US Electric Utilities & IPPs

Wither the West: Dynegy's California Divestment

Equities

Americas
Electric Utilities

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

First step is acknowledging there is a problem: Putting CA assets on the block

Following its successful capital raise last week Dynegy has reported (in its SEC filings) that is in the early stages of a process to divest its 2,700MW predominated gas California fleet which could fetch ~$325Mn. While we remain positive on the outlook for the PJM, New England, and MISO markets overall, we remain concerned about California. While Dynegy's exposure is diluted post-sale, we see the announcement as having broader strategic implications for all the IPPs (AES, NRG, CPN) – and is in-line with SRE's own pending sale of its Mesquite CCGT in coming months in AZ. We think prices on DYN's crown jewel CCGT, Moss Landing 1&2 will prove depressed in the ~$200/kW range, the lowest valuation implied for a CCGT in any region nationally – but potentially still accretive. Buyers of any assets are likely limited to private equity funds and regional utilities (non-CA utes).

What does California mean for Dynegy? Too much attention for too few assets

The proposed ECP/Duke transaction would bring the CA concentration by capacity down to 11% from 20%. On a 2016E adjusted EBITDA basis the contrast is even more stark: the contribution would decline to 4% from 12%. With California now essentially a de minimis component of the company, we see it as logical to divest these and allow management to focus on integrating its newly acquired 12.4GW in PJM and New England. Notably, with meaningful regulatory effort necessary to contract the units (bilateral RA negotiations for capacity, etc), DYN mgmt simply does not see the scale to be involved.

Dynegy's strategy complements NRG Energy pushing these assets to NYLD

We see the selldown of NRG's California exposure to NRG Yield as part of the underlying YieldCo strategy to diversify the parent away from California. NYLD already holds both the 720MW Marsh Landing peaker and 550MW El Segundo CCGT, both of which have contracts expiring in 2023 (with PCG and SCE, respectively). We expect management to drop-down the 500MW Walnut Creek CT in SoCal with another 285MW of wind before the end of the year. NRG Energy still has 6.2GW of conventional California assets (ex-Walnut Creek) which notably includes the 600MW Encina, Carlsbad plant which the company is actively trying to secure a PPA for with SDG&E. Longer-term, the terminal value in YieldCo's (particularly NYLD with its shorter tenor gas deals) could prove compressed given pricing trajectories in the state, emphasizing concentrated exposure to the state.

Calpine remains among the most exposed to the thesis

While Dynegy's CA portfolio represents a very small portion of its value, Calpine has 6.7GW of conventional CA generation, or ~23% of capacity, but over 30% of 2016E adjusted EBITDA (entire West segment is 40% of consolidated adj. EBITDA). Currently we apply an 8x EV / EBITDA versus 9x for the rest of the portfolio given the above market nature of several of its PPA contracts. We continue to see diversification/dilution away from the state as a strategic priority (hence recent northeast acquisitions).

Drought holding up California spark spreads – for now…

We continue to believe that power prices remain elevated vs. fundamental levels largely on account of the drought masking the underlying pressures from continued renewables growth. We include charts below of Spark spreads in the state, which have proven stable delivery despite accelerating solar deployment expectations.

The Power Line on Dynegy – and California:

Dynegy appears poised to seriously consider selling its California fleet, potentially raising ~$300Mn to deploy elsewhere or use to offset new capital market issuances. The read through for peer IPPs Calpine (6.7GW) and NRG Energy (6.2GW) could be quite negative as a sale of a relatively new CCGT in the ~$200kW range could set depressed expectations for their conventional California fleets.

Valuations for its Oakland and Morro Bay sites are likely near scrap, with both underlying real estate – and transmission interconnection rights the most valuable elements. Additionally, Moss Landing 6&7's above-market contract through end of its life (due to once-through cooling retirements in 2017), is likely worth a discounted NPV of cash flows, as well as some residual site value.

As for Moss Landing, its once-through-compliance conditions could yet require retrofits (likely less than ~$20 Mn), making the sale price further depressed. Its location is clearly disadvantaged, without the ability to contract out for its full capacity value and only high single-digit spark spreads (net of carbon costs). It is likely that a sale price for Moss would represent a 'low' mark for gas valuations.

We don't think California will see the southeast sale premium. In contrast to the relatively high multiples realized by Calpine in its 1H14 sell-down in the Southeast, of the bulk of its exposure, we see little line of sight to improved contract value – or sales/contracts to utilities on anything but bare minimum terms.

Despite the depressed valuations for the plants, we see the sale as modestly accretive. we had assumed no value for Morro and Oakland in our SOP, and simply DCF of Moss 6/7 cash flows. Meanwhile, our EBITDA projections of $10-20 Mn for Moss imply a valuation of $100-200 Mn in our SOP applying a typical multiple.

With a dearth of power transactions to reflect upon in the West, Dynegy's sale could anchor expectations quite low.

We see a sale as accretive for Dynegy despite the low values

Is this part of an implicit trend in the industry to de-emphasize the state?

Yes, with NRG spin of NYLD a similar move in some respects

Dynegy: Setting The Mark in California

Divesting the California assets would result in dilution to near-term adjusted EBITDA but we see a sale as largely value neutral. After reviewing our California segment more closely we see additional value for the segment (up ~$1/sh to $2/sh) but still see minimal value here relative to the balance of the portfolio.

California comprises less than 5% of our Dynegy valuation.

