

Solar Flash

Breaking New Boundaries?

Equities

North America
Electric Utilities

Setting the new standard for utility scale solar PPAs at below \$40/MWh

NV Energy's record low 20-yr PPA with First Solar (FSLR) for 100 MW Playa Solar 2 project in Nevada for 3.87¢/kWh has established a new firm low for a signed PPA without meaningful state tax credits, albeit with a 3% cost inflator. The agreement affirms FSLR's target to reach sub \$1.00/Watt fully installed costs by 2017, although actual targeted costs were not disclosed. The committed dispatch implies a capacity factor for the project of 35%, at the very high end of what we've observed.

Similar SunPower Deal puts FSLR's PPA in perspective

While the 3.87¢/kWh is much acclaimed and at first glance signals a new era of PPA prices, the embedded 3% annual escalator brings it back to reality. In comparison, NV Energy has also signed a deal with SunPower for the 100 MW Boulder Solar project, which has a fixed 20 yr PPA of 4.6¢/kWh ([Docket 3615](#)). Over the life of the 20 year contract, the 3.87¢/kWh averages out to 5.08¢/kWh, bringing the record low near apples to apples with the 4.6¢/kWh offered by SPWR. Here too, the project implies a robust 33% capacity factor.

CAFD scores a twin win, benefitting from both FSLR & SPWR projects

The 2x100 MW projects from SPWR and FSLR are both expected to be dropped into the new CAFD vehicle, providing its first bit of good news following its broken IPO in recent weeks, likely generating ~\$21 Mn in unlevered CAFD (~\$0.10/W). One caveat to the deal includes a potential buy-out from the utility at the greater of fair market value or \$120 Mn (for the SPWR project) after year 6 or at the conclusion of the (we suspect the YieldCo will prove successful in keeping the project). We see this as just the latest indication that utilities will move to own these assets in ratebase if palatable at conclusion of tax credit recapture.

CAFD: A disclosure opportunity could provide relative uptick for shares

With CAFD below its recent IPO range, we see shares as increasingly attractive into its first quarterly update at which time we suspect mgmt will move to provide a real set of disclosures around its intentions with the vehicle. Specifically, we look for mgmt to both emphasize its relatively low payout (mid-70s) as well as improved comfort around mgmt's little described 13GW pipeline.

More ERCOT headwinds: Austin Energy RFP seeing sub-\$40/MWh PPAs as well

Of the cumulative ~8 GW of projects offered in the West Texas RFP, ~1.3 GW were proposed at sub 4¢/kWh PPA prices. The RFP is calling for up to 600 MW to be built, with a \$38/MWh indicative price (net of ITC benefit), inline with the prices seen in the latest NV Energy PPA. We see the potential for up to a further 600 MWs of procurement later this year by Austin Energy (as part of its 55% RPS) as another headwind to peak power price improvement in ERCOT. In contrast to wind deals, solar in Texas still requires a corresponding an entity to sponsor an above-market PPA.

What to expect in this week's flash...

In this edition we provide insight into the latest SUNE acquisition of a stake in Renova, highlight several mgmt. changes at FSLR, and flag SUNE's sale of its remaining SEM shares. Additionally, we evaluate the recent CA rate tier legislation, discuss the latest energy storage law in Oregon, provide color on the most recent Ivanpah developments, and compare the solar stock's performance relative to Chinese equities.

Julien Dumoulin-Smith

Analyst

julien.dumoulin-smith@ubs.com

+1-212-713 9848

Michael Weinstein

Associate Analyst

michael.weinstein@ubs.com

+1-212-713 3182

Paul Zimbardo

Associate Analyst

paul.zimbardo@ubs.com

+1-212-713 1033

Contents

What is on Clients' Minds.....	3
Renewable Events in the Week Ahead:	3
CAFD: The First Organic Development	4
NRG: Ivanpah faces growing pains but still very early	5
NYLD Desert Sunlight Analysis	7
CA Rate Reform Update.....	8
SUNE Projects 'Announced' in 2Q	10
Light Divestment of Renova to SUNE.....	11
SUNE De-Integrating	12
Oregon Energy Storage Legislation.....	13
FSLR Mgmt Changes	14
Week That Was: Best and Worst Performers	15

Julien Dumoulin-Smith

Analyst
julien.dumoulin-smith@ubs.com
+1-212-713 9848

Michael Weinstein

Associate Analyst
michael.weinstein@ubs.com
+1-212-713 3182

Paul Zimbardo

Associate Analyst
paul.zimbardo@ubs.com
+1-212-713 1033

What is on Clients' Minds

In an effort to keep all 'in the loop', we highlight our recent Alternative Energy reports below:

[YieldCos: Follow the Leader?](#)

[A Different Kind of YieldCo](#)

[Solar Primer: Champagne Supernova](#)

[Rooftop Solar IPO Race](#)

[Preparing for the California Rate Design Shift](#)

[Sizing Up the US Solar Market](#)

[Video: Sizing Up the US Solar Market](#)

[Does the future of solar belong with Utilities?](#)

[Breaking Down the Post ITC Economics](#)

[A New Take on Resi Solar: A Look at the Community Opportunity](#)

[NRG Yield: Paving the Road with Solar](#)

[SUNE: Poised to Perform](#)

[How Economic Is Residential Solar?](#)

Renewable Events in the Week Ahead:

All earnings call times are Eastern Standard Time unless otherwise noted.

Friday (7/10):

(1)

Monday (7/13):

(1) UBS Access: Meeting with SolarCity Policy Analyst @ 4pm ET, NYC

Tuesday (7/14):

(1)

Wednesday (7/15):

(1) UBS Access: 2Q Power & Utilities Preview Lunch @ 12pm ET, NYC

Thursday (7/23):

(1) UBS Access: 2Q Solar & Yieldco Preview Lunch @ 12pm ET, NYC

CAFD: The First Organic Development

We include our initial estimate of the SPWR project to be dropped into the CAFD vehicle upon project completion. We expect the project to be formally added to CAFD's ROFO list alongside next quarter updates.

