

WIRES Transmission Conference

The State of Transmission Investment

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UBS Investment Research

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How Big a Focus is ROE?

Investors already expect a cut in estimates

- Driving towards a new 'normal' in high 9% band
 - Finding comfort at a new 'baseline'
- New methodology appears to provide base ROE floor equal to states
 - Will this shift further depending on further compression in peers?
- Write-offs on those continuing to book legacy ROEs is still a risk

Updated FERC ROE Mark-to-Market Analysis – The Latest Revision Down

ROE Analysis Summary	Low	Midpoint	High	FERC "Upper Midpt" 75th %	Ranked 75th %
Zone of Reasonableness (Original)	7.03	9.39	11.74	10.57	9.77
Zone of Reasonableness (1/4 GDP Weight)	6.97	9.51	12.05	10.79	9.84
Zone of Reasonableness (UBSe MTM 8/19)	7.14	10.25	13.35	11.80	9.65
Zone of Reasonableness (UBSe MTM 10/22)	6.77	9.28	11.80	10.54	10.25
Zone of Reasonableness (UBSe MTM 1/26)	5.96	8.81	11.65	10.23	10.11
Zone of Reasonableness (UBSe MTM 3/10)	6.30	8.68	11.07	9.87	9.32
Zone of Reasonableness (UBSe MTM 4/22)	6.22	8.64	11.05	9.84	9.36
Increase/(Decrease) latest MTM from Orig	(0.81)	(0.75)	(0.69)	(0.72)	(0.41)

Source: Company Filings, FactSet, Yahoo! Finance, and UBS Estimates

Circularity in the Peer Group Methodology

Numerous Concerns on Approach

- Approach ends up being pro-cyclical as growth rates reduced
 - We see risk as transmission capex cycle slows
- M&A poses risk to peer group
 - TE latest acquisition target was at the top of peer group
 - UIL and POM also had been near top

Updated FERC Mark-to-Market ROE Calculation (UBS Prepared April 22nd)