Figure 1: Dynegy California Value ($/kW Basis)

Dynegy California Portfolio Potential Transaction Value						
Asset	**Location**	**Fuel**	**Dispatch**	**MW**	**$/kW**	**Value ($Mn)**
Moss Landing						
Units 1-2	Monterey County, CA	Gas CCGT	Intermediate	1,020	200	$204
Units 6-7	Monterey County, CA	Gas	Peaking	1,509	50	75
Oakland	Oakland, CA	Oil	Peaking	165	152	25
Morro Bay*	Morrow Bay, CA	N/A	N/A	650	31	20
* Transmission Capacity		**Total**		**2,694**		**$324**
		Total per Sh				**$2.21**

Source: Company Filings and UBS Estimates

Dynegy's portfolio is comprised of Moss Landing, Oakland, and the retired Morrow Bay with most of the value at the Moss CCGTs. We apply a 9x EV / EBITDA multiple to the contributions from Moss Units 1 & 2 in-line with our other segments as well as an NPV approach for the peakers (Moss Units 6 & 7 and Oakland). Morrow Bay was retired in February of this year but still has transmission capacity for 650MW which could make it ideal for repurposing as we elaborate on later but for conservatism we do not place value here. On a $/kW basis our valuation for Moss Units 1 & 2 backs into a ~$175/kW basis although it is hard to believe that a CCGT would transact at such a level, even in a depressed market place. With Oakland generating essentially zero EBITDA we ascribe minimal salvage value (akin to Morro Bay). While there could be upside to our valuation if management is able to get more than $200/kW for Moss Landing Units 1 & 2, the price delta for the segment would likely be in the ~2-3% ballpark.

If Moss Landing 1 & 2 are sold for $200/kw (~10x EV / EBITDA) and the balance of the portfolio for NPV/repurpose value, the ultimate price could be around ~$300Mn.

Figure 2: Dynegy California Value (SOTP)

Dynegy California UBSe Valuation		
Assets	**Value ($Mn)**	**Methodology**
Moss Units 1&2	$178	9X EV / EBITDA
CA Peakers	97	NPV & FCF
Morro Bay	-	
Total ($Mn)	$275	
Total ($/Sh)	**$1.88**	

Source: Company Filings and UBS Estimates

Our latest Dynegy consolidated adjusted EBITDA estimates are below reflecting the latest California review.

Figure 3: Dynegy Estimated Adjusted EBITDA

Pro-Forma Dynegy-Ameren Estimates	2014E	2015E	2016E	2017E	2018E
Midwest (Dynegy Inc.)	155	221	202	189	187
West	52	60	65	39	27
Northeast	187	169	135	133	161
Illinois Power Holdings (Standalone)	81	83	88	108	123
PRIDE Reloaded (Mostly Gross Margin/Not O&M)		48	85	85	85
Consolidated G&A	(100)	(100)	(100)	(100)	(100)
Pro-Forma DYN-DUK-ECP Open EBITDA Estimates					
Duke Energy Ohio	202	424	308	309	372
Duke Operational Synergies		22	48	48	48
Energy Capital Partners	383	570	456	495	458
ECP Operational Synergies	-	8	12	12	12
Balance Sheet Efficiencies	-	20	20	20	20
Options Drag (4Q11-2012)					
Adj. Pro-Forma Combined Deal EBITDA	960	1,525	1,319	1,338	1,393
Guidance		1200-1400 --> 1400-1600?			
Adj. EBITDA (Standalone DYN + IPH)	375	480	475	454	484

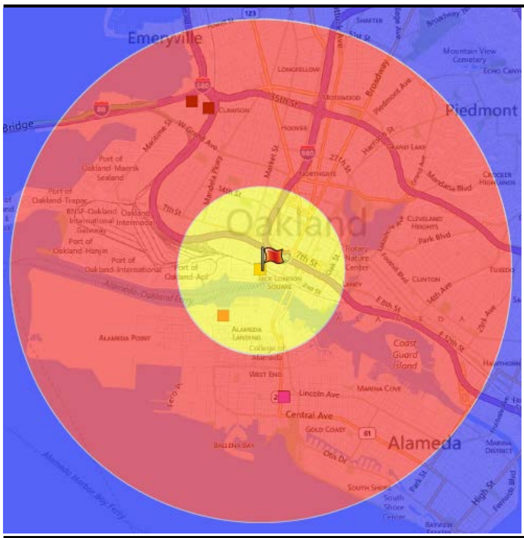
Source: Company Filings and UBS Estimates

Repowering Higher: For Waves, Repower, or Reuse?

Earlier this year Dynegy filed with FERC to conduct studies into the potential for wave power generation at the Morro Bay site but early estimates have put the total price tag for the GWave project at ~$1Bn, likely uneconomic for a project of that scale. Naturally a conventional repowering remains a possibility, although unlikely given the same economics that were a factor in the asset's retirement. More interesting is the grid storage opportunity with CA AB2514 state law that mandates that local utilities purchase a certain amount of energy storage. **As we highlighted in a recent storage note**, Navigant forecasts ~200MW of PJM battery storage capacity but the opportunity in California could be far greater given the intermittency issues in the state.

Dynegy's Oakland peaker lacks the transmission capacity that Morro Bay has but has a premium location. With a five-mile radius around the plant there was a population of 425K in 2013 that is projected to grow at 0.95% CAGR through 2018 (versus 0.71% for the national average).