Figure 1: Estimate of SPWR's project award in Nevada

Inputs									
General		Operational		Financing					
Mega Watts (AC)	100	PPA / kWh	\$0.046	Debt	55%				
Annual GWH Produced	289	OpEx / Year	\$ 2 MM	Total \$	\$ 107 MM				
Effective Tax	35%	OpEx / kWh	\$0.007	Cost of debt	5.5%				
Investor IRR	11.1%	Cap Factor	33%	Tenor	25				
System Price/W	\$1.50	Degradation factor	1%	Equity	45%				
Cash Grant (~27%)	\$52.65			Total \$	\$88.34				
Total Sale Price	\$ 195 MM			Debt Service	1.30				
		Unlevered IRR	6.9%						
		Levered IRR	10.9%						
Op Model									
MM \$ (except where noted otherwise)									
Year	Sum	2014	2015	2016	2017	2018	2019	2020	
\$ / kWh	0.04	0.00	0.00	0.05	0.05	0.05	0.05	0.05	
GWH	7,210	0.00	0.00	144.54	289.08	287.63	286.20	284.77	
Revenue (operational)	332	0.00	0.00	6.65	13.30	13.23	13.17	13.10	
Operational Expense	54	0.00	0.00	1.01	2.02	2.02	2.02	2.02	
EBITDA	278	0.00	0.00	5.64	11.27	11.21	11.14	11.08	
Depreciation	(169)	0.00	0.00	(16.87)	(16.87)	(53.98)	(32.39)	(19.43)	
EBIT	109	0.00	0.00	(11.23)	(5.59)	(42.77)	(21.24)	(8.36)	
Interest	(93)	0.00	(5.87)	(5.95)	(5.80)	(5.65)	(5.48)	(5.32)	
EBT	6	0.00	(5.87)	(17.18)	(11.39)	(48.41)	(26.73)	(13.67)	
Taxes Reduction (Expen	(6)	0.00	2.05	6.01	3.99	16.94	9.36	4.79	
Cash Grant	53		26.33	26.33	0.00	0.00	0.00	0.00	
Debt Service	(210)	0.00	4.34	8.67	8.62	8.57	8.52	8.47	
Equity Investment	(88)	0	(88)	0.00	0.00	0.00	0.00	0.00	
Pre Tax Cash Flow	28	0.00	(66.35)	23.29	2.65	2.64	2.62	2.61	
After Tax Cash Flow	23	0.00	(64.30)	29.30	6.64	19.58	11.98	7.39	
Unlevered Tax Cash Flow			(166.62)	37.98	15.26	28.15	20.50	15.86	
Unlevered After-Tax Cash Flow		6.855%							
Levered IRR after tax		10.881%							

Source: NV PUC and UBS estimates

NRG: Ivanpah faces growing pains but still very early

The Wall Street Journal released another article on June 12th ('High-Tech Solar Projects Fail to Deliver') regarding NRG's jointly-owned Ivanpah solar thermal asset in California as investors continue to question the technology in the face of solar PV's declining cost curve. The WSJ previously called the asset the "\$2.2 Billion Bird-Scorching Solar Project" and continues to focus on the performance to date that has not met initial projects. Ivanpah is one of the world's largest concentrating solar power (CSP) assets and was projected to generate 940,000MWh annually but only generated 419,000 in 2014 (45%). The asset is jointly owned by NRG (50%), Google (28%), and BrightSource (22%) with \$1.6Bn of Title XVII federal loan guarantees. NRG has applied for \$581Mn of cash grants for Ivanpah and has received \$485Mn and has \$1.2Bn of Ivanpah financing outstanding.







Despite operational initial teething issues, full operations remain ~2-year away

Following our latest review of Ivanpah's disclosures we have reduced our **near-term** adjusted EBITDA and CAFD estimates. Specifically we adjusted two assumptions:

- (1) Reduced capacity factor to 15% from 27%:** In 2014 the capacity factor was 12.2% and was approximately 15% in the first quarter of 2015. Our original estimate of 27% was consistent with 940,000MWh expected generation. This 45% reduction in our generation estimate is consistent with the shortfall in 2014 vs the originally projected generation. We maintain our capacity factor assumption in the longer-term at 27% reflecting full operations are achieved.
- (2) Increased O&M per kW-year to \$75 from \$64:** The higher cost structure is driven almost entirely due to fuel costs which totalled nearly \$4Mn in 2014 (\$9/MWh). The WSJ reports that the unit requires four hours of natural-gas each morning to support operations.

We caution that it is likely too soon to take such a punitive few on the asset on a longer-term basis as management has stressed that it originally contemplated a ~four year process to bring the asset up to full capacity and it is not yet halfway into that timeframe. While we are concerned, we take additional comfort in the fact that NRG Energy does have assets that it can drop into NRG Yield in the interim and still has years before it will likely sell the asset to NYLD.

Figure 2: Ivanpah 2014 Snapshot

Ivanpah 2014 Snapshot				
	Unit 1	Unit 2	Unit 3	Total
Capacity	125	133	133	391
Capacity Factor (%)	13.9%	11.1%	11.8% 	12.2%
Generation (MWh)	151,966	129,263	137,856	419,085
Fuel Cost (\$Mn)	1	1	1	4
Fuel per MWh	8.3	10.0	8.9 	9.0
Fixed O&M (\$Mn)	9	9	9	28
Fixed O&M per MWh	57.9	72.4	67.9	65.7
Fuel + O&M (\$Mn)	10	11	11	31
Fuel + O&M per MWh	66.2	82.4	76.8	74.7
UBSe				
	Updated	Previous		
O&M (\$/kW-yr)	\$75	\$64		
Capacity Factor (%)	15%	27%		
EBITDA	\$30	\$68		
CAFD	\$7	\$26		

Source: Company Filings, SNL Energy, Department of Energy, and UBS Estimates

Abengoa and Abengoa Yield also have exposure to solar thermal with Abengoa Solar advertising proprietary technology. Abengoa Solar operates the Solucar Complex (PS10 & PS20) in Spain which represents 31MW of capacity but there are aspirations to add more.

In September Abengoa S.A. purchased BrightSource Energy's 50% ownership in the Palen Solar thermal development project for an undisclosed amount. The Riverside California asset has faced pushback from the California Energy Commission on various fronts and was ultimately approved in a scaled down form (250MW with one power tower vs 500MW with two power towers previously). Following the scrutiny on Ivanpah, it remains to be seen whether Abengoa will ultimately continue with the development plan; however, Abengoa has disclosed that it plans some changes to the project such as adding storage and reliance on its own technology. BrightSource previously disclosed that the project was unlikely to qualify for ITCs given its 28-month construction cycle.

NYLD Desert Sunlight Analysis

Below we performed an analysis on NYLD's recent Desert Sunlight acquisition, showing an implied CAFD yield of 7.7%, generally lower than what we've seen of recent comps. In contrast, recent deals have been in the ~9% range. This PPA was signed in 2010 (estimated at \$150/MWh) at a significantly higher price than what is seen today, providing some element of contract risk at expiration (25-year tenor). We see this deal as rivalling TERP's latest Invenergy wind acquisition at an 8.4% levered yield as among the tightest thus far, continuing to illustrating the market highs for renewable assets.

Figure 3: NYLD Desert Sunlight Economics Breakdown

Desert Sunlight (NYLD from GE, June 2015)	
Income	
EBITDA	45
Cash Flow Available for Distribution (CAFD)	22
Capitalization	
Assumed Debt	287
Equity Paid	285
Total Price	572
Implied CAFD Yield	7.7%
EV/EBITDA	12.7
Capacity (MWs)	
Implied Equity \$/Watt	4.16
Implied EV \$/Watt	2.07
Capacity Factor	27%
GWh	325.22
O&M (\$/kW)	30
O&M (\$ Mn)	4.13
Rev (\$ Mn)	49.13
Implied PPA Price (\$/MWh)	151.05
PPA Vintage	CPUC 2010

Source: Company Filings, UBSe

CA Rate Reform Update

The highly debated 2-tier rate reform in CA was approved at a July 3rd vote by the CPUC. Tiers 1&2 will compress as will tiers 3&4. The consequences of the approval will be a 25% variance between the 2-tiers, as well as a surcharge for the highest (using over 400% of the average residential usage in CA) electricity users. Low-income customers qualify for discounts outside of the tiered structure.