Company	Tickers	LT GDP			6 Mo. Avg Adj. Div.			ROE Rank	Excluded (UBSe)	S&P Rating	Moody's Rating
		I/B/E/S 5Yr	Growth	Composite	Yield	ROE	ROE Rank				
TECO Energy	TE	9.20	4.39	7.60	4.71	12.31		M&A	BBB+	Baa3	
ITC Holdings	ITC	11.58	4.39	9.18	1.86	11.05	100%		A-	Baa2	
PNM Resources	PNM	9.86	4.39	8.04	2.87	10.90	97%		BBB	Baa3	
PEPCO Holdings	POM	7.80	4.39	6.66	4.11	10.78		M&A	BBB+	Baa3	
UIL Holdings	UIL	7.75	4.39	6.63	4.00	10.62		M&A	BBB	Baa2	
NorthWestern	NWE	7.60	4.39	6.53	3.67	10.20	94%		BBB	Baa1	
Ameren	AEE	6.85	4.39	6.03	4.01	10.04	90%		BBB+	Baa3	
Sempra	SRE	8.27	4.39	6.97	2.63	9.61	87%		BBB+	Baa1	
Otter Tail	OTTR	6.00	4.39	5.46	4.07	9.54	84%		BBB	Baa2	
CMS Energy	CMS	6.73	4.39	5.95	3.47	9.42	81%		BBB+	Baa2	
ALLETE	ALE	6.00	4.39	5.46	3.93	9.40	77%		BBB+	Baa1	
Black Hills Corp	BKH	7.00	4.39	6.13	3.22	9.35	74%		BBB	Baa1	
El Paso Electric	EE	7.00	4.39	6.13	3.14	9.27	71%		BBB	Baa1	
Great Plains Energy	GXP	5.90	4.39	5.40	3.79	9.19	68%		BBB+	Baa2	
Exelon	EXC	6.11	4.39	5.53	3.62	9.16		M&A	BBB	Baa2	
Eversource	ES	6.25	4.39	5.63	3.35	8.98	65%		A-	N/A	
Dominion Resources	D	5.79	4.39	5.32	3.58	8.91		M&A	A-	Baa2	
Avista	AVA	5.00	4.39	4.80	3.99	8.78	61%		BBB	Baa3	
Wisconsin Energy	WEC	5.84	4.39	5.35	3.43	8.78		M&A	A-	A2	
NextEra Energy	NEE	6.24	4.39	5.62	3.03	8.65		M&A	A-	Baa1	
American Electric Po.	AEP	5.17	4.39	4.91	3.72	8.64	58%		BBB	Baa1	
Vectren	VVC	5.50	4.39	5.13	3.48	8.61	55%		A-	N/A	
Alliant Energy	LNT	5.40	4.39	5.06	3.53	8.59	52%		A-	Baa1	
Duke Energy	DUK	4.52	4.39	4.47	4.11	8.59		M&A	BBB+	A3	
Integrus Energy Group	TEG	5.00	4.39	4.80	3.72	8.51		M&A	A-	A3	
Southern Company	SO	3.32	4.39	3.68	4.63	8.30	48%		A	Baa1	
Xcel Energy	XEL	4.58	4.39	4.52	3.69	8.21	45%		A-	A3	
SCANA	SCG	4.30	4.39	4.33	3.84	8.17		M&A	BBB+	Baa3	
Pinnacle West Capital	PNW	4.20	4.39	4.26	3.82	8.08	42%		A-	Baa3	
DTE Energy	DTE	4.51	4.39	4.47	3.50	7.97	39%		BBB+	A3	
PG&E	PCG	4.02	4.39	4.14	3.58	7.70	35%		BBB	Baa1	
Hawaiian Electric	HE	3.35	4.39	3.70	4.00	7.70		M&A	BBB-	Baa2	
Portland General Ele.	POR	4.46	4.39	4.43	3.26	7.69	32%		BBB	Baa2	
Cleco	CNL	4.00	4.39	4.13	3.34	7.47		M&A	BBB+	Baa1	
Empire District Elec.	EDE	3.00	4.39	3.46	3.95	7.41	29%		BBB	Baa1	
Westar Energy	WR	3.07	4.39	3.51	3.72	7.23	26%		BBB+	Baa3	
OGE Energy	OGE	4.00	4.39	4.13	3.07	7.20	23%		A-	A3	
Consolidated Edison	ED	2.36	4.39	3.03	4.07	7.10	19%		A-	WR	
CenterPoint Energy	CNP	1.58	4.39	2.51	4.47	6.99	16%		A-	Baa1	
PSE&G	PEG	2.55	4.39	3.16	3.82	6.98	13%		BBB+	Baa2	
MGE Energy	MGEE	4.00	4.39	4.13	2.61	6.74	10%		AA-	N/A	
Edison International	EIX	3.53	4.39	3.81	2.65	6.46	6%		BBB+	A2	
IDACORP	IDA	3.00	4.39	3.46	2.76	6.22	3%		BBB	Baa2	
Entergy	ETR	(1.54)	4.39	0.44	4.05	4.49		ROE	BBB	Baa3	
FirstEnergy	FE	(1.53)	4.39	0.44	3.89	4.33		ROE	BBB-	Baa3	
PPL Corp	PPL	(2.20)	4.39	0.00	4.33	4.32		M&A, ROE	BBB	Baa3	
UNS Energy Group	UNS	N/A	4.39	N/A	N/A	N/A		M&A	N/A	Baa1	
CH Energy Group	N/A	N/A	4.39	N/A	N/A	N/A		M&A	N/A	N/A	
NV Energy	N/A	N/A	4.39	N/A	N/A	N/A		M&A	N/A	N/A	

Source: Company Filings, FactSet, Yahoo! Finance, and UBS Estimates

Other Transmission Regulatory Angles – Stable for Now

We see an opportunity still

- We see incentives as largely 'resolved' as well
 - Reduction in Independence Premium to 50bp appears stable?
- RTO participation
 - Consistent application of 50bp ROE premiums has not been touched
- Capital Structure
 - *Only* recent scrutiny relates to use of 'hypothetical' structure for NY
- Leverage
 - No discussion of Holding Company leverage / piercing corporate veil
 - We perceive a general re-leveraging in the sector amidst lower rates

