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Accelerating Capex Drives Faster Utility Rate Base Growth Well into the Next Decade: Our Updated Rate Base, ROE and Valuation Matrix Favors FE, AEP, AGR & PEG

In this research report, we present our updated forecast of rate base growth for each of the publicly traded utilities, and roll forward our forecasts to include 2023. We expect the regulated utility sector to realize 7.3% average annual growth in electric plant rate base over the next five years (2019-2023), up from 7.0% p.a. over the last five years (**Exhibits 4** \notin **5**). Capital expenditures planned for 2019-2022 have increased by 10% compared to this time last year, rising by 17% in generation, 8% in distribution and 5% increase in transmission -- a testament to the investment opportunities facing electric utilities as they replace aging power plants, transition to renewable generation, and expand and harden power grids to meet customer growth and enhance system reliability.

Allowing for historical rates of equity issuance during prior periods of comparable rate base growth, we expect 7.3% annual growth in rate base to drive $\sim 5.3\%$ to 5.8% growth in earnings per share. Given the sector's 3.1% dividend yield, regulated utilities offer the prospect of ~ 8.4 to 8.9% average annual returns, competitive with prospective returns on the S&P 500. Given the sector's three-year beta of 0.3x (**Exhibit 7**), adding regulated utility stocks to equity portfolios can reduce volatility without sacrificing expected returns. The primary risk faced by utility investors is higher long-term interest rates, eroding the relative PE of the sector.

Our stock selection matrix, which weighs relative valuation, forecast rate base growth, and historical earned ROE, favors FE, AEP, AGR and PEG (**Exhibit 1**). Screening unfavorably on these metrics are ALE, PNM and POR. Attractively valued utilities that combined above average rate base growth and below average ROEs include D and ETR, offering the potential for outperformance if they can improve their ROEs.

- We recommend an overweight position in the regulated electric utility sector. Utilities combine (i) prospective returns competitive with our expectations for the broader equity market with (ii) a very low beta and a track record of significant outperformance during major market downturns.
- We forecast ~7.3% compound annual growth over 2018-2023 in the industry's aggregate electric plant rate base, including construction work in progress (CWIP), up from 7.0% p.a. over the last five years (2013-2018) (Exhibits 3 and 4).
- Driving the acceleration in rate base growth are continued increases in the electric utilities' planned capital expenditures. In aggregate across all the publicly traded electrics, capital expenditures planned for 2019-2022 have increased by 10% compared to those disclosed a year ago, rising by 17% in generation, 8% in distribution and 5% increase in transmission.
- Utilities have increased both their short- and medium-term capital spending plans. Total planned capital expenditures for 2019 are up by 12% compared to those disclosed last year, but planned capital expenditures for the following three years (2020-2022) are up as well, having increased by 9% compared to a year ago (see the left-hand chart of **Exhibit 5**). These increases in utilities' longer-term capex plans suggest that rate base growth may continue at a rapid pace well into the next decade -- a testament to the investment opportunities facing utilities as they replace aging power plants, transition to renewable generation, and expand and harden power grids to meet customer growth and enhance system reliability