Figure 4: Dynegy's Oakland Peaker



Source: SNL

Figure 5: Population Statistics for Oakland Plant

Oakland Plant Demographics (2013)		
Radius	**Population**	**Households**
1-Mile	23,901	11,270
3-Mile	200,510	89,872
5-Mile	425,584	178,773

Source: SNL

Below we present our estimates for Dynegy's Western assets. The Moss Landing CCGTs are forecasted to generate ~$20Mn of EBITDA based upon ~$2/kW-month in System RAs for 750MW of capacity from 2015-2017. Further details are available in our note from November 2013, **'California Becomes the Focus'**.

Moss 1&2: RA Capacity 693MW w./ Avg Sold 3Q14 200MW w./ Avg Sold 3Q15

Figure 6: Dynegy's Western Assets Adj. EBITDA Estimates – Moss Landing 1 & 2

Dynegy Western Assets					
CCGT - Moss Landing 1&2	2014E	2015E	2016E	2017E	2018E
Revenue	143	130	132	143	150
Moss Landing CC	3.1	3.0	2.9	3.1	3.1
Capacity	1,020	1,020	1,020	1,020	1,020
Capacity Factor	35%	34%	33%	35%	35%
NP15 Onpeak ($/MWh)	47	45	46	48	50
PG&E Citygate ($/MMBtu)	5	4	4	5	5
Spark Spread - NP15	10	9	9	9	9
Carbon Cost ($/t)	12	12	12	12	12
Gross Margin (Spark)	32	27	28	29	29
Premium to Peak	10%	10%	10%	10%	10%
Fuel Cost	111	103	104	114	122
O&M	26	26	26	26	26
O&M ($/MWh)	5	5	5	5	5
O&M ($/kW-yr)	25	25	25	25	25
Energy EBITDA	6	2	2	3	3
Capacity on 1&2	693	750	750	750	1020
Capacity/Tolling Payments	9	17	17	17	24
Tolling Agreements ($/KW-yr)	14	23	23	23	23
EBITDA with Capacity	16	19	20	21	27

Source: Company Filings, Platts, and UBS Estimates

We estimate that the capacity contract for Moss Landing 6 & 7 is around $3.25-$3.25/kW-month which drives the profile here. We assume that Oakland generates essentially zero EBITDA and opt for conservatism by ascribing no value to Morro Bay's salvage value. Our assumptions *assume* a re-contracting for the last year of the asset at a price slightly below (~$2/kW-mo) the median system-RA price (~$2.40/kW-mo) reported by the CEC in its latest annual report.

Figure 7: Dynegy's Western Assets Adj. EBITDA Estimates – Moss Landing 6 & 7 Plus Oakland

West - Peaking Portfolio	2014E	2015E	2016E	2017E	2018E
Oakland: Operating Under RMR					
Capacity (MW)	165	165	165	165	165
From EQR Filings					
Uplift Rev					
Capacity					
Total	4	4	4	4	4
Implied $/kW-yr	24	24	24	24	24
O&M (≈ to Rev)	4	4	4	4	4
EBITDA	-	-	-	-	-
Moss Landing 6&7 (Peaking): Retires due to OTC Issues @ 12/31/2017					
Capacity (MW)	1,509	1,509	1,509	1,509	-
From EQR Filings					
Uplift Rev (Energy Indexed)					
Capacity (Availability Payments)					
Revenue (from contracts data)					
Other Revenue (MWh, etc)					
Total	54	59	63	36	-
Implied $/kW-yr	36	39	42	24	-
Estimated O&M ($/KW-yr)	12	12	12	12	-
O&M ($ Mn)	18	18	18	18	-
EBITDA	36	41	45	18	-
Morro Bay: Retired Feb 2014 (OTC)					
California Total					
Gross Margin (All 3)	58	63	67	40	4
Calculated O&M ($ Mn)	22	22	22	22	4
O&M (Plug)					
California EBITDA - Peakers	36	41	45	18	-

Dynegy Western Assets EBITDA Sum	2014E	2015E	2016E	2017E	2018E
Moss Landing 1&2 (CCGT)	16	19	20	21	27
Peakers	36	41	45	18	0
Total West EBITDA	52	60	65	39	27

Source: Company Filings, Platts, and UBS Estimates

With a handle on the assets, who are possible buyers? Not so clear. And neither are the comps.

Wayzata has not only owned assets in California, but remains active in unconventional power markets with its pending Utah purchase from EXC.

Conventional generation comp set is far from ideal.

With the larger IPPs (NRG Energy and Calpine) already saturated with California exposure and Exelon avoiding the market due to "projections in California of potentially negative pricing during the middle of the day because [of] an over-application of renewables", the number of potential buyers is quite slim, further depressing valuation expectation. Despite NRG Energy having been involved in the potential transaction to acquire these assets in 2010, we do not see them as likely given the developments in the state since then on the renewables front. Wayzata Investment Partners purchased the 45MW Red Bluff and 48MW Chowchilla gas peakers in California 2007 from NRG Energy before flipping them to EWP Renewables four years later, highlighting the partnership's knowledge of the market already. The purchase price on the California transaction was not disclosed; however, NRG Energy recorded a $18Mn pre-tax gain. Wayzata is also a partial owner in the Arizona Plant Gila River where UNS Electric is purchasing the 550MW Unit 3 for $219Mn, or $400/kW. Wayzata is also involved in a potential transaction with Exelon for its Utah West Valley plant for a reported $70-90Mn (~$375/kW) as the firm has shown a willingness to acquire and operate assets outside of traditional markets.

