is on offer?

Moappa and California flats are both slated to be sold in Q4. California flats would be sold in two phases (the second phase is in 2018 on CAFDs ROFO list). We see SO could be looking to buy into its 10/31 Analyst Day and SO has already announced multiple projects QTD.

KwH Analytics

Access to the capital markets continues to be challenging particularly in the residential space, with many players shifting to more uncommon parts of the capital structure. ABS deals in particular have been notably absent of late, and it could lead to smaller firms selling assets to more sophisticated large solar players so as to facilitate deal flow, though there have been limited examples of this thus far.

Separately, there are a number of firms who are focusing more distinctly on the small scale C&I market. While 'traditional' C&I included corporations with investment grade credit ratings, some developers are attempting to tap into the less well understood smaller C&I market by - for example - using Moody's shadow ratings (a service where you can input the financial information for a company and get a sample unofficial rating). Additionally, this type of market activity is creating issues for the tax equity partners as project completion timelines can easily shift between quarters, which changes the ability of the tax equity investor to utilize tax attributes and conversely could raise the required return in light of lack of timing certainty.

Storage continues to be an evolving theme, with Nevada in particular providing the most tangible example of what could happen in the more 'extreme' examples with some of the large Casino's opting to defect from the grid. Community Choice aggregators in California are also substantial opportunities, but actual storage economics are not quite there.

SunRun (RUN)

We hosted Ed Fenster, Chairman of SunRun, who appeared to be the most upbeat about prospects among companies we hosted, highlighting a number of positive data points. He believes the worst is over in terms of California net metering 2.0 (NEM), albeit full resolution is a 2H17 issue. While California continues to shifts its energy policy including the most recent energy legislation, customer savings are still in the comfortable ~20-30% range, and recent pricing changes as the electric pricing tiers have collapsed have opened up a number of new areas of the TAM in California as lower usage customers can now show savings under the higher unit rates in the state.

In Hawaii, 100% of RUN offerings today include a battery given changes to net metering in the state, and Hawaii is largely seen as a litmus test for storage (typical systems include ~14kWh of storage).

The core question for SunRun remains focused on cost reduction, and management sees a minimum of 25 cents of cost reduction as largely realistic in the next several quarters heading into 2017. Per mgmt, the primary driver would be panel prices - consistent with what we heard from panel manufacturers - where prices have declined from the high $0.50/w range earlier in the year to the low 40 cent range today for delivery late this year.

Inverters are a clear source of cost reduction too: Asian switch coming?

Additionally, Chinese competitors to micro-inverters or power optimizer solutions like ENPH/SEDG are marketing competing products for near term future delivery which comply with remote shut down requirements. This could help drive pricing down further on total system costs; thus, ~15 cents of cost reduction on the panel side would be supplemented by 5-10 cents of cost reduction on the balance of systems side, which could include ~5 cents reduction from inverters alone, particularly if SunRun is able to shift suppliers (with an equally competitive product at a lower cost)

However, costs are not likely to be reduced on the sales and marketing side in the near term as RUN continues to scale it's sales force and contends with continued shifts markets like California. On the other hand, pricing thus far has not come under pressure within specific markets - this follows from stated strategies from VSLR and SCTY management, particularly liquidity and cost management efforts outlined on previous earnings calls. RUN management sees PPA pricing reduction as unlikely since most other companies are incentivized more than usual to preserve capital and deploy most prudently - rather than chasing incremental customers - which could otherwise drive PPA competition.

In terms of channel shift, while direct sales did increase last quarter, the company emphasized focus on $1/w rather than specific channel outcomes. Total originations are further helped by the company's ~5% share in total industry originations from subsidiary Clean Energy Experts. Regardless, RUN continues to see the most value for PPA's compared to direct ownership models - primarily due to the ability for the company to offer lower rates via tax equity investment. In fact, a prepaid lease is in many instances more economic versus outright ownership for the same reason, according to management.

Lastly, management suggested required levered equity returns are in the 9-11% range and can access ~4.5% project debt.

Jinko Solar (JKS)

Module pricing by the end of Q2 entering the US was ~45 cents/w delivered cost including the tariff, but JKS expects to be able to completely circumvent the tariffs (through building out non-China manufacturing) in the second half of the year. Further capacity build-out paired with cost reductions (where total manufacturing costs could reach the 33-35 cent range by year end) should bring delivered ASP down to 40-41 cents by year end. According to mgmt, this equates to ~20% ASP reduction in the space of several months, below previous expectations. This has been driven in part by tier 2-3 suppliers within China who are increasingly being pushed to consolidate.