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- Our company-by-company estimates of growth in electric plant rate base plus CWIP are presented in Exhibits 9 and 10. We expect a wide variation in rate base growth, suggesting some utilities could materially outperform the sector, while others will lag. Over the next five expect to see the most rapid growth in electric plant rate base plus CWIP at NEE (10.9%), AGR (10.7%), and PNM (10.4%), followed by XEL (8.9%), DTE (8.7%), AEP (8.6%). Growing least rapidly, we expect, will be ALE (1.7%), POR (2.6%), EVRG (2.8%), IDA (3.7%), OGE (4.2%), PPL (4.2%).
- Taking into account non-plant rate base, and allowing for historical rates of equity issuance during prior periods of comparable rate base growth, we expect 7.3% annual growth in rate base to drive ~5.3% to 5.8% growth in earnings per share. Given the 3.1% dividend yield of the sector, we see regulated electric utilities offering the potential for ~8.4% to 8.9% compound annual returns, absent a significant change in sector PE.
- We believe these returns compare favorably with long run expected returns for the S&P 500. The forward earnings yield of the S&P 500 is currently 5.6%, based on 2019 consensus EPS, and 6.2%, based on 2020 consensus. Inflation expectations over the next five years are ~2.2%, based on the difference between the yield on 5-year U.S. Treasury notes and 5-year TIPS, suggesting that investors expect returns of ~7.8% to 8.4% on U.S. equities. An alternative means of estimating expected returns is to add the current dividend yield of S&P 500 (1.8%) to the historical growth in S&P 500 earnings over the last over the last 30 years (6.2% p.a.), pointing to expected returns of ~8.0%.
- While regulated electric utilities appear poised to offer returns competitive with the S&P 500, the threeyear beta of the sector is only 0.3x (Exhibit 6). Adding regulated utility stocks to a diversified equity portfolio can thus reduce portfolio volatility without sacrificing returns.
- The relative PE of the regulated utility sector would very likely fall were long term interest rates to rise. While we see this as the primary risk facing investors in the sector, slowing economic growth, modest inflation expectations, easing monetary policy and declining long-term bond yields globally have mitigated investors' concerns of significant increases in long term rates.
- Shareholder value creation is a function of the pace of growth in invested capital and the earned return on that investment relative to the cost of capital. In our research report of May 29, 2019, *Potential Momentum Plays and Inflection Points in ROE and Rate Base Growth,* we presented a comprehensive valuation framework for regulated utilities, based on an assessment of historical earned returns on equity, forecast rate base growth and valuation relative to peers. We have updated our analysis to identify utilities with a historical track record of earning high returns on equity that are adding rapidly to their stock of invested capital, and thus likely to lead the industry in value creation. We also identify those utilities whose poor historical profitability may limit the shareholder value created through future rate base growth or even erode shareholder value if earned returns on equity fall below its cost. Considering these companies in the context of their relative valuation allows us to identify those most and least likely to exceed or lag the market's expectations for their stocks.
- In Exhibit 1, we rank the electric utilities on all three elements of our stock selection matrix: (i) forecast rate base growth over the next five years, (ii) earned ROE over the last five years, and (iii) relative valuation, measured on the basis of price to 2021 consensus EPS. On the basis of these metrics, our stock selection matrix favors FE, AEP, AGR and PEG. Screening unfavorably on these metrics are ALE, PNM and POR.
- Also of potential interest to investors may be utilities with above median forecasted rate base growth, but subpar historical earned ROEs. These companies may offer the prospect of outperformance if they are able to improve their operations and/or change their regulatory framework to increase their earned ROEs. Attractively valued utilities that combined above average rate base growth and below average ROEs included D and ETR (see Exhibit 1 below).
- We also view PNW as attractive due to is below average valuation and above average ROEs combined with the potential for above average long-term rate base growth (see **Exhibits 1** and **9**).

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Exhibit 1: Utilities Screening Favorably and Unfavorably on SSR's Three Factor Screen (Forecast Rate Base Growth, Historical Earned ROE and Relative Valuation)

	Price/ 2021		2018-2023		2013-2018	
	Consensus	Quintile	Rate Base	Quintile	Average	Quintile
	EPS	Rank	CAGR	Rank	Earned ROE	Rank
AEE	18.7	4	7.7%	2	9.0%	3
AEP	18.1	3	8.6%	1	9.8%	2
AGR	16.9	2	10.7%	1	9.9%	2
ALE	20.0	5	1.7%	5	8.3%	4
AVA	18.5	3	5.9%	4	8.7%	4
CMS	19.1	4	5.3%	4	10.5%	1
D	15.9	2	7.8%	2	8.1%	5
DTE	17.6	3	8.7%	1	9.9%	2
DUK	15.4	1	6.7%	3	9.2%	3
ED	18.1	3	6.3%	3	9.1%	3
EE	21.1	5	6.0%	4	8.5%	4
EIX	13.4	1	8.0%	2	8.7%	4
ES	19.0	4	5.9%	4	10.3%	1
ETR	16.7	2	8.2%	2	8.9%	3
EVRG	17.8	3	2.8%	5	7.2%	5
EXC	15.3	1	7.3%	3	8.6%	4
FE	15.7	1	8.0%	2	11.2%	1
HE	19.5	4	6.3%	4	8.0%	5
IDA	22.5	5	3.7%	5	10.0%	1
LNT	18.6	3	5.8%	4	10.0%	2
NEE	19.7	5	10.9%	1	10.7%	1
NWE	18.6	4	4.5%	5	9.3%	3
OGE	17.4	2	4.2%	5	9.0%	3
PCG	7.0	1	8.4%	2	-4.6%	5
PEG	15.4	1	6.8%	3	10.2%	1
PNM	20.4	5	10.4%	1	5.3%	5
PNW	17.0	2	6.3%	3	9.6%	2
POR	20.0	5	2.6%	5	8.2%	5
PPL	11.7	1	4.2%	5	9.8%	2
SO	16.0	2	7.2%	3	7.5%	5
WEC	20.0	5	8.5%	1	10.5%	1
XEL	19.3	4	8.9%	1	8.6%	4
Median	18.1		6.8%		9.1%	