The reforms, which were more similar to the Picker than the Florio proposal, outlined the transition that the reforms will take until full enforcement in 2019. The compromised plan between Picker and Florio was publicly endorsed by Florio.

- 2015: 4 tiers will remain but pricing will compress
- 2016: tiers cut to 3, difference between highest and lowest tiers will be 76%
- 2017: down to 2 tiers, 49% range between pricing
- 2018: 44% gap between tiers
- 2019: 25% gap between the 2 tiers

The decision effectively brings the lowest tier pricing up, and the highest tier pricing down, as well as enacts the contentious minimum bill of \$10/mo. The reforms will be gradually implemented through 2019, with the minimum bill set to be enacted in 2015 as one of the first aspects of the revisions to be applied.

The vote has been seen as a win for the utilities and the customers previously in the highest tiers who are seeing their rates decline, but a loss for the lower tier customers. In terms of the impacts on residential PV adoption, with the majority of the solar installations being done by the tier 3&4 customers, the reductions in their bills is seen by some to be a cause for concern for solar. We don't quite buy that, given the fact that even with the reductions, rates in CA are still some of the highest in the country, and as long as the economics still work and resi PV can still provide savings on the utility bill, adoption rates in the top tier will not be curtailed. Conversely, the bump in rates for the lower tier could incentivize lower-income customers on the border of being able to go solar to pursue it, as significant increases to their electricity bills will be more impactful.

Below, we highlight the current structure as well our predictions on what the new rates will look like. We flag that the range between tiers will likely be slightly greater than what we note below:

[Link to the document from the CPUC: R1206013](#)

The CPUC voted in favor of the 2-tier structure, with a range in pricing between the tiers of 25%

Rates will remain quite attractive for solar vendors at or above 20¢/KWh

The next policy question in California shifts to fixed tariffs

Figure 4: Summary of Current and Reformed California Rate Tier Structures

	SDG&E	PG&E	SCE
2012 GWhs sold (excluding low-income CARE program)			
Tier 1	3,425	13,193	10,132
Tier 2	670	2,455	2,162
Tier 3	1,031	3,477	3,303
Tier 4+	1,391	3,392	4,450
Tier 1	53%	59%	51%
Tier 2	10%	11%	11%
Tier 3	16%	15%	16%
Tier 4+	21%	15%	22%
Predicted % of kWhs sold after tier compression (non-CARE)			
Tier 1	63%	59%	51%
Tier 2	37%	41%	49%
Florio Alternative 3-Tier Decision (non-CARE)			
Tier 1	53%	59%	51%
Tier 2	26%	26%	27%
Tier 3	21%	15%	22%
Tier definitions % of baseline usage (current)			
Tier 1	100%	100%	100%
Tier 2	101%-130%	101%-130%	101%-130%
Tier 3	131%-200%	131%-200%	131%-200%
Tier 4+	>200%	>200%	>200%
Baseline is set at a % of average overall residential consumption			
% of average	55%	55%	53%
Tier definitions % of baseline usage (Proposed Decision)			
Tier 1	100%	100%	100%
Tier 2	>100%	>100%	>100%
Tier 3 (Florio Alt)	>200%	>200%	>200%
Current rate structure (\$/kWh; excluding CARE)			
Tier 1	\$0.148	\$0.132	\$0.128
Tier 2	\$0.171	\$0.150	\$0.160
Tier 3	\$0.337	\$0.311	\$0.272
Tier 4	\$0.357	\$0.351	\$0.312
Average	\$0.227	\$0.189	\$0.192
Est. Rate structure 2018 (\$/kWh; Proposed Decision, excluding CARE)			
Tier 1	\$0.241	\$0.195	\$0.199
Tier 2	\$0.289	\$0.235	\$0.241

Source: UBS Estimates

SUNE Projects 'Announced' in 2Q

SUNE completed an active 2Q of acquisitions, construction commencements, project developments, and RFP awards. While they have continued their momentum into 3Q, the list below only includes 2Q announcements. In total, SUNE acquired over 5.3 GW of projects in the quarter, with the majority of them set to be dropped into the Emerging Markets YieldCo subsidiary. Additionally, they were the chosen RFP bid on 3 projects, with 2 in South Africa and one in California, totaling 490 MW. 93 MW began operating, with 103 MW commencing construction, and 528 MW under development. The ~80% share that the acquisitions take relative to total 'announcements' reflects the initiative that mgmt. has pursued to stock the Terraform Global and TERP platforms with vast portfolios, as well as provide investors with significant visibility.

Figure 5: SUNE Project Announcements in 2Q15

Date	MW	Location	Type	Status	Description
June 29	521	Idaho, Oklahoma	Wind	Acquisition	Closing of Atlantic Power acquisition (operating)
June 16	242	India	Wind	Acquisition	Continuum Wind Energy acquisition: operating wind projects
June 16	170	India	Wind	Acquisition	Continuum acquisition: wind assets under construction
June 16	1,000	India	Wind	Acquisition	Continuum acquisition: wind power plants in development
June 16	243	Costa Rica, Honduras, Nicaragua	Wind	Acquisition	GME acquisition: 4 operating wind power plants
June 16	82	Costa Rica, Honduras, Nicaragua	Solar	Acquisition	GME acquisition: operating solar power plant
May 7	336	Brazil	Wind, hydro	Acquisition	Acquisition: Renova portfolio (operating)
May 7	149	China	Wind	Acquisition	Acquisition: Honiton portfolio (operating)
May 7	102	India	Wind	Acquisition	Acquisition: FERSA portfolio (operating)
May 7	73	Peru	Hydro	Acquisition	Acquisition: LAP portfolio (operating)
May 7	38	India	Solar	Acquisition	Acquisition: Chint portfolio (operating)
May 7	34	South Africa	Wind, solar	Acquisition	Acquisition: SA portfolio (operating)
May 7	26	Uruguay	Solar	Acquisition	Acquisition: Solarpack portfolio (operating)
May 7	2,206	Brazil	Wind, hydro	Acquisition	Acquisition: Renova portfolio (ROFO)
May 7	120	Peru	Hydro	Acquisition	Acquisition: LAP portfolio (ROFO)
TOTAL	5,342				
June 8	371	South Africa	Solar	Awarded	5 solar PV projects (REIPPP) awarded
May 21	33	Southern California	Solar	Awarded	Contracts awarded for rooftop solar, 17 plants operational in 2016
May 6	86	South Africa	Solar	Awarded	Awarded (REIPPP Programme)
TOTAL	490				
June 30	50	Central India (Madhya Pradesh)	Solar	Operating	Solar power plant completed
June 23	1	India	Solar	Operating	Solar power plant for Karnataka government agency
May 27	4	Milford, UT	Solar	Operating	Acquired from Call Right Projects List
April 28	36	Ontario	Solar	Operating	Completed two new power plants
April 2	2	Pokomoke City, MD	Solar	Operating	Completion of solar energy system
TOTAL	93				
June 16	80	Costa Rica	Wind	Under construction	wind farms entering construction
April 8	23	Utah	Solar	Under construction	Seven Sisters solar power plants
TOTAL	103				
June 16	246	Central America	Wind	Under development	Wind under development
May 28	14	Long Island, NY	Solar	Under development	Signed agreements for 7 solar power plants
May 12	3	Alameda County, CA	Solar	Under development	Agreement to install solar systems, part of second phase of R-REP
April 22	3	Winchendon, MA	Solar	Under development	Signed agreement to develop and install power plant
April 9	262	Utah	Solar	Under development	Signed agreement to construct and install 3 utility-scale power plants
TOTAL	528				

Source: Company Filings

Light Divestment of Renova to SUNE

SUNE acquires 15.87% stake in Renova from Light

Light announced an agreement with SUNE which establishes conditions for the sale of its 15.87% stake in Renova for \$250m (21% of Light's market cap). If the deal goes through, it should allow Light to (i) recognize a net gain of \$85m relative to the \$112m acquisition cost booked in 2011 and (ii) deleverage so as to focus on its core Distribution business. The deal price represents a premium of 35% over Renova's current market price, will be paid in SUNE shares and comes out in line with our expectations, although sooner than anticipated (companies have been in talks since May - please [click here](#) for further details).