In the US specifically, utility scale drop off in 2017 would be countered through partnering more closely with residential installers like RUN, but JKS management is working through terms with SCTY in light of more complex requirements to lock in supply contracts.

On the module technology side, JKS is seeing increasing demand for high efficiency PERC technology and is adding 1GW of PERC capacity to meet the demand. Based on internal estimates, there are 10-15GW of PERC capacity worldwide, which would indicate oversupply of PERC products is less likely than the more pervasive multi modules. However, ASPs on PERC products are no longer generating substantially higher ASPs - more likely in the 1 cent premium range.

JKS management's top priority at this stage remains the Jinko Power spin off; though details are unclear both in terms of capital structure and timing (A-Share listing is the focus). Key impact according to management remains debt deconsolidation post spin off, given Jinko Power contains ~$1B of project debt. Assuming the company can hit current guidance for year end, eventual Jinko Power entity would contain 1.6-1.8GW of projects by the end of this year (and all assets would be fixed price) per mgmt. The company also discussed beginning efforts to build out international project development businesses, which could include efforts in regions like Mexico, Japan, the Middle East, and Argentina.

Canadian Solar (CSIQ)

Despite recent market disruptions from SUNE bankruptcy, there may be some opportunities to pick up incremental markets for developers. For example, Texas, North Carolina, and Virginia have seen more positive dynamics of late. On the whole, the company is unconcerned about project sales across most markets and has made notable progress towards selling them particularly in the Chinese and Canadian markets. US assets do appear more challenging to sell on a comparative basis, however, and the UK market is more uncertain following the EU referendum. The company continues to focus on a Q3 spin off time frame for Japanese assets. Overall, interest in asset purchases from strategic buyers like pension funds remains robust.

On the module side, CSIQ is running with very little inventory though the company has started to reign in factory utilization marginally. Blended cost by year end could be in the low 30 cent/w range (assuming high utilization), and management confirmed ~20% ASP reduction since July alone across core module markets.

SolarEdge (SEDG)

Despite commentary from some customers (such as our RUN comments cited earlier), SolarEdge management is not seeing Chinese string inverter competition actively undercutting pricing for immediate delivery in the market today, though they are clearly talking to some customers about future product opportunities - this is consistent with other comments suggesting pricing could come down in part due to inverter cost reduction into next year. While management acknowledged low cost competition will continue to come into the inverter space, the company does not see any issue with previously planned for 7-10% yearly ASP reduction. In terms of ability to maintain pricing in the face of these competitive pressures, SEDG products currently sell for ~40% premium to Chinese alternatives in the Netherlands yet SEDG continues to maintain top market share in the country. However, the US accounted for 68% of revenue in FY 2016 and sees some of the most aggressive pricing dynamics, particularly now that SEDG has gained market share above the ~30% mark for the residential market in the US. Future release of HD wave technology products are an example of focus on margin expansion as the company looks to differentiate on product offering, while management also suggested cost reduction efforts could be sped up if market pricing moves faster than previous expectations.

Outside the core markets, Japan and Australia are a key focus for the company, while India could provide interesting future opportunities as growth appears to be panning out more than in the past, per mgmt.

Customer makeup of late is one of the more notable shifts for SEDG. In previous years, SolarCity was as a high as 1/3 of revenue (and other large vertically integrated resi installers were similarly large) yet recent results show distributors shifting into the #1 customer slot at SEDG. In fact, while management could not offer specific insight into the shift to loan phenomenon, customer volumes have shifted in favor of distributors: companies that would most likely serve the cash sales/loan market.

JA Solar (JASO)

JA management sees pricing in the US today in the mid 40 cents per watt range, though the company did not have the same level of confidence vs other manufacturers around continued pace of ASP reductions. However, per mgmt, 100% utilization from tier 1 producers would suggest pricing could reach the high 30s by the end of the year in a more aggressive pricing scenario. Per mgmt, in a scenario where module producers sold at cash cost, pricing could reach as low as high 20s next year although this is unlikely according to management since this is unlike 2011-2012 where producers had negative gross margin. However, anecdotally, pricing behavior in the last few weeks appears to be bordering on the more aggressive side.

On the product side, management noted US installers like SCTY/VSLR/RUN continue to ask for increasingly high efficiency modules. Separately, China could release the 6th catalog for project FiT fulfillment in late Q4 this year.

Hannon Armstrong (HASI)

Management continues to focus on the slow and diversified approach to earnings growth, though the company reiterated 14-18% earnings growth in 2016 and double digit growth in 2017. Management noted that despite the falloff in the utility scale solar market in 2017, the business remains relatively insulated given other segments are largely uncorrelated.