1. Return on equity calculated on tangible net worth, excluding goodwill. Source: FERC Form 1, company reports, SNL, SSR analysis



Preferences Among Utilities, IPPs and Clean Technology							
Sector	Weighting	Favorites	Concerns				
Regulated Electric Utilities	Overweight	AEP, EIX, ETR, FE, PCG, PNW	ALE, IDA, POR, SO				
Hybrid Electric Utilities	Neutral	EXC					
IPPs	Underweight						
Renewables	Underweight						
Yieldcos	Neutral	NEP					

Exhibit 2: Heat Map: Preferences Among Utilities, IPPs and Clean Technology

Source: SSR research, analysis and estimates

Details

Accelerating Capex Will Drive Faster Rate Base Growth Over 2018-2023

We have estimated the growth in electric plant rate base, plus construction work in progress (CWIP), of the publicly traded U.S. electric utilities based upon the disclosed capex plans of these companies, their rates of depreciation, and the estimated accumulation of their deferred tax liabilities. Based on this analysis, we expect electric plant rate base plus CWIP to grow at a compound annual rate of 7.3% over the next five years (2018-2023) (**Exhibit 3**). This forecast implies a continued acceleration in the industry's rate of growth: over the last five years, growth in aggregate electric rate base plus CWIP averaged 7.0% p.a., and over the last ten years 6.2% p.a. (see **Exhibit 4**).



Exhibit 3: Historical & Estimated Growth in Electric Plant Rate Base of the Publicly Traded U.S. Electric Utilities, Including Construction Work in Progress (1)

1. Growth estimates for 2019-2023 reflect the announced capital expenditure plans of those publicly traded utilities that have provided such forecasts in their SEC filings and investor presentations. Source: FERC Form 1, SEC Form 10-Q, SNL, SSR analysis

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Exhibit 4: Forecast 5-Year CAGR and Historical 5, 10 & 15-Year CAGRs In Electric Rate Base Plus CWIP of Publicly Traded U.S. Electric Utilities (1)

1. Includes electric plant rate base plus construction work in progress. Our 2018-2023 growth estimates reflect the announced capital expenditure plans of those publicly traded utilities that have provided such forecasts in their SEC filings and investor presentations. Source: FERC Form 1, SEC Form 10-Q, SNL, SSR analysis

Driving this acceleration is continued rapid growth in the electric utilities' planned capital expenditures. In aggregate across all the publicly traded electrics, capital expenditures planned for 2019-2022 have increased by 10% compared to those disclosed a year ago, rising by 17% in generation, 8% in distribution and 5% increase in transmission.

Interestingly, utilities have increased both their short- and medium-term capital spending plans. Total planned capital expenditures for 2019 are up by 12% compared to those disclosed last year, but planned capital expenditures for the following three years (2020-2022) are up as well, having increased by 9% compared to a year ago (see the left-hand chart of **Exhibit 5**). Capex plans have increased across all business segments. Driven primarily by increased renewable generation, planned capital expenditures on generation plant have increased the most, rising by 27% in 2019 and by 14% over 2020-2022 (see the right-hand chart of **Exhibit 5**). Planned investment in distribution grids, the largest single component of utility capex, is up by 6% in 2019 and by 9% over 2020-2022. Planned investment in transmission is up by 5% in 2019 and by 6% over 2020-2022.