Sempra is past and present seller in the market

Ratebasing merchant assets provides upside for Arizona utilities, including PNW.

Sempra sold 625MW of its 1,250MW Mesquite Plant in Arizona for $371Mn last year and has reported that it has engaged advisors for a potential sale of the balance of the asset. We look for Sempra Energy to announce in coming months of its last merchant power plant sale in the state, Mesquite, as it seeks to fully divest its power exposure. Salt River Project (SRP), among other regional utilities could yet opt to purchase the plant (it bought the first units) amidst continued re-regulation of the merchant assets in the state. This could be a positive datapoint for shares, boding well for APS' comparable moves likely in 2015 or early 2016 associated with its next rate case filing (exit repurchase options are already embedded within certain of its existing PPAs which expire in coming years). We emphasize Mesquite has contract prices associated with it.

Figure 8: Western Power Comps – It is a Thin Grouping on Conventional Side

Western Power Comps						
Asset	Location	Fuel	Date	MW	$/kW	Value ($Mn)
Mesquite Power	Maricopa, AZ	Gas	2013	625	594	$371
Gila River 3	Maricopa, AZ	Gas	2013	550	398	$219
West Valley	Salt Lake, UT	Gas	2014	189	423	$80

Source: SNL Energy, Company Filings, and UBS Estimates

AES: Repowering the SoCal Fleet to Keep Earnings Intact

The Southland portfolio contributes upwards of ~$0.10 in EPS

We expect AES management to continue to seek to divest contracted assets in an effort to capitalize on the 'YieldCo bid' for such assets, both domestically as well as abroad. We specifically look towards efforts to both contract for the re-powering of Huntington Beach, as well as re-sell the asset. We expect its Southland portfolio to garner increasing scrutiny as its CAGR rolls forward to 2018/2019 (when its existing above-market tolling arrangement rolls-off – and when the plants without a further repowering contract will be mandated to retire for compliance with California's once-through-cooling regulations).

We apply a 6x EV / EBITDA multiple to Southland for AES which is comprised of Alamitos, Huntington Beach, and Redondo Beach assets. The assets have PPAs which expire as follows:

Collectively Southland is worth ~$1/sh in our AES $15 valuation.

- Alamitos (2,075MW): May 2018
- Huntington Beach (474MW): Partial contract through December 2018
- Redondo Beach (1,392MW): May 2018

Repowering opportunity still? The entire portfolio faces a once-through cooling consideration- making the portfolio a retirement candidate by ~2020. AES may yet announce a repowering contract with SCE for its Huntington Beach asset (a clear YieldCo sell-down candidate in that case).

Energy storage site? We see sites impacted by once-through cooling considerations as key site to install energy storage/battery solutions. Given AES' past experience in this regard, it might prove particularly successful in receiving contracts to this end.

Figure 9: AES Southland Estimates

AES Southland	2013A	2014E	2015E	2016E	2017E	2018E	2019E
Total Capacity	4,235	4,235	4,235	4,235	4,235	4,235	4,235
Generation (Mn MWh)	3,444	3,444	3,444	3,444	3,444	3,444	3,444
Capacity Utilization (%)	9.28%	9.28%	9.28%	9.28%	9.28%	9.28%	9.28%
Revenues ($/kW-yr)	40	40	40	40	40	24	24
Revenues ($/kW-month)							
Revenues	169	169	169	169	169	102	102
O&M Expense ($ Mn)							
Total O&M ($ Mn)	51	51	51	51	51	51	51
Total O&M ($/KW-yr)	12.0	12.0	12.0	12.0	12.0	12.0	12.0
EBITDA	119	119	119	119	119	51	51

Source: Company Filings and UBS Estimates

NRG Yield an effective monetization tool but NRG Energy still has concentration in CA

We flag NRG has exposure to thermal assets- and increasingly renewable assets- in California through both its legacy portfolio, GenOn acquisition, and Edison Mission portfolio. We see some risk as being allayed through the sale of these assets to its affiliate, NRG Yield. We generally see NRG Yield as an effective monetization tool to mitigate its risk, with NRG Yield itself having sizable long-term exposure to the state.

Notably, much of the portfolio generates limited EBITDA for NRG with its Long Beach Assets, El Segundo, Marsh Landing, and Walnut Creek assets generating the vast majority of EBITDA and FCF. We estimate California represents ~15-20% of total EBITDA for consolidated NRG, excluding renewables. This is a further ~15-20% of the company, albeit under long-term (~20-year) contracts.

Figure 10: NRG Plants in California (excluding Renewables) – Walnut Creek Next In-Line to be Monetized to NYLD