Vivint (VSLR)

Assuming the SUNE deal would close, management did not close the 'normal' level of tax equity deals for the beginning of the year (which is the conventional tax equity 'season'). While SUNE would have been able to provide a number of tax equity funds, banks were unwilling per mgmt. to take additional exposure to VSLR at the time (under the assumption it would be acquired by SUNE) which has left the company with a relatively small amount of tax equity capacity. However, management is primarily focused on finishing the year with either current cash on hand or incremental debt facilities - 2017 tax equity possibilities are not expected to be nearly as challenging given the company is operating independently again. Management suggested tax equity funds would therefore not be an issue next year.

Separately, mgmt. is shifting more into cash sales and loans in light of limited tax equity capacity and consumer preferences. Management also shut down the C&I business, seeing as primarily a cash burn in the near term.

Sunnova – US Residential

Despite historic market share domination by vertically integrated resi installers, mgmt. emphasized that current execution difficulties could provide opportunity for specialized firms like Sunnova to pick up market share. By extension, a key question raised is whether the fully integrated model is the right approach. All in costs from Sunnova are just above the $3/w range today according to management, consistent with industry peers. Sunnova's defining financial attribute is mgmt's decision not to pursue tax equity, in lieu of an entirely conventional debt capital structure (levered at ~7x Debt/EBITDA), with overall construction targeted at ~10-11x EV/EBITDA. Mgmt admitted it is contemplating a tax equity structure as well as an ABS offering. Lastly, mgmt. emphasized its ability to execute across a wider geographic footprint vs peers given the confining limitations of tax equity lenders to conventional US markets (ex-islands).

Tenaska

The key question today is: who is making money in the solar value chain? In fact, there does not seem to be a good answer: equity returns, PPA prices, and system costs are all moving down in tandem, and prices bid in the 2019-2020 time frame are already in the ~$35/MWh range with escalators. In the near term, utility scale development seems to be shifting much more to the wind side, though solar development should pick up towards the end of the decade. Bottom line, equity investors in project development are taking more risk today (as margins thin) then they were in the past as competition continues to drive down margins and pricing.

Valuation Method and Risk Statement

Risks for Utilities and Independent Power Producers (IPPs) primarily relate to volatile commodity prices for power, natural gas, and coal. Risks to IPPs also stem from load variability, and operational risk in running these facilities. Rising coal and, to a certain extent, uranium prices could pressure margins as the fuel hedges roll off Competitive Integrateds. Further, IPPs face declining revenues as in the money power and gas hedges roll off. Other non-regulated risks include weather and for some, foreign currency risk, which again must be diligently accounted in the company's risk management operations. Major external factors, which affect our valuation, are environmental risks. Environmental capex could escalate if stricter emission standards are implemented. We believe a nuclear accident or a change in the Nuclear Regulatory Commission/Environment Protection Agency regulations could have a negative impact on our estimates.

Risks for regulated utilities include the uncertainty around the composition of state regulatory Commissions, adverse regulatory changes, unfavorable weather conditions, variance from normal population growth, and changes in customer mix. Changes in macroeconomic factors will affect customer additions/subtractions and usage patterns

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12-Month Rating	Definition	Coverage[1]	IB Services[2]
Buy	FSR is > 6% above the MRA.	47%	32%
Neutral	FSR is between -6% and 6% of the MRA.	38%	25%
Sell	FSR is > 6% below the MRA.	15%	21%
Short-Term Rating	**Definition**	**Coverage[3]**	**IB Services[4]**
Buy	Stock price expected to rise within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%
Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	<1%	<1%

Source: UBS. Rating allocations are as of 30 June 2016.
1:Percentage of companies under coverage globally within the 12-month rating category.
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UBS Securities LLC: Julien Dumoulin-Smith; Jerimiah Booream, CFA.

Company Disclosures

Company Name	Reuters	12-month rating	Short-term rating	Price	Price date
First Solar Inc[16]	FSLR.O	Neutral	N/A	US$36.42	13 Sep 2016
Hannon Armstrong Sustainable Infrastruct[13, 16]	HASI.N	Buy	N/A	US$23.10	13 Sep 2016
SolarCity Corp[16]	SCTY.O	Neutral	N/A	US$17.06	13 Sep 2016
Southern Company[2, 4, 5, 6a, 6b, 7, 16]	SO.N	Sell	N/A	US$51.26	13 Sep 2016
SunPower Corp[16]	SPWR.O	Buy	N/A	US$8.87	13 Sep 2016
Sunrun Inc[16]	RUN.O	Neutral	N/A	US$5.66	13 Sep 2016

Source: UBS. All prices as of local market close.
Ratings in this table are the most current published ratings prior to this report. They may be more recent than the stock pricing date

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