These increases in utilities' longer term capex plans suggest that rate base growth may continue at a rapid pace well into the next decade -- a testament to the investment opportunities facing utilities as they replace aging power plants, transition to renewable generation, and expand and harden power grids to meet customer growth and enhance system reliability.

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1. Based upon the disclosed capex plans of the U.S. publicly traded utilities as of Q2 2018 and Q2 2019. Source: FERC Form 1, SEC Form 10-Q, SNL, SSR analysis

Compound annual growth in electric plant rate base of 6.2% over the last ten years, accelerating to an estimated 7.3% over the next five years, is particularly remarkable given the falling power output of the U.S. electric utility industry: U.S. electric utilities generated 3% less power in 2018 that in 2013 and 6% less than in 2008. Rather than investing in the expansion of their generation fleets, U.S. electric utilities are investing in the replacement of aging coal and nuclear generation capacity and the transition to new renewable generation technologies. Distribution capex benefits from utilities' rising customer base as well as investments to enhance the reliability and reduce the operation and maintenance expense of distribution grids. Drivers of transmission capex include the need to link new utility scale renewable power plants to load centers as well as system upgrades to enhance the reliability of the bulk power grid, particularly in coastal areas that have recently suffered significant hurricane damage. In California, enhancing the safety of transmission and distribution grids with respect to wildfire risk will likely be a focus of investment for some years to come. Critically, utilities' focus on transitioning to renewable generation and enhancing the reliability of their transmission and distribution systems has met with broad regulatory support.

A slowdown in utilities' aggregate capex and rate base growth may be a legitimate concern for investors in the long run. Over the last three decades, the average rate of capital expenditures realized by the U.S. investor owned utilities has been consistent with long term growth in electric rate base of just ~5% p.a. (see our research report of October 2, 2017, *If This Is the Golden Age of Electric Utilities, What's Next? Or, How Fast Can Rate Base Grow in the Long Term and on What Will Utilities Spend?*).

In the medium term, however, not only are utilities' capex plans sufficient to sustain historically high rate base growth, but regulators are supportive and customers appear well positioned to absorb the cost. As explained in our research report of October 3, 2018, *Will Rising Customer Bills Constrain Utilities' Rate Base Growth?*, the impact of rapid rate base growth on average residential bills has been mitigated in recent years by continued customer growth and the stability of fuel and purchased power costs. We see this trend continuing: over the next five years (2018-2023), we estimate that average residential bills of the U.S. publicly traded electric utilities will increase at median rate of

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1.9% p.a., slightly below the expected rate of inflation. Thus the current pace of rate base growth could be sustainable even beyond our current five-year forecast period.

Regulated Electric Utilities Combine Robust Growth with Historically Low Betas

We are reiterating our recommendation to overweight the regulated electric utility sector in light of our updated and extended forecasts of electric plant rate base growth. Regulated utilities combine (i) prospective returns competitive with our expectations for the broader equity market with (ii) a very low beta and a track record of significant outperformance during major market downturns.

Over the medium term, growth in electric base should drive commensurate growth in the regulated earnings of the electric utilities (see the **Appendix** to this research note). However, our forecast of 7.3% annual growth in electric plant rate base does not take into account the non-plant components of rate base (e.g., nuclear fuel or net regulatory assets on which utilities are allowed to earn a return). Based on historical rates of earnings dilution during periods of similar rate base growth, we expect earnings per share to lag rate base growth by 150 to 200 basis points per annum. We thus expect our forecast of 7.3% growth in electric plant rate base over 2018-2023 to be reflected in 5.3%-5.8% compound annual growth in earnings per share.

Given the 3.1% dividend yield of the sector, we see regulated electric utilities offering the potential for ~8.4% to 8.9% compound annual returns, absent a significant change in sector PE. We believe these returns compare favorably with expected returns on the S&P 500 over the medium term. The forward earnings yield of the S&P 500 is currently 5.6%, based on 2019 consensus EPS, and 6.2%, based on 2020 consensus. Inflation expectations over the next five years are ~2.2%, based on the difference between the yield on 5-year U.S. Treasury notes and 5-year TIPS. This would point to expected returns of ~7.8% to 8.4% on U.S. equities. An alternative means of estimating expected returns is to add the current dividend yield of S&P 500 (1.8%) to the historical growth in S&P 500 earnings over the last 30 years (6.2% p.a.), pointing to expected returns of ~8.0%.