Power Plant	Fuel Type		MW	Heat Rate	MWh
Sunrise Power Project	Combined Cycle		574	NA	NA
Walnut Creek Energy Park	Gas Turbine		495	NA	NA
Midway Sunset Cogeneration	Gas Turbine		249	NA	NA
Watson Cogeneration	Combined Cycle		398	NA	NA
		Total- EME	1,716		
Pittsburg Power	Steam Turbine		1,311	1.02	13,496
Coolwater Generating Station	Steam Turbine		145	0.40	23,152
Coolwater Generating Station CC	Combined Cycle		491	6.06	11,163
Ellwood Generating Station	Gas Turbine		54	NA	NA
Etiwanda Generating Station	Steam Turbine		640	4.59	13,733
Mandalay Generating Station	Steam Turbine	NRG Energy	430	5.74	11,782
Mandalay Generating Station CT	Gas Turbine		130	0.15	40,205
Ormond Beach Generating Station	Steam Turbine		1,516	4.32	10,684
		Total- GenOn	4,717		
Encina	Steam Turbine		950	5.79	12,923
Long Beach CT	Gas Turbine		260	1.07	16,168
NRG Energy San Diego	Internal Combustion		2	NA	NA
El Cajon	Gas Turbine		16	NA	NA
El Segundo Repowering	Combined Cycle		573	11.47	8,174
Encina CT	Gas Turbine		14	1.83	17,116
Kearny	Gas Turbine		136	NA	NA
Miramar	Gas Turbine		36	NA	NA
		Total- NRG	1,987		
El Segundo Power	Steam Turbine		335	8.50	12,129
Marsh Landing Generating Station	Gas Turbine		788	1.09	12,648
		Total- NYLD	1,123		
		Total- NRG	9,543		

Source: SNL

Calpine: What's In a Name?

Calpine remains the most exposed to the state and we re-include below a table of contract expirations for the company, listing plants by order of chronological off-take expiration. We suspect the bulk of the contract rolloffs will see limited risks, with Calpine's real exposure to energy prices with most of its fleet being combined cycle (and generating meaningful generation).

Further details on Calpine and California overall are available in our notes 'Sunburnt in California' and 'Squeezing the Most of California's Parched Outlook'.

Figure 11: Calpine's Merchant Exposure in California & The West

California Portfolio	Unit MW	TWhs	CF	Contract Status	Energy Merchant?
Metcalf	605	**3.20**	61%	Merchant	Yes
Delta	857	**5.65**	76%	RA	Yes
Sutter	578	**1.04**	21%	RA	Yes
Gilroy Cogen	130	**0.13**	11%	RA	Yes
Los Medanos (again)	572	**3.50**	71%	RA	Yes
Calpine-defined California 'Merchant'		**13.52**			
Commodity Margin		90			
Implied Spark Spread ($/MWh)		6.66			
Geysers	725	**6.28**	100%	RA	Yes
South Point	530	**1.90**	41%	Merahnt	
Hermiston (OR)	635	**3.66**	67%	Merchant	Yes
Grand Total West	**4,632**	**25.35**	**63%**		

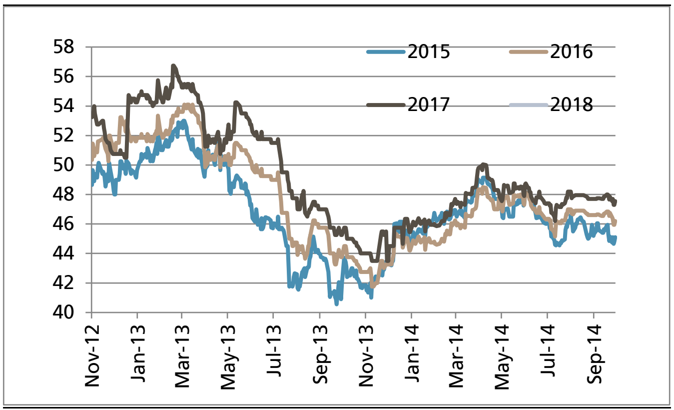
Source: Company Filings and UBS Estimates

Commodity Views on California

Fundamentally, we continue to see meaningful long-term pressures on California forwards as the drought normalizes in future years. We continue to believe that power prices remain elevated vs. fundamental levels largely on account of the drought masking the underlying pressures from continued renewables growth.

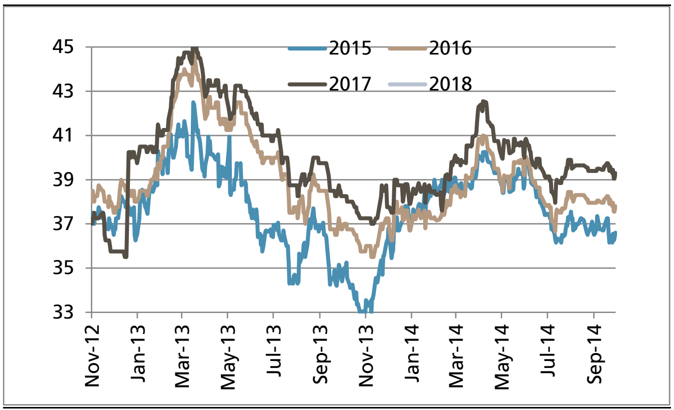
The charts below show evolution of on-peak and off-peak power prices for the NP15 market. Both curves have seen meaningful recovery from their floors seen last winter, and they have risen over the early part of the year as expectations for drought built up.