Sale terms

The conclusion of this deal is contingent on waiver by Cemig and RR Participações on the 4-year lock-up conditions that specified prohibition of Light to sell its Renova stake before 2018. Note that Cemig (27% in Renova) and RR (16%) have priority rights to buy the Renova stake from Light, as well as rights to sell their respective stakes in Renova for the same price. BNDES (9%) also has rights to sell. SUNE indicated it will issue new shares to pay for this \$250m deal. Light could sell the SUNE shares in the market with no lock-up period.

The stake in Renova was included in the deal between SUNE and Renova for the acquisition of 336 MW of operating wind and hydro assets, along with 1.9 GW in ROFO. The deal to acquire the ~16% share in Renova contains the clause that allows the ROFO projects to be converted to call rights projects for SUNE.

[For more information, please click here to access the full report](#)

SUNE De-Integrating

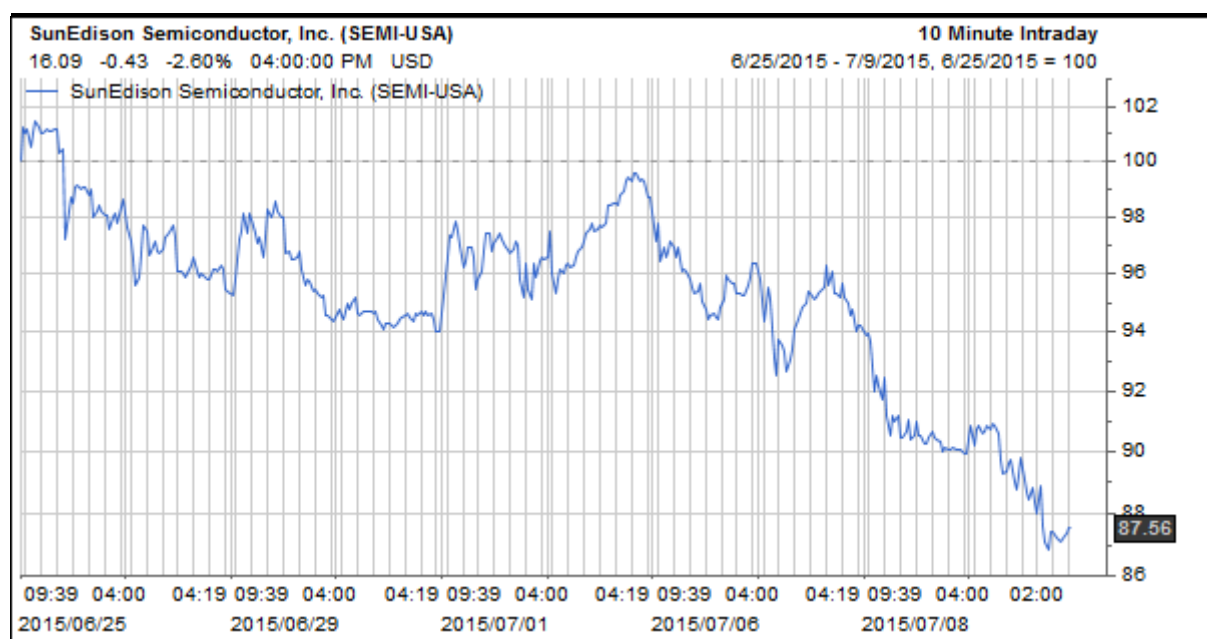
As expected, SUNE is selling its remaining 10.6 Mn shares in SunEdison Semiconductor (SEMI). SEMI announced a secondary offering of 15.9 Mn shares to the public at \$18.25/sh, through which shareholders' shares will be sold. Samsung is also selling its 5.3 Mn share stake in SEMI, expected to be worth \$97 Mn at the \$18.25/sh price. The move distances SUNE from its semiconductor roots, and emphasizes mgmt's focus on the development business and YieldCo subsidiaries.

Figure 6: Expected Raise Through SEMI Sale

Shareholder	Shares Held (Mn)	Price per Share	Expected Amount Raised Through Sale (Mn)
SUNE	10.6	\$18.25	\$193
Samsung	5.3	\$18.25	\$97

Source: Company Filings

Figure 7: SEMI 10 Day Stock Performance



Source: Factset

Oregon Energy Storage Legislation

- Legislation has been passed in Oregon that requires all electricity distributors serving 25,000 or more customers (Portland General Electric & PacifiCorp) to submit proposals for one or more energy storage systems with the capacity of at least 5 MWh
- The law is technology agnostic
- The commission is required to adopt guidelines for the proposal submissions by Jan. 1, 2017
- The proposals are required to be submitted on or before Jan. 1, 2018
- The max capacity of the proposals is 1% of the electric company's peak loads respectively
 - PGE max= 3.9 GW
 - PacifiCorp max= 2.4 GW

FSLR Mgmt Changes

In an SEC filing, FSLR noted internal shuffling of their mgmt. team. The changes are highlighted below:

Figure 8: FSLR Role Changes

Name	New Role	Old Role
Philip de Jong	COO	SVP, Manufacturing & EPC
Georges J. Antoun	President, US	COO
Joseph G. Kishkill	President, International	CCO
Mark Widmar (CFO)	<i>Dropping supplementary role as Principal Accounting Officer</i>	
Bryan Schumaker	Chief Accounting Officer	VP, Corporate Controller

Source: Company Filings

Week That Was: Best and Worst Performers

Weekly Solar Company and YieldCo Performance

BENCHMARKS	Ticker	5 Day Return	YTD Return	RSI (14Day)	New High/Low?
S&P500	SPY	-1.2%	-0.3%	27.9	N/A
Guggenheim Solar ETF	TAN	-8.6%	3.3%	17.2	N/A

YELDCOs and MLPs	Ticker	5 Day Return	YTD Return	RSI (14Day)	New High/Low?
Abengoa Yield PLC	ABY	1.8%	18.0%	21.9	N/A
Dominion Midstream Partners	DM	-2.0%	-2.8%	28.1	N/A
Hannon Armstrong Sustainable Infrac.	HASI	3.6%	45.7%	50.6	N/A
Pattern Energy Group A	PEGI	0.5%	17.2%	39.7	N/A
Transalta Renewables	RNW-CA	-0.3%	8.2%	43.0	N/A
TerraForm Power	TERP	3.3%	26.4%	56.1	N/A
NextEra Energy Partners, LP	NEP	1.9%	18.5%	23.5	N/A
NRG Yield Inc.	NYLD	-0.5%	na	29.2	New Low
Average		1.0%	18.7%	36.5	