The relative PE of the regulated utility sector would very likely fall were long term interest rates to rise. While we see this as the primary risk facing investors in the sector, expectations for slowing economic growth in 2019, modest inflation expectations, the recent easing of monetary policy and declining long-term bond yields globally have mitigated investors' concerns regarding significant increases in long term rates.

While regulated electric utilities appear poised to offer returns competitive with the S&P 500, the three-year beta of the sector is only 0.3^1 (**Exhibit 6**). Adding regulated utility stocks to a diversified equity portfolio can thus reduce portfolio volatility without sacrificing returns.

¹ To estimate the beta of the publicly traded, regulated electric utilities in the United States, we have calculated the beta of the Philadelphia Utility Index (UTY), which comprises primarily regulated electric and regulated electric and gas utilities. The 20 largest stocks in the index by market capitalization are AEE, AEP, AES, AWK, CNP, D, DTE, DUK, ED, EE, EIX, ES, ETR, EXC, FE, NEE, PEG, PNW, SO and XEL.





Exhibit 6: Beta of the Philadelphia Utility Index Relative to the S&P 500 (1)

1. The PHLX Utility Sector Index (UTY) is a market capitalization-weighted index composed of a geographically diverse group of U.S. public utility stocks. The comprises primarily regulated electric and regulated electric and gas utilities. The 20 largest stocks in the index by market capitalization are AEE, AEP, AES, AWK, CNP, D, DTE, DUK, ED, EE, EIX, ES, ETR, EXC, FE, NEE, PEG, PNW, SO and XEL.

Source: Bloomberg and SSR analysis

Finally, we note that, across all the major market downturns since 1994, regulated utilities have materially outperformed both the S&P 500 as well as other traditionally defensive sectors (consumer staples, health care, telecoms, REITs and MLPs) (**Exhibit 7**). In our research report of April 6, 2017, *Utilities and Other Defensive Sectors During the Trump Era: Which Perform Best – Particularly Against Tweets?*, we analyzed the relative performance of the principal defensive sectors during all market downturns over 1994-2017 where the decline from peak to trough was larger than 8.25%, equivalent to two standard deviations of the 30 day returns for the S&P 500 since 1994. On average over these market downturns, utilities outperformed both the S&P 500, by 860 basis points, and the other defensive sectors, by a range of 150 to 640 basis points. As can be seen in **Exhibit 7**, utilities were particularly effective defensive investments during financial crises and downturns triggered by global events, likely offering protection against trade war risk.

	Utilities	Telecom	Health Care	Consumer Staples	REITS	MLPs	Utilities' Outperformance vs. Other Defensives	
							Low	High
All Major Downturns	8.6%	2.1%	5.1%	5.2%	3.5%	7.1%	1.5%	6.4%
Global Events	9.5%	5.0%	2.2%	2.6%	2.5%	3.8%	4.5%	7.3%
Domestic Events	8.0%	0.5%	6.8%	6.7%	4.1%	9.0%	-1.0%	7.6%
Recession Fears	10.9%	2.7%	7.5%	7.1%	4.4%	8.7%	2.1%	8.2%
Financial Crises	9.4%	4.6%	3.4%	4.1%	-2.2%	3.9%	4.8%	11.6%

Exhibit 7: Average Outperformance vs. the S&P 500 of Indices of the Principal Defensive Sectors (1) During the Largest Market Downturns, 1994-2017

1. NASDAQ PHLX Utility Index (UTY); Dow Jones U.S. Telecommunications Index (DJUSTL); Dow Jones U.S. Heath Care Index (DJUSHC); Dow Jones U.S. Consumer Goods Index (DJUSNC); Dow Jones Equity All REIT Index (REI); Alerian MLP (AMLP) Source: Dow Jones, Bloomberg and SSR analysis

Within the Electric Utility Industry, the Outlooks for Individual Companies Differ Markedly

Our company-by-company estimates of growth in electric plant rate base plus CWIP are presented in **Exhibits 8** and **9**. As can be seen there, we expect a wide variation in rate base growth across the industry. Over the next five years (2018-2023) we estimate growth rate in electric plant rate base plus CWIP will range from only 1.7% p.a. for ALE to 10.9% p.a. for NEE.