Figure 12: On-Peak NP15 Prices ($/MWh)



Source: Platts

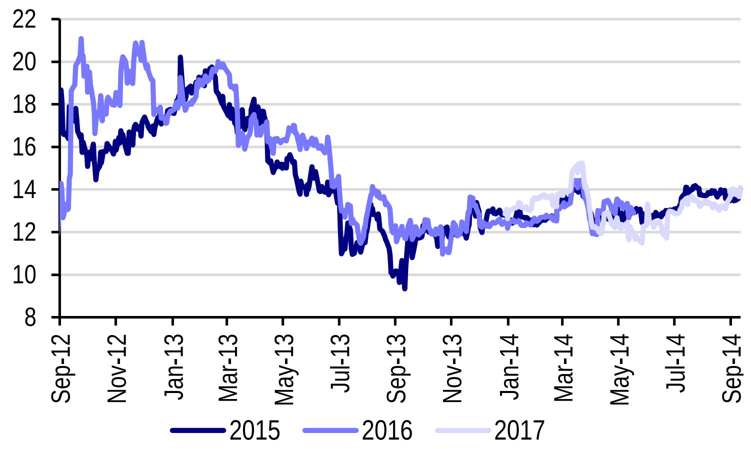
Figure 13: Off-Peak N15 Prices ($/MWh)



Source: Platts

We flag spark spreads have proved relatively intact for much of the last year despite growing expectations for renewable deployment (offsetting drought impacts). Here, we emphasize that sparks are indeed slightly backwardated, with 2017 below 2015.

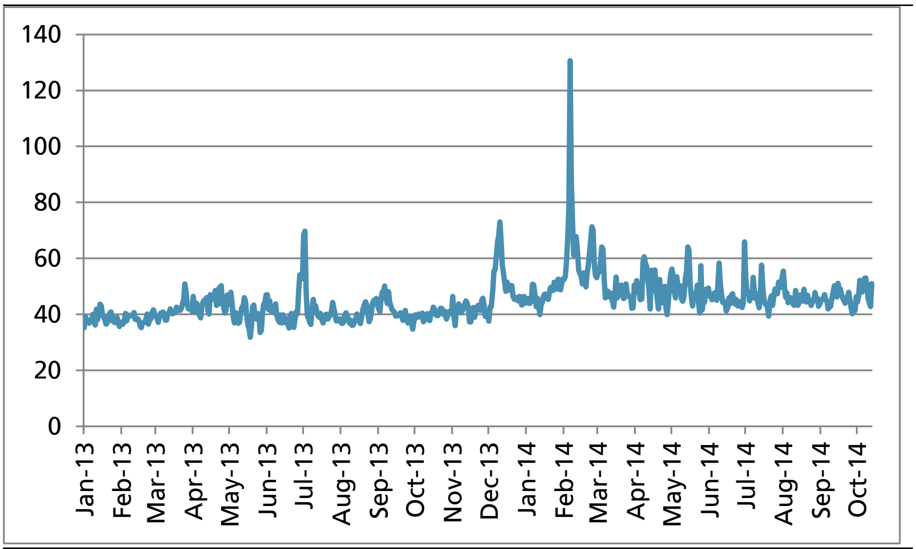
Figure 14: NP15-PG&E Citygate Spark Spread @ 7.2 Heat Rate ($/MWh)



Source: Platts and UBS estimates; *not* adjusted for CO_2

Spot prices in 3Q were higher YoY, as higher temperatures were recorded alongside the drought conditions encountered. We believe Calpine may yet report constructive results on the back of a positive surprise in this market.

Figure 15: CAISO North Bay 24 Hour Average Price

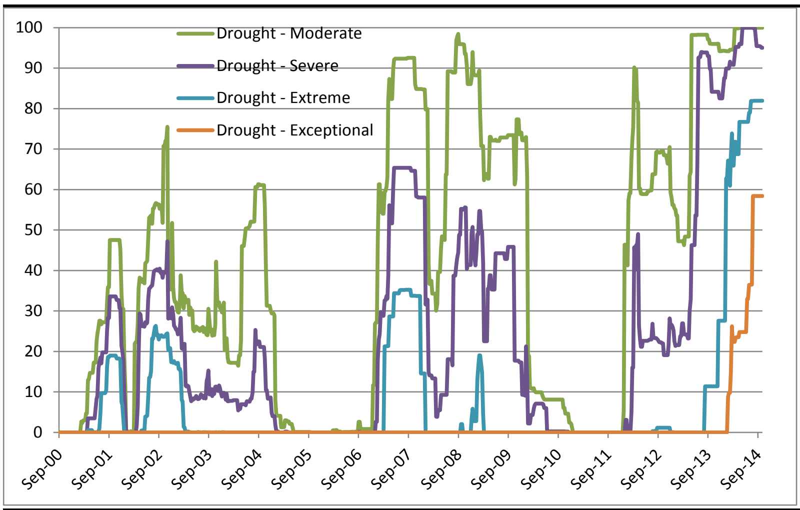


Source: Bloomberg

The drought is masking underlying supply shift we think

If the drought is taken out of the equation, we are overall increasingly bearish on the outlook for the California power market amidst accelerating renewables – solar in particular - penetration in the state. However, to provide context, we include California drought data since 2000, illustrating the severity is actually worse than that triggering the last power crisis in the state, when it was sizably more dependent on hydro power.

Figure 7: California drought data (2000-present): much worse this time.



Source: NOAA

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 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

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.	47%	34%
Neutral	FSR is between -6% and 6% of the MRA.	42%	28%
Sell	FSR is > 6% below the MRA.	11%	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.	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 September 2014.
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.