YELDCOs and MLPs	Ticker	5 Day Return	YTD Return	RSI (14Day)	New High/Low?
First Solar Inc	FSLR	-3.4%	-2.1%	14.9	N/A
SunPower Corp	SPWR	-5.5%	0.6%	8.5	N/A
SunEdison Inc	SUNE	-2.0%	49.8%	34.4	N/A
SolarCity Corp	SCTY	-0.6%	-2.8%	24.7	N/A
Vivint Solar Inc	VSLR	0.1%	18.8%	26.2	N/A
SolarEdge	SEDG	-22.7%	na	22.4	N/A
Canadian Solar	CSIQ	-6.4%	6.0%	21.4	N/A
Trina Solar	TSL	-12.8%	8.5%	19.2	N/A
Average		-6.7%	11.2%	21.5	

Source: FactSet

Solar & YieldCos Comps Table

	Ticker	Rating	Market Cap. (\$ in millions)	Price 7/9/2015	Price Target	P/E multiple						Earnings Per Share					
						2013E	2014E	2015E	2016E	2017E	2018E	2013E	2014E	2015E	2016E	2017E	2018E
SOLARCOs																	
First Solar Inc	FSLR	Neutral	4,401	43.65	60.00	10.0	16.8	8.7	9.5	10.6	11.6	4.36	2.60	5.00	4.60	4.10	3.76
SunPower Corp	SPWR	Neutral	3,462	25.98	31.00	15.6	20.2	20.0	14.1	11.4	11.9	1.67	1.29	1.30	1.84	2.28	2.18
SunEdison Inc.	SUNE	Buy	8,021	29.22	29.66	nm	nm	nm	nm	nm	107.1	-0.87	-0.95	-1.09	-0.87	-0.40	0.27
Canadian Solar Inc.	CSIQ	Not Rated	1,428	25.64	NA	6.2	6.2	9.2	10.1	8.9	na	4.11	4.12	2.78	2.54	2.90	na
Hanwha Q Cells Co.	HQCL	Not Rated	143	14.34	NA	na	na	nm	na	na	na	na	na	-2.48	na	na	na
JA Solar Holdings Co.	JASO	Not Rated	371	7.36	NA	8.4	7.6	8.7	5.2	4.5	na	0.88	0.97	0.85	1.43	1.62	na
JinkoSolar Holding Co.	JKS	Not Rated	760	24.45	NA	9.9	9.7	7.3	6.2	5.0	na	2.48	2.51	3.36	3.94	4.85	na
Real Goods Solar, Inc.	RGSE	Not Rated	7	1.46	NA	nm	nm	nm	na	na	na	-1.20	-1.10	-0.78	na	na	na
ReneSola Ltd.	SOL	Not Rated	114	1.31	NA	nm	nm	nm	nm	nm	na	-0.40	-0.38	-0.52	-0.43	-0.07	na
SolarCityCorp	SCTY	Not Rated	5,035	51.98	NA	nm	nm	nm	nm	nm	nm	-3.88	-3.77	-6.32	-6.85	-5.42	-2.20
SolarEdge Technologies Inc.	SEDG	Not Rated	1,092	27.91	NA	na	na	51.7	23.6	15.8	17.9	na	na	0.54	1.19	1.76	1.56
Trina Solar Ltd.	TSL	Not Rated	857	10.05	NA	13.6	12.4	10.3	8.2	5.4	na	0.74	0.81	0.98	1.22	1.87	na
Vivint Solar Inc.	VSLR	Not Rated	1,160	10.95	NA	nm	nm	nm	nm	nm	nm	-1.99	-0.81	-2.25	-2.89	-2.52	-3.11
Yingli Green Energy Holding Co.	YGE	Not Rated	165	0.91	NA	nm	nm	nm	nm	nm	na	-1.21	-0.85	-0.74	-0.44	-0.75	na
Zep Inc.	ZEP	Not Rated	#N/A	20.04	NA	24.7	23.6	23.6	na	na	na	0.81	0.85	0.85	na	na	na
Enphase	ENPH	Not Rated	259	5.87	NA	97.8	nm	25.5	7.8	6.1	4.6	0.06	0.00	0.23	0.75	0.96	1.28
Average						23.3	13.8	18.3	10.6	8.5	30.6	0.4	0.4	0.1	0.5	0.9	0.5
	Rating		Market Cap. (\$ in millions)	Price 7/9/2015	Price Target	Dividend Yield (%)						Dividend Growth Rate					
						2013E	2014E	2015E	2016E	2017E	2018E	2013E	2014E	2015E	2016E	2017E	2018E
PRIMARY YELDCOs																	
Abengoa Yield PLC	ABY	Not Rated	2,578	32.23	N/A	na	1.72%	5.13%	6.74%	7.69%	8.69%	na	na	198%	31%	14%	13%
8point3 Energy Partners	CAFD	Neutral	358	17.90	21.00	na	0.00%	3.22%	5.08%	6.10%	7.15%	na	na	na	57%	20%	17%
Hannon Armstrong Sustainable Ini	HASI	Buy	674	20.73	22.00	na	5.12%	5.13%	6.00%	7.20%	8.44%	na	na	0%	17%	20%	17%
NextEra Energy Partners LP	NEP	Neutral	748	39.98	44.00	na	1.88%	2.80%	3.23%	3.73%	4.28%	na	na	49%	15%	16%	15%
NRG Yield	NYLD.A	Neutral	1,697	21.95	27.00	5.47%	6.56%	3.62%	4.28%	5.06%	5.97%	na	20%	-45%	18%	18%	18%
Pattern Energy Group A	PEGI	Not Rated	2,002	28.91	N/A	4.99%	4.99%	4.98%	5.73%	6.42%	7.63%	na	0%	0%	15%	12%	19%
Terraform Power	TERP	Buy	5,690	39.04	49.00	na	3.32%	3.42%	4.14%	4.97%	4.61%	na	na	3%	21%	20%	-7%
Tranasisla Renewables	RNW-C	Not Rated	2,370	12.42	N/A	6.53%	6.53%	6.53%	6.76%	7.08%	7.25%	na	0%	0%	4%	5%	2%
Average						5.7%	3.8%	4.4%	5.2%	6.0%	6.8%	6.7%	29.3%	22.4%	15.6%	11.8%	
SECONDARY YELDCOs																	
Algonquin Power & Utilities Corp.	AQN-C/	Not Rated	2,183	9.14	NA	na	4.86%	5.15%	5.69%	na	na	na	na	6%	10%	na	na
Brookfield Renewable Energy Par	BEP.UT	Not Rated	9,733	35.30	NA	na	4.61%	4.91%	5.28%	5.61%	5.95%	na	na	6%	8%	6%	6%
Capital Power Corporation	CPX-C/	Not Rated	2,155	21.13	NA	na	6.60%	7.02%	7.32%	na	na	na	na	6%	4%	na	na
Capstone Infrastructure Corporatio	CSE-C/	Not Rated	290	3.09	NA	na	9.71%	9.71%	9.71%	9.71%	na	na	na	0%	0%	0%	na
Greencoat UK Wind Plc	UKW-G/	Not Rated	499	1.08	NA	na	5.69%	5.66%	5.82%	5.92%	na	na	na	0%	3%	2%	na
Innergex Renewable Energy Inc.	INE-CA	Not Rated	1,053	10.40	NA	na	5.96%	6.06%	6.15%	na	na	na	na	2%	2%	na	na
Renewables Infrastructure Group I	TRIG-G	Not Rated	533	1.02	NA	na	6.19%	6.39%	6.49%	na	na	na	na	3%	2%	na	na
Saeta Yield SA	SAY-ES	Not Rated	763	9.36	NA	na	7.46%	7.73%	8.23%	7.70%	7.48%	na	na	4%	7%	-6%	-3%
Average						NA	6.4%	6.6%	6.8%	7.2%	6.7%	NA	3.3%	4.4%	0.3%	1.6%	