This wide dispersion in growth rates suggests the potential for some utilities to materially outperform the sector, while others will lag. Over the next five years, we expect to see the most rapid growth in electric plant rate base plus CWIP at NEE (10.9%), AGR (10.7%), and PNM (10.4%), followed by XEL (8.9%), DTE (8.7%), AEP (8.6%). Growing least rapidly, we expect, will be ALE (1.7%), POR (2.6%), EVRG (2.8%), IDA (3.7%), OGE (4.2%), PPL (4.2%).

While our forecasts of rate base growth through 2021 are uniformly based on the capex plans disclosed by utility management teams, not all utilities provide estimates of their capital expenditures beyond a three-year horizon. For years in which management estimates of utility capex are not available, we have assumed that capital expenditures will gradually converge with each utility's 30-year average ratio of capital expenditures to gross property, plant and equipment, calculated on a segment by segment basis. We term this ratio the "capex ratio" and assume that rates of capital expenditure by segment will gradually revert to these long-term averages.



Exhibit 8: Forecast CAGR in Rate Base Plus CWIP, 2018-2023

Source: FERC Form 1, SEC Form 10-Q, SNL and SSR analysis

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Like all forecasts, therefore, our estimates of rate base growth become less reliable as they extend over time. Nonetheless, we have provided our estimates of rate base growth over 2021-2024 in **Exhibit 9** as an aid in identifying utilities whose rate base growth may rise or fall as it converges with the level sustainable by the utility's long-term average capex ratio. In particular, we note that:

- Among the utilities expected to rank in the first or top quintile on rate base growth over 2018-2021, two, AGR and NEE, are expected to maintain their top quintile ranking over 2021-2024.
- Another two utilities expected to rank in the top quintile on rate base growth over 2018-2021, PCG and WEC, are expected to see a deceleration in rate base growth thereafter, but to maintain a second quintile ranking.
- Three utilities expected to rank in the top quintile on rate base growth over 2018-2021, DTE, PNM and XEL, are at risk of a two or three quintile drop in their rankings as their capex gradually converges with its long run historical average.
- Conversely, six of the seven utilities that we expect to rank in the fifth or bottom quintile on rate base growth over 2018-2021 are expected to remain in the bottom quintile over 2021-2024 (ALE, EVRG, IDA, NWE, OGE and POR) while the seventh is expected to rise only to the fourth quintile (CMS).
- Utilities expected to show a substantial improvement in their quintile rankings from 2018-2021 to 2021-2024 as capex increases to converge with its long run average are EE, EXC, FE and PNW.

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		CAGR		Quintile Rank			
	2015-2018	2018-2021	2021-2024	2015-2018	2018-2021	2021-2024	
AEE	8.8%	8.5%	6.3%	2	2	2	
AEP	9.2%	9.4%	7.2%	1	2	1	
AGR	6.1%	11.6%	8.6%	3	1	1	
ALE	0.8%	2.6%	0.7%	5	5	5	
AVA	5.7%	6.1%	5.5%	3	4	3	
CMS	2.9%	5.1%	5.3%	5	5	4	
D	0.6%	8.6%	6.1%	5	2	2	
DTE	6.8%	10.0%	6.0%	3	1	3	
DUK	6.9%	7.2%	6.0%	2	3	3	
ED	5.9%	6.3%	6.1%	3	4	3	
EE	4.4%	5.7%	6.4%	4	4	2	
EIX	6.4%	8.8%	6.4%	3	2	2	
ES	10.2%	6.9%	4.4%	1	3	4	
ETR	10.8%	8.4%	7.6%	1	2	1	
EVRG	4.0%	3.1%	2.6%	4	5	5	
EXC	10.9%	7.3%	7.0%	1	3	1	
FE	4.2%	8.2%	7.5%	4	3	1	
HE	1.7%	6.5%	5.9%	5	3	3	
IDA	3.9%	3.9%	3.6%	5	5	5	
LNT	11.6%	6.3%	4.9%	1	4	4	
NEE	7.7%	12.4%	7.9%	2	1	1	
NWE	5.2%	5.1%	3.8%	4	5	5	
OGE	8.5%	4.4%	4.3%	2	5	5	
PCG	8.9%	9.5%	6.4%	1	1	2	
PEG	12.1%	7.5%	5.5%	1	3	4	
PNM	3.2%	13.4%	5.9%	5	1	3	
PNW	7.7%	5.5%	7.3%	2	4	1	
POR	5.0%	3.0%	2.1%	4	5	5	
PPL	7.1%	5.6%	2.4%	2	4	5	
SO	5.0%	8.3%	5.3%	4	2	4	
WEC	2.7%	9.5%	6.4%	5	1	2	
XEL	6.7%	11.8%	4.7%	3	1	4	