Company Disclosures

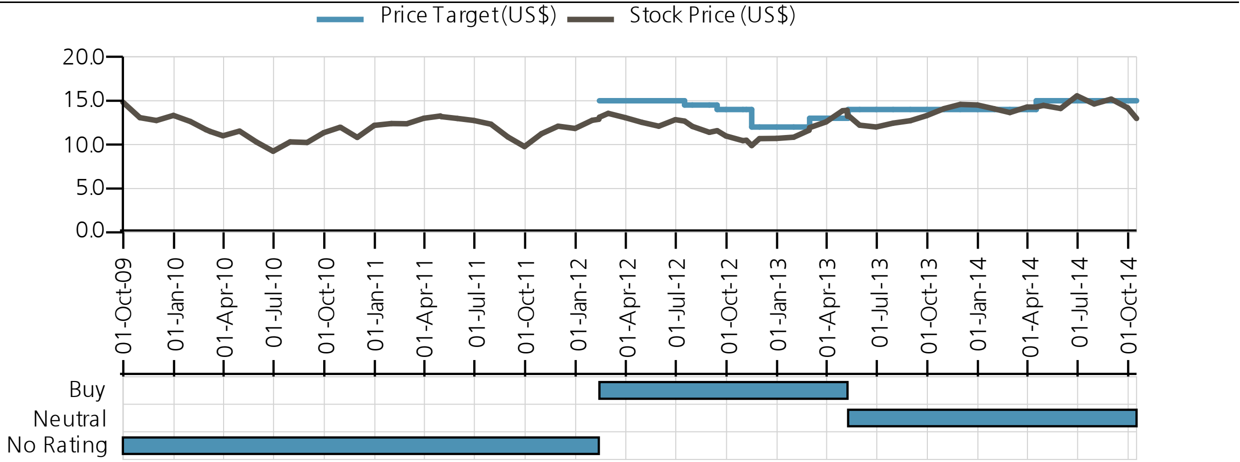
Company Name	Reuters	12-month rating	Short-term rating	Price	Price date
AES Corporation[2, 4, 6, 16]	AES.N	Neutral	N/A	US$12.98	16 Oct 2014
Calpine Corporation[2, 4, 6, 16]	CPN.N	Neutral	N/A	US$20.47	16 Oct 2014
Dynegy, Inc.[2, 4, 5, 16]	DYN.N	Buy	N/A	US$27.98	16 Oct 2014
NRG Energy Inc.[16]	NRG.N	Buy	N/A	US$28.08	16 Oct 2014
NRG Yield[16]	NYLD.N	Neutral	N/A	US$43.57	16 Oct 2014

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

2. UBS AG, its affiliates or subsidiaries has acted as manager/co-manager in the underwriting or placement of securities of this company/entity or one of its affiliates within the past 12 months.
4. Within the past 12 months, UBS AG, its affiliates or subsidiaries has received compensation for investment banking services from this company/entity.
5. UBS AG, its affiliates or subsidiaries expect to receive or intend to seek compensation for investment banking services from this company/entity within the next three months.
6. This company/entity is, or within the past 12 months has been, a client of UBS Securities LLC, and investment banking services are being, or have been, provided.
16. UBS Securities LLC makes a market in the securities and/or ADRs of this company.

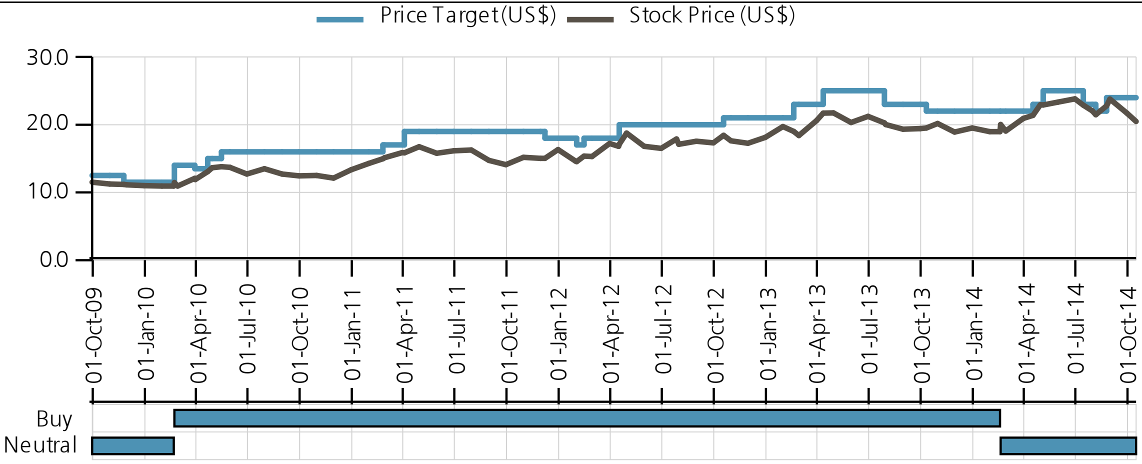
Unless otherwise indicated, please refer to the Valuation and Risk sections within the body of this report.