Source: UBS estimates for companies under coverage; all others are Factset

Statement of Risk

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 Integrations. 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.

Required Disclosures

This report has been prepared by UBS Securities LLC, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates are referred to herein as UBS.

For information on the ways in which UBS manages conflicts and maintains independence of its research product; historical performance information; and certain additional disclosures concerning UBS research recommendations, please visit www.ubs.com/disclosures. The figures contained in performance charts refer to the past; past performance is not a reliable indicator of future results. Additional information will be made available upon request. UBS Securities Co. Limited is licensed to conduct securities investment consultancy businesses by the China Securities Regulatory Commission.

Analyst Certification: Each research analyst primarily responsible for the content of this research report, in whole or in part, certifies that with respect to each security or issuer that the analyst covered in this report: (1) all of the views expressed accurately reflect his or her personal views about those securities or issuers and were prepared in an independent manner, including with respect to UBS, and (2) no part of his or her compensation was, is, or will be, directly or indirectly, related to the specific recommendations or views expressed by that research analyst in the research report.

UBS Investment Research: Global Equity Rating Definitions

12-Month Rating	Definition	Coverage ¹	IB Services ²
Buy	FSR is > 6% above the MRA.	45%	36%
Neutral	FSR is between -6% and 6% of the MRA.	42%	32%
Sell	FSR is > 6% below the MRA.	13%	20%
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.	less than 1%	less than 1%
Sell	Stock price expected to fall within three months from the time the rating was assigned because of a specific catalyst or event.	less than 1%	less than 1%

Source: UBS. Rating allocations are as of 30 June 2015.

1:Percentage of companies under coverage globally within the 12-month rating category. 2:Percentage of companies within the 12-month rating category for which investment banking (IB) services were provided within the past 12 months.

3:Percentage of companies under coverage globally within the Short-Term rating category. 4:Percentage of companies within the Short-Term rating category for which investment banking (IB) services were provided within the past 12 months.

KEY DEFINITIONS: **Forecast Stock Return (FSR)** is defined as expected percentage price appreciation plus gross dividend yield over the next 12 months. **Market Return Assumption (MRA)** is defined as the one-year local market interest rate plus 5% (a proxy for, and not a forecast of, the equity risk premium). **Under Review (UR)** Stocks may be flagged as UR by the analyst, indicating that the stock's price target and/or rating are subject to possible change in the near term, usually in response to an event that may affect the investment case or valuation. **Short-Term Ratings** reflect the expected near-term (up to three months) performance of the stock and do not reflect any change in the fundamental view or investment case. **Equity Price Targets** have an investment horizon of 12 months.

EXCEPTIONS AND SPECIAL CASES: **UK and European Investment Fund ratings and definitions are:** **Buy:** Positive on factors such as structure, management, performance record, discount; **Neutral:** Neutral on factors such as structure, management, performance record, discount; **Sell:** Negative on factors such as structure, management, performance record, discount. **Core Banding Exceptions (CBE):** Exceptions to the standard +/-6% bands may be granted by the Investment Review Committee (IRC). Factors considered by the IRC include the stock's volatility and the credit spread of the respective company's debt. As a result, stocks deemed to be very high or low risk may be subject to higher or lower bands as they relate to the rating. When such exceptions apply, they will be identified in the Company Disclosures table in the relevant research piece.

Research analysts contributing to this report who are employed by any non-US affiliate of UBS Securities LLC are not registered/qualified as research analysts with the NASD and NYSE and therefore are not subject to the restrictions contained in the NASD and NYSE rules on communications with a subject company, public appearances, and trading securities held by a research analyst account. The name of each affiliate and analyst employed by that affiliate contributing to this report, if any, follows.

UBS Securities LLC: Julien Dumoulin-Smith; Michael Weinstein; Paul Zimbardo.

Unless otherwise indicated, please refer to the Valuation and Risk sections within the body of this report.

Global Disclaimer

This document has been prepared by UBS Securities LLC, an affiliate of UBS AG. UBS AG, its subsidiaries, branches and affiliates are referred to herein as UBS.

Global Research is provided to our clients through UBS Neo, the UBS Client Portal and UBS.com (each a "System"). It may also be made available through third party vendors and distributed by UBS and/or third parties via e-mail or alternative electronic means. The level and types of services provided by Global Research to a client may vary depending upon various factors such as a client's individual preferences as to the frequency and manner of receiving communications, a 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 UBS and legal and regulatory constraints.

When you receive Global Research through a System, your access and/or use of such Global Research is subject to this Global Research Disclaimer and to the terms of use governing the applicable System.

When you receive Global Research via a third party vendor, e-mail or other electronic means, your use shall be subject to this Global Research Disclaimer and to UBS's Terms of Use/Disclaimer (<http://www.ubs.com/global/en/legalinfo2/disclaimer.html>). By accessing and/or using Global Research in this manner, you are indicating that you have read and agree to be bound by our Terms of Use/Disclaimer. In addition, you consent to UBS processing your personal data and using cookies in accordance with our Privacy Statement (<http://www.ubs.com/global/en/legalinfo2/privacy.html>) and cookie notice (<http://www.ubs.com/global/en/homepage/cookies/cookie-management.html>).

If you receive Global Research, whether through a System or by any other means, you agree that you shall not copy, revise, amend, create a derivative work, transfer to any third party, or in any way commercially exploit any UBS research provided via Global Research or otherwise, and that you shall not extract data from any research or estimates provided to you via Global Research or otherwise, without the prior written consent of UBS.

For access to all available Global Research on UBS Neo and the Client Portal, please contact your UBS sales representative.

This document is for distribution only as may be permitted by law. It is not directed to, or intended for distribution to or use by, any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation or would subject UBS to any registration or licensing requirement within such jurisdiction. It is published solely for information purposes; it is not an advertisement nor is it a solicitation or an offer to buy or sell any financial instruments or to participate in any particular trading strategy. No representation or warranty, either expressed or implied, is provided in relation to the accuracy, completeness or reliability of the information contained in this document ('the Information'), except with respect to Information concerning UBS. The Information is not intended to be a complete statement or summary of the securities, markets or developments referred to in the document. UBS does not undertake to update or keep current the Information. Any opinions expressed in this document may change without notice and may differ or be contrary to opinions expressed by other business areas or groups of UBS. Any statements contained in this report attributed to a third party represent UBS's interpretation of the data, information and/or opinions provided by that third party either publicly or through a subscription service, and such use and interpretation have not been reviewed by the third party.