Exhibit 9: Historical and Forecast Growth in Electric Plant Rate Base Plus CWIP

Source: FERC Form 1, SEC Form 10-Q, SNL and SSR analysis

Finally, in **Exhibit 10** we rank the utilities by the expected change in electric plant rate base from the last three years (2015-2018) to the next three years. The utilities with the largest expected acceleration in electric rate base growth are PNM (10.2 percentage points), D (8.0 p.p.) and WEC

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(6.8 p.p.), while those with the largest expected deceleration are LNT (5.3 p.p.), PEG (4.6 p.p.) and OGE (4.1%). Of these, we note that PEG, OGE, WEC and D are electric and gas utilities, and thus have the potential for compensating swings in gas rate base growth.



Exhibit 10: Change in Rate Base Growth, 2018-2021 v. 2015-2018 (Percentage Points)

Which Utilities Combine Rapid Rate Base Growth with High Earned ROEs?

Shareholder value creation is a function of the pace of growth in invested capital and the earned return on that investment relative to the cost of capital. In our research report of May 29, 2019, *Potential Momentum Plays and Inflection Points in ROE and Rate Base Growth*, we present a comprehensive valuation framework for regulated utilities, based on an assessment of historical earned returns on equity, forecast rate base growth and valuation relative to peers. Below we have updated this analysis to identify utilities with a historical track record of earning high returns on equity that are adding rapidly to their stock of invested capital, and thus likely to lead the industry in value creation. We also identify those utilities whose poor historical profitability may limit the shareholder value created through future rate base growth – or even erode shareholder value if earned returns on equity fall below its cost. Considering these companies in the context of their relative valuation allows us to identify those most and least likely to exceed or lag the market's expectations for their stocks.

Our analysis of the historical earned ROEs of U.S. regulated utilities reveals that utilities in the top and bottom quintiles on earned ROE often maintain their relative position for years. Utilities ranking in the bottom two (worst) quintiles on earned ROE for the past ten years or longer are AEE, ALE, AVA, EVRG, EXC, HE, PNM, POR, and XEL. Utilities ranking in the top two (best)

Source: FERC Form 1, SEC Form 10-Q, SNL and SSR analysis



quintiles on earned ROE for the past ten years or longer include AEP, DTE, EIX, ES, IDA, LNT, NEE and WEC.

These results suggest that very high or very low historical earned ROEs may well be predictive of future profitability. If so, utilities that combine (i) a historical track record of high earned ROEs with (ii) rapid forecast rate base growth, may be poised to add materially to shareholder value in the coming years. Those whose rate base growth is accompanied by low earned ROEs, by contrast, may limit the value to shareholders of their growth due to the low return on this investment.

Exhibit 11 ranks the U.S. electric utilities base upon their earned ROEs over the last five years (2014-2018). At the far left of the scale are utilities such as PCG and PNM whose average earned ROEs over the last five years fall well below their cost of equity, as well as several utilities (EVRG, SO and HE) whose earned ROEs fall in a range of 7.0-8.0% and thus fail to exceed their cost of equity to any material degree. At the right end of the scale, by contrast, are several utilities (FE, NEE, WEC, CMS, ES, PEG, IDA and LNT) whose earned ROE over the last five years have averaged in the range of 10.0% to 11.0%, well above the industry median of 9.0% and significantly more than their cost of equity.