AES Corporation (US$)



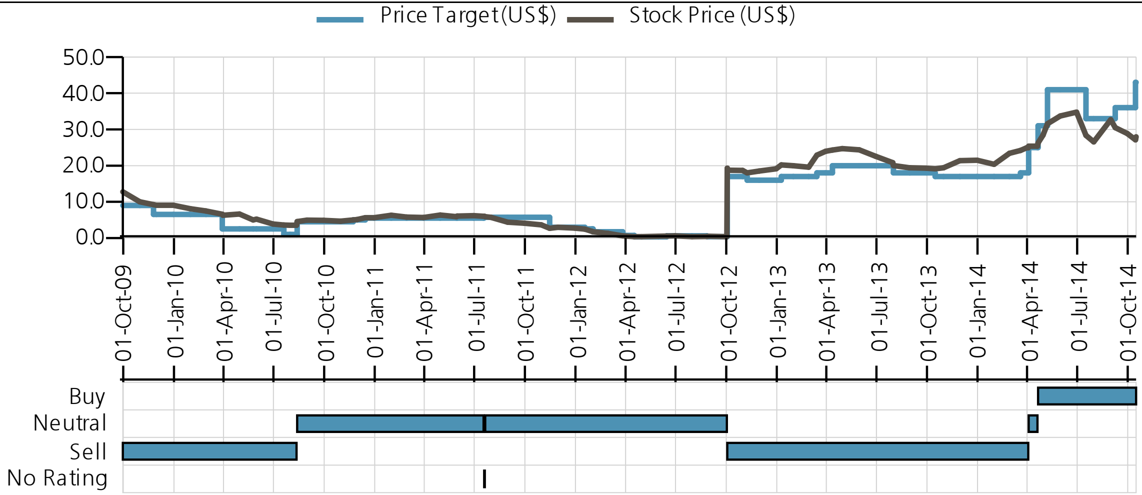
Source: UBS; as of 16 Oct 2014

Calpine Corporation (US$)



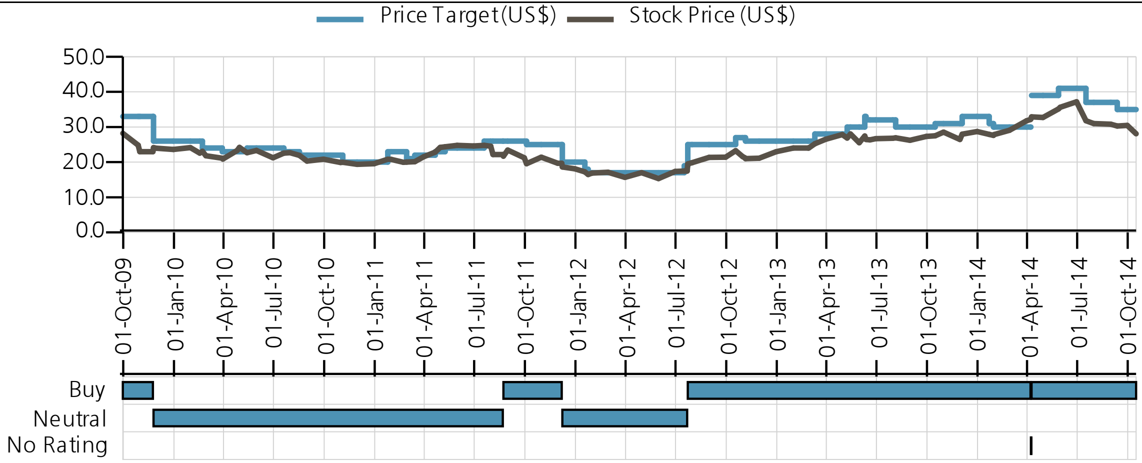
Source: UBS; as of 16 Oct 2014

Dynegy, Inc. (US$)



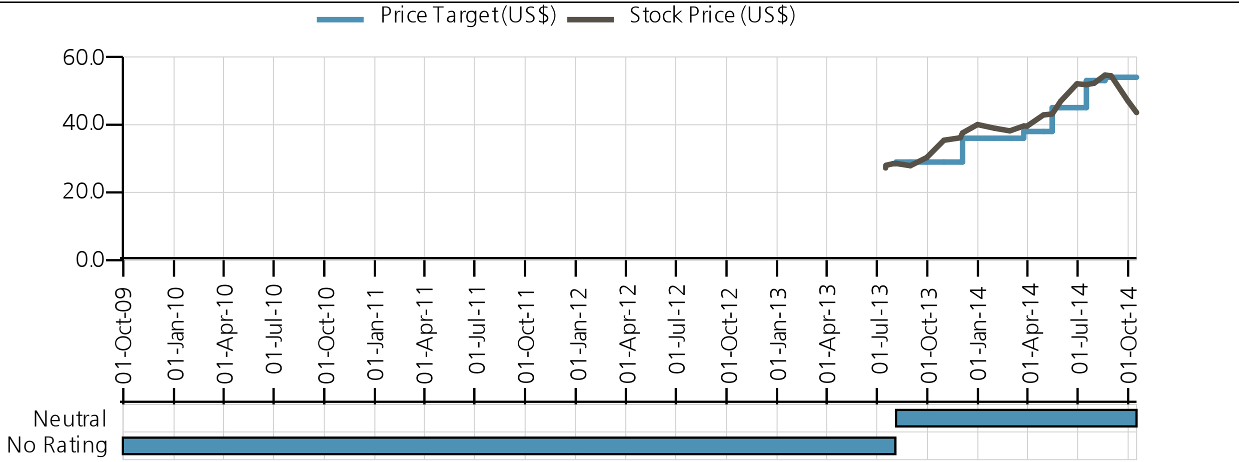
Source: UBS; as of 16 Oct 2014

NRG Energy Inc. (US$)



Source: UBS; as of 16 Oct 2014

NRG Yield (US$)



Source: UBS; as of 16 Oct 2014

Additional Prices: Edison International, US$58.39 (16 Oct 2014); PG&E Corporation, US$44.68 (16 Oct 2014); Sempra Energy, US$101.61 (16 Oct 2014); Source: UBS. All prices as of local market close.

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.

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 express 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.

UBS