What is Still Particularly Thorny

We see an opportunity still

- Pancaked Complaints
 - Can't escape the persistent ROE uncertainty
 - Back-to-back 206 petitions in ISO-NE and MISO
 - When will this all be 'resolved'? 2017?
- Regional Methodologies
 - Median vs. Mean? PJM and CAISO stuck for now without regional ROE
- Generation Interconnection
 - Trend towards renewable-pays for upgrades at MISO

Capital Markets: Quite Open to Transmission

Markets will continue to deploy capital into the sector still

- Perception remains favorable
 - Still see slight premium for transmission co's
- Power Diversification
 - Focus remains to add to transmission to 'dilute' exposure to power
- Arbitrage between transmission and power
 - Biased towards transmission in restructured markets

Do We Need Transmission?

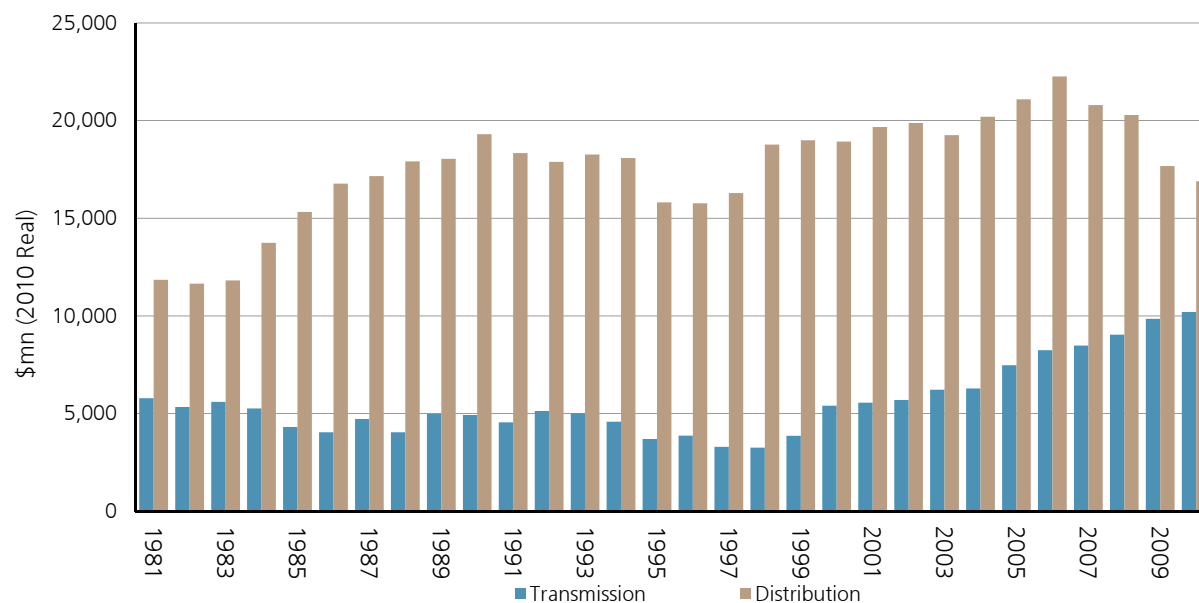
Yes, but risks to forecast

- Since 2000, energy efficiencies have slashed load growth and de-linked it from GDP
 - **PJM's proposed revisions to demand forecast risk cutting longer-term capex**
 - *New methodologies for energy efficiency from EIA capital stock turn-over*
 - *Reflecting estimates of forecasted rooftop solar growth*
 - *Offset by new weather-measurement approach*
 - Bottom line: lower growth rates have compounding effects on 5- & 10-yr outlooks
- FERC Orders 888 (1996) and 2000 (1999) issued "promote wholesale competition through open access non-discriminatory transmission services" and "advance the formation of RTOs" with the goal "to promote efficiency in wholesale electricity markets and to ensure that electricity consumers pay the lowest price possible for reliable service."
 - Identifies new "strains" on the transmission grid as a consequence of competition.
 - Higher ROE, hypothetical capital structures, and accelerated depreciation incentives for transmission based on its exposure to competitive markets at greater risk than a system completely under utility command and control.
- System strains alleviated as a result of the 2008 recession and reduced load growth

Transmission Capex & Spending Trends

T&D Construction Spending

Source: Edison Electric Institute Note: Represents 64 U.S. utilities.