Nothing in this document constitutes a representation that any investment strategy or recommendation is suitable or appropriate to an investor's individual circumstances or otherwise constitutes a personal recommendation. Investments involve risks, and investors should exercise prudence and their own judgement in making their investment decisions. The financial instruments described in the document may not be eligible for sale in all jurisdictions or to certain categories of investors. Options, derivative products and futures are not suitable for all investors, and trading in these instruments is considered risky. Mortgage and asset-backed securities may involve a high degree of risk and may be highly volatile in response to fluctuations in interest rates or other market conditions. Foreign currency rates of exchange may adversely affect the value, price or income of any security or related instrument referred to in the document. For investment advice, trade execution or other enquiries, clients should contact their local sales representative.

The value of any investment or income may go down as well as up, and investors may not get back the full (or any) amount invested. Past performance is not necessarily a guide to future performance. Neither UBS nor any of its directors, employees or agents accepts any liability for any loss (including investment loss) or damage arising out of the use of all or any of the Information.

Any prices stated in this document are for information purposes only and do not represent valuations for individual securities or other financial instruments. There is no representation that any transaction can or could have been effected at those prices, and any prices do not necessarily reflect UBS's internal books and records or theoretical model-based valuations and may be based on certain assumptions. Different assumptions by UBS or any other source may yield substantially different results.

This document and the Information are produced by UBS as part of its research function and are provided to you solely for general background information. UBS has no regard to the specific investment objectives, financial situation or particular needs of any specific recipient. In no circumstances may this document or any of the Information be used for any of the following purposes:

- (i) valuation or accounting purposes;
- (ii) to determine the amounts due or payable, the price or the value of any financial instrument or financial contract; or
- (iii) to measure the performance of any financial instrument.

By receiving this document and the Information you will be deemed to represent and warrant to UBS that you will not use this document or any of the Information for any of the above purposes or otherwise rely upon this document or any of the Information.

Research will initiate, update and cease coverage solely at the discretion of UBS Investment Bank Research Management. The analysis contained in this document is based on numerous assumptions. Different assumptions could result in materially different results. The analyst(s) responsible for the preparation of this document may interact with trading desk personnel, sales personnel and other parties for the purpose of gathering, applying and interpreting market information. UBS relies on information barriers to control the flow of information contained in one or more areas within UBS into other areas, units, groups or affiliates of UBS. The compensation of the analyst who prepared this document is determined exclusively by research management and senior management (not including investment banking). Analyst compensation is not based on investment banking revenues; however, compensation may relate to the revenues of UBS Investment Bank as a whole, of which investment banking, sales and trading are a part.

For financial instruments admitted to trading on an EU regulated market: UBS AG, its affiliates or subsidiaries (excluding UBS Securities LLC) acts as a market maker or liquidity provider (in accordance with the interpretation of these terms in the UK) in the financial instruments of the issuer save that where the activity of liquidity provider is carried out in accordance with the definition given to it by the laws and regulations of any other EU jurisdictions, such information is separately disclosed in this document. For financial instruments admitted to trading on a non-EU regulated market: UBS may act as a market maker save that where this activity is carried out in the US in accordance with the definition given to it by the relevant laws and regulations, such activity will be specifically disclosed in this document. UBS may have issued a warrant the value of which is based on one or more of the financial instruments referred to in the document. UBS and its affiliates and employees may have long or short positions, trade as principal and buy and sell in instruments or derivatives identified herein; such transactions or positions may be inconsistent with the opinions expressed in this document.

United Kingdom and the rest of Europe: Except as otherwise specified herein, this material is distributed by UBS Limited to persons who are eligible counterparties or professional clients. UBS Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. **France:** Prepared by UBS Limited and distributed by UBS Limited and UBS Securities France S.A. UBS Securities France S.A. is regulated by the ACPR (Autorité de Contrôle Prudentiel et de Résolution) and the Autorité des Marchés Financiers (AMF). Where an analyst of UBS Securities France S.A. has contributed to this document, the document is also deemed to have been prepared by UBS Securities France S.A. **Germany:** Prepared by UBS Limited and distributed by UBS Limited and UBS Deutschland AG. UBS Deutschland AG is regulated by the Bundesanstalt für Finanzdienstleistungsaufsicht (BaFin). **Spain:** Prepared by UBS Limited and distributed by UBS Limited and UBS Securities España SV, SA. UBS Securities España SV, SA is regulated by the Comisión Nacional del Mercado de Valores (CNMV). **Turkey:** Distributed by UBS Limited. No information in this document is provided for the purpose of offering, marketing and sale by any means of any capital market instruments and services in the Republic of Turkey. Therefore, this document may not be considered as an offer made or to be made to residents of the Republic of Turkey. UBS AG is not licensed by the Turkish Capital Market Board under the provisions of the Capital Market Law (Law No. 6362). Accordingly, neither this document nor any other offering material related to the instruments/services may be utilized in connection with providing any capital market services to persons within the Republic of Turkey without the prior approval of the Capital Market Board. However, according to article 15 (d) (ii) of the Decree No. 32, there is no restriction on the purchase or sale of the securities abroad by residents of the Republic of Turkey. **Poland:** Distributed by UBS Limited (spółka z ograniczoną odpowiedzialnością) Oddział w Polsce regulated by the Polish Financial Supervision Authority. Where an analyst of UBS Limited (spółka z ograniczoną odpowiedzialnością) Oddział w Polsce has contributed to this