U.S. Utility Capex Top 10 (all UBSe)

Source: UBS estimates, Bloomberg Note: U.S. utilities with the highest 2016E capex.

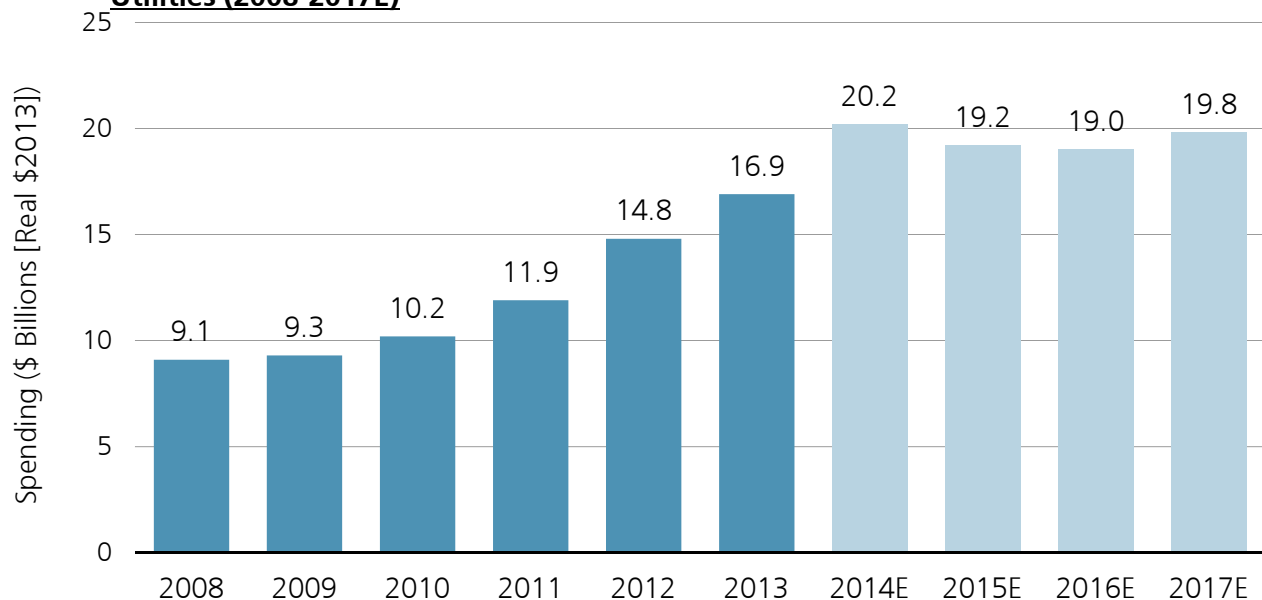
US Electric Utilities	Dec 2014			Current			% Change			
	2014	2015	2016	2014	2015	2016	15C/ 14C	16C/ 15C	15C/ 15P	16C/ 16P
Duke Energy	5,740	5,580	5,580	5,384	7,800	9,750	45%	25%	40%	75%
NextEra Energy	7,534	7,776	6,212	6,115	6,756	6,042	10%	-11%	-13%	-3%
Southern Company	6,900	5,000	4,500	5,977	6,600	5,300	10%	-20%	32%	18%
Exelon Corp.	5,550	5,575	6,550	6,077	5,575	6,550	-8%	17%	0%	0%
PG&E Corporation	5,100	5,500	5,550	4,833	5,500	5,550	14%	1%	0%	0%
Dominion Resources	4,416	3,796	4,344	5,345	4,146	5,194	-22%	25%	9%	20%
Edison International	4,100	4,200	4,600	4,100	4,100	4,800	0%	17%	-2%	4%
PPL Corporation	4,040	3,760	3,780	4,090	4,090	3,750	0%	-8%	9%	-1%
American Electric Power, Inc.	4,050	3,836	3,822	4,134	3,836	3,822	-7%	0%	0%	0%
FirstEnergy Corp.	4,353	3,518	3,518	4,286	3,485	3,561	-19%	2%	-1%	1%
Sum	51,782	48,541	48,456	50,341	51,888	54,319	3%	5%	7%	12%

Transmission Capex & Spending Trends – Part 2

Actual and Planned Transmission Investment by Investor-Owned

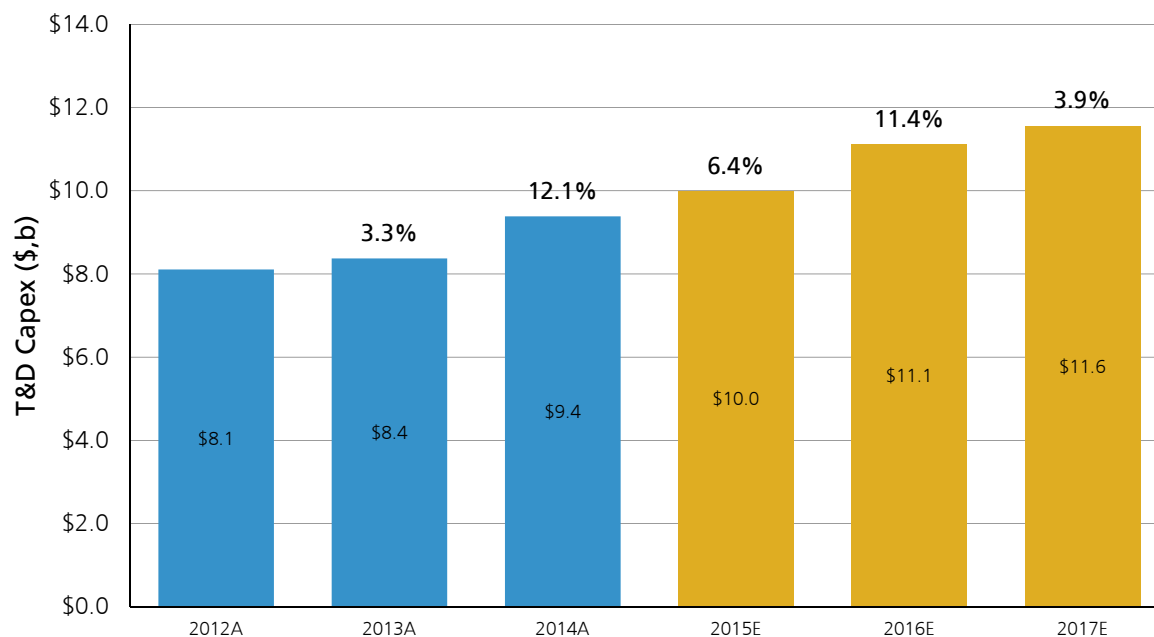
Utilities (2008-2017E)

Source: Edison Electric Institute Note: 2014-17 is estimated.



Total T&D Capex (incl YoY growth)

Source: Company reports, UBS



Do Investors Want it? Resounding Yes

Regulatory Compact Remains Appealing Overall

- Large investor appetite for "bond-like" payment streams at 10%+ returns
- Transmission under FERC regulation appeals because rates are set with long periods between regulatory review
 - States generally review rates every 1-3 years
- Transmission projects are large and require significant capital, enabling fund managers to allocate major positions under favorable and stable terms
- As FERC reduces ROEs to parity with state regulation of distribution assets, expect a higher cost of capital for transmission as funds flee to alternatives
 - Lower ROEs are offset with lower equity pricing, which reduces credit quality, increases equity issuances, and strains cash flows. Higher interest costs are the main result.
 - Capital markets will seek the most efficient balance between equity and debt returns to deliver to investors the highest overall expected return for a defined level of risk.

How does Distribution Focus Fit?

We see a shift towards distribution investments nonetheless

- Distributed resources shifting utility priorities
 - Efforts accelerating for *both* gas and electric distribution investments
 - Accentuated by reforms at state level (California, New York)
 - Safety considerations
- Concerns over bill rate inflation
 - Pushback from PSCs by removing formulaic recovery of transmission
 - Much easier to inflate gas bills given the larger all-in bill decreases

Can Capital be Deployed Expeditiously?