document, the document is also deemed to have been prepared by UBS Limited (spółka z ograniczoną odpowiedzialnością) Oddział w Polsce. **Russia:** Prepared and distributed by UBS Bank (OOO). **Switzerland:** Distributed by UBS AG to persons who are institutional investors only. UBS AG is regulated by the Swiss Financial Market Supervisory Authority (FINMA). **Italy:** Prepared by UBS Limited and distributed by UBS Limited and UBS Italia Sim S.p.A. UBS Italia Sim S.p.A. is regulated by the Bank of Italy and by the Commissione Nazionale per le Società e la Borsa (CONSOB). Where an analyst of UBS Italia Sim S.p.A. has contributed to this document, the document is also deemed to have been prepared by UBS Italia Sim S.p.A. **South Africa:** Distributed by UBS South Africa (Pty) Limited (Registration No. 1995/011140/07), an authorised user of the JSE and an authorised Financial Services Provider (FSP 7328). **Israel:** This material is distributed by UBS Limited. UBS Limited is authorised by the Prudential Regulation Authority and regulated by the Financial Conduct Authority and the Prudential Regulation Authority. UBS Securities Israel Ltd is a licensed Investment Marketer that is supervised by the Israel Securities Authority (ISA). UBS Limited and its affiliates incorporated outside Israel are not licensed under the Israeli Advisory Law. UBS Limited is not covered by insurance as required from a licensee under the Israeli Advisory Law. UBS may engage among others in issuance of Financial Assets or in distribution of Financial Assets of other issuers for fees or other benefits. UBS Limited and its affiliates may prefer various Financial Assets to which they have or may have Affiliation (as such term is defined under the Israeli Advisory Law). Nothing in this Material should be considered as investment advice under the Israeli Advisory Law. This Material is being issued only to and/or is directed only at persons who are Eligible Clients within the meaning of the Israeli Advisory Law, and this material must not be relied on or acted upon by any other persons. **Saudi Arabia:** This document has been issued by UBS AG (and/or any of its subsidiaries, branches or affiliates), a public company limited by shares, incorporated in Switzerland with its registered offices at Aeschenvorstadt 1, CH-4051 Basel and Bahnhofstrasse 45, CH-8001 Zurich. This publication has been approved by UBS Saudi Arabia (a subsidiary of UBS AG), a Saudi closed joint stock company incorporated in the Kingdom of Saudi Arabia under commercial register number 1010257812 having its registered office at Tatweer Towers, P.O. Box 75724, Riyadh 11588, Kingdom of Saudi Arabia. UBS Saudi Arabia is authorized and regulated by the Capital Market Authority to conduct securities business under license number 08113-37. **Dubai:** The information distributed by UBS AG Dubai Branch is intended for Professional Clients only and is not for further distribution within the United Arab Emirates. **United States:** Distributed to US persons by either UBS Securities LLC or by UBS Financial Services Inc., subsidiaries of UBS AG; or by a group, subsidiary or affiliate of UBS AG that is not registered as a US broker-dealer (a **'non-US affiliate'**) to major US institutional investors only. UBS Securities LLC or UBS Financial Services Inc. accepts responsibility for the content of a document prepared by another non-US affiliate when distributed to US persons by UBS Securities LLC or UBS Financial Services Inc. All transactions by a US person in the securities mentioned in this document must be effected through UBS Securities LLC or UBS Financial Services Inc., and not through a non-US affiliate. **Canada:** Distributed by UBS Securities Canada Inc., a registered investment dealer in Canada and a Member-Canadian Investor Protection Fund, or by another affiliate of UBS AG that is registered to conduct business in Canada or is otherwise exempt from registration. **Brazil:** Except as otherwise specified herein, this material is prepared by UBS Brasil CCTVM S.A. to persons who are eligible investors residing in Brazil, which are considered to be: (i) financial institutions, (ii) insurance firms and investment capital companies, (iii) supplementary pension entities, (iv) entities that hold financial investments higher than R\$300,000.00 and that confirm the status of qualified investors in written, (v) investment funds, (vi) securities portfolio managers and securities consultants duly authorized by Comissão de Valores Mobiliários (CVM), regarding their own investments, and (vii) social security systems created by the Federal Government, States, and Municipalities. **Hong Kong:** Distributed by UBS Securities Asia Limited and/or UBS AG, Hong Kong Branch. **Singapore:** Distributed by UBS Securities Pte. Ltd. [MCI (P) 016/09/2014 and Co. Reg. No.: 198500648C] or UBS AG, Singapore Branch. Please contact UBS Securities Pte. Ltd., an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110); or UBS AG, Singapore Branch, an exempt financial adviser under the Singapore Financial Advisers Act (Cap. 110) and a wholesale bank licensed under the Singapore Banking Act (Cap. 19) regulated by the Monetary Authority of Singapore, in respect of any matters arising from, or in connection with, the analysis or document. The recipients of this document represent and warrant that they are accredited and institutional investors as defined in the Securities and Futures Act (Cap. 289). **Japan:** Distributed by UBS Securities Japan Co., Ltd. to professional investors (except as otherwise permitted). Where this document has been prepared by UBS Securities Japan Co., Ltd., UBS Securities Japan Co., Ltd. is the author, publisher and distributor of the document. Distributed by UBS AG, Tokyo Branch to Professional Investors (except as otherwise permitted) in relation to foreign exchange and other banking businesses when relevant. **Australia:** Clients of UBS AG: Distributed by UBS AG (Holder of Australian Financial Services License No. 231087). Clients of UBS Securities Australia Ltd: Distributed by UBS Securities Australia Ltd (Holder of Australian Financial Services License No. 231098). Clients of UBS Wealth Management Australia Ltd: Distributed by UBS Wealth Management Australia Ltd (Holder of Australian Financial Services License No. 231127). This Document contains general information and/or general advice only and does not constitute personal financial product advice. As such, the information in this document has been prepared without taking into account any investor's objectives, financial situation or needs, and investors should, before acting on the information, consider the appropriateness of the information, having regard to their objectives, financial situation and needs. If the information contained in this document relates to the acquisition, or potential acquisition of a particular financial product by a 'Retail' client as defined by section 761G of the Corporations Act 2001 where a Product Disclosure Statement would be required, the retail client should obtain and consider the Product Disclosure Statement relating to the product before making any decision about whether to acquire the product. The UBS Securities Australia Limited Financial Services Guide is available at: www.ubs.com/ecs-research-fsg. **New Zealand:** Distributed by UBS New Zealand Ltd. The information and recommendations in this publication are provided for general information purposes only. To the extent that any such information or recommendations constitute financial advice, they do not take into account any person's particular financial situation or goals. We recommend that recipients seek advice specific to their circumstances from their financial advisor. **Korea:** Distributed in Korea by UBS Securities Pte. Ltd., Seoul Branch. This document may have been edited or contributed to from time to time by affiliates of UBS Securities Pte. Ltd., Seoul Branch. **Malaysia:** This material is authorized to be distributed in Malaysia by UBS Securities Malaysia Sdn. Bhd (Capital Markets Services License No.: CMSL/A0063/2007). This material is intended for professional/institutional clients only and not for distribution to any retail clients. **India:** Prepared by UBS Securities India Private Ltd. (Corporate Identity Number U67120MH1996PTC097299) 2/F, 2 North Avenue, Maker Maxity, Bandra Kurla Complex, Bandra (East), Mumbai (India) 400051. Phone: +912261556000. It provides brokerage services bearing SEBI Registration Numbers: NSE (Capital Market Segment): INB230951431, NSE (F&O Segment) INF230951431, NSE (Currency Derivatives Segment) INE230951431, BSE (Capital Market Segment) INB010951437; merchant banking services bearing SEBI Registration Number: INM000010809 and research services. UBS AG, its affiliates or subsidiaries may have debt holdings or positions in the subject Indian company/companies. Within the past 12 months, UBS AG, its affiliates or subsidiaries may have received compensation for non-investment banking securities-related services and/or non-securities services from the subject Indian company/companies. With regard to information on associates, please refer Annual Report at: http://www.ubs.com/global/en/about_ubs/investor_relations/annualreporting.html

The disclosures contained in research documents produced by UBS Limited shall be governed by and construed in accordance with English law.

UBS specifically prohibits the redistribution of this document in whole or in part without the written permission of UBS and UBS accepts no liability whatsoever for the actions of third parties in this respect. Images may depict objects or elements that are protected by third party copyright, trademarks and other intellectual property rights. © UBS 2015. The key symbol and UBS are among the registered and unregistered trademarks of UBS. All rights reserved.