Experiences appear to be long-dated

- There is ample capital given lower interest rate environment
- Classic issues around planning and project development cycle provide delays
 - Several major projects continue to face delays
 - Can't escape NIMBYism despite real regional issues (New England) and coordination
- Non/sub-regional projects appear to be a significant source of recent spend
 - How much can continue to invest in 69kV system?
- Turning to non-FERC projects as can no longer wait on FERC 1000 to drive projects
 - Merchant DC interties

Slowing Capex Opportunity: *Waiting* for Clean Power Clarity

Capex uncertainty is key risk to sector

- Delaying spend ahead of perceived uncertainty will drive 'boom-bust'
 - When will we get sufficient 'clarity' to make long-term investments? Keep dreaming.
 - Need to make a plunge, likely at least ~2-years out for MISO and SPP
 - *Appears to be in part politically driven?*
- Carbon regulations hold key to long-term reacceleration of investment
 - Additional renewable procurement likely critical to achieving standards
 - We see utility-scale solutions as clearly cost competitive alternative
 - Coal to gas switching
 - Risk of nuclear retirements – driving real transmission solutions
- Reflecting carbon in LMPs could yet shift historical electrical flow patterns
- Fate of transmission tied to large-scale renewables
 - PTC extension would be a real benefit to near-term capex for sector

Seeing the Fruits of Competition

Are CAISO and PJM the Start of a New Trend?

- PJM shifted award of Artificial Island *back* to LS Power
 - This was technically 'pre' FERC 1000 compliance
- CAISO awarded Abengoa-Starwood Deal
 - Despite merging of both incumbent proposals
- Is Competition on ROE is an eventual threat?
 - Cost caps could be implicit risk further risk to transmission development
 - *Credibility of developer and relative costs of solutions remain the real key to project award.*
- Bottom line: Incumbent Utilities sharing smaller pie with private capital

YieldCos in Transmission

Missing out on the YieldCo party

- We have *not* really seen the YieldCo platform adopt ratebase
 - Uncertainty on long-term ROE and Cash Flows
 - Need for reinvestment limits desirability of high payout ratio
- Desirable to have contracted cash flows
- Could independent developers 'enable' YieldCo participation?
 - Quite possibly: Abengoa (ABG) and Abengoa Yield (ABY) recent win
 - We wouldn't doubt renewable developers follow suit
 - NextEra has accelerated their efforts; could SunEdison enter the race?

Keen to test out the REIT Concept in Transmission

Could REIT structures become more pervasive following early success?

- IPO of InfraREIT has opened up sector to new concept
 - *Will others follow suit?*
- Overlap of *existing* investors across entities
 - Expect the same investors to continue to invest in a REIT structure
- Meshing with YieldCo Concept?
 - Is there a willingness to seeing regulated assets owned under such a structure?
- Roll-up strategy akin to MLPs provides the premium return

Summary

Transmission remains en vogue, just less so

- We see transmission as a critical investment angle for sector
 - Expect *more* deals as hybrid companies continue to reposition (EXC, PPL)
 - Could FE and ETR follow the lead?
- Transmission opportunity is slowing
 - We see **capex risk** as greater uncertainty for investors than ROE
 - Will eventually re-accelerate due simply to cycle of regulations
- Going up the risk curve
 - Seeking out projects outside of conventional parameters as seek to keep pace of growth

Recent Transmission Notes (Links)

- [A \(Deficient\) Letter from Washington](#)
- [From The Regulators Vantage Point](#)
- [Taking the Polar Express from Washington](#)
- [ITC: Lining Up Lake Erie](#)
- [ITC: Heading down the FERC Vortex](#)
- [ITC: Is The Glass Half Empty?](#)
- [How Low is Too Low? MISO Transcos Strike Back](#)
- [Could Transmission Crash the Capacity Party?](#)
- [Transmission ROE MtM: Another Step Down](#)
- [How Low Could Transmission ROEs Go?](#)
- [Breaking down the New FERC ROE Methodology](#)
- [Mining for Nuggets at the Western AGA Conference](#)
- [Assessing the 206 Risk to Transmission](#)

Risk Statement

Risks for Utilities and Independent Power Producers (IPPs) primarily relate to volatile commodity prices for power, natural gas, and coal. Risks to IPPs also stem from load variability, and operational risk in running these facilities. Rising coal and, to a certain extent, uranium prices could pressure margins as the fuel hedges roll off Competitive 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

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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.

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