Exhibit 11: Earned ROE¹ of U.S. Electric Utilities (2014-2018 Average)

1. Return on equity is calculated on tangible net worth, excluding goodwill. Source: FERC Form 1, company reports, SNL, SSR analysis

In **Exhibit 12** we plot (i) our estimates of utilities' growth in electric plant rate base plus CWIP over the next five years (2018-2023) against (ii) these utilities' average earned ROE over the last five years (2014-2018). Utilities in the upper right quadrant of this chart are characterized by estimated growth in electric plant rate base and historical earned ROEs that are both above the industry median. If our estimates of these utilities' future rate base growth are accurate, and their historical earned ROEs prove persistent, this group should add materially more to shareholder value than their less profitable or less rapidly growing peers. Utilities in the lower right quadrant, for example, are poised to achieve rapid rate base growth at low returns, limiting its value to shareholders, while those in the



lower left quadrant combine both low returns and low growth. A full listing of the utilities in each quadrant appears in **Exhibit 13**.



Exhibit 12: Average Earned ROE, 2014-2018, vs. Forecast CAGR in Rate Base Plus CWIP, 2018-2023

1. Return on equity calculated on tangible net worth, excluding goodwill. Source: FERC Form 1, company reports, SNL, SSR analysis

Exhibit 13: Regulated Electric Utilities Classified on the Basis of Rate Base Growth and Earned ROE¹

NE Quadrant	SE Quadrant	SW Quadrant	NW Quadrant	
Rate Base Growth > Median	Rate Base Growth > Median	Rate Base Growth < Median	Rate Base Growth < Median	
Earned ROE > Median	Earned ROE < Median	Earned ROE < Median	Earned ROE > Median	
AEP	AEE	ALE	CMS	
AGR	D	AVA	DUK	
DTE	EIX	EE	ED	
FE	ETR	EVRG	ES	
NEE	EXC	HE	IDA	
PEG	PCG	OGE	LNT	
WEC	PNM	POR	NWE	
	SO		PNW	
	XEL		PPL	

1. Return on equity calculated on tangible net worth, excluding goodwill. Source: FERC Form 1, company reports, SNL, SSR analysis

In **Exhibit 14**, we rank the electric utilities on all three elements of our stock selection matrix: (i) forecast rate base growth over the next five years, (ii) earned ROE over the last five years, and (iii) relative valuation, measured on the basis of price to 2021 consensus EPS. On this basis, our stock selection matrix favors FE, AGR, AEP and PEG. Screening unfavorably on these metrics are ALE, PNM and POR.

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	Price/ 2021	,	2018-2023		2013-2018	
	Consensus	Quintile	Rate Base	Quintile	Average	Quintile
	EPS	Rank	CAGR	Rank	Earned ROE	Rank
AEE	18.7	4	7.7%	2	9.0%	3
AEP	18.1	3	8.6%	1	9.8%	2
AGR	16.9	2	10.7%	1	9.9%	2
ALE	20.0	5	1.7%	5	8.3%	4
AVA	18.5	3	5.9%	4	8.7%	4
CMS	19.1	4	5.3%	4	10.5%	1
D	15.9	2	7.8%	2	8.1%	5
DTE	17.6	3	8.7%	1	9.9%	2
DUK	15.4	1	6.7%	3	9.2%	3
ED	18.1	3	6.3%	3	9.1%	3
EE	21.1	5	6.0%	4	8.5%	4
EIX	13.4	1	8.0%	2	8.7%	4
ES	19.0	4	5.9%	4	10.3%	1
ETR	16.7	2	8.2%	2	8.9%	3
EVRG	17.8	3	2.8%	5	7.2%	5
EXC	15.3	1	7.3%	3	8.6%	4
FE	15.7	1	8.0%	2	11.2%	1
HE	19.5	4	6.3%	4	8.0%	5
IDA	22.5	5	3.7%	5	10.0%	1
LNT	18.6	3	5.8%	4	10.0%	2
NEE	19.7	5	10.9%	1	10.7%	1
NWE	18.6	4	4.5%	5	9.3%	3
OGE	17.4	2	4.2%	5	9.0%	3
PCG	7.0	1	8.4%	2	-4.6%	5
PEG	15.4	1	6.8%	3	10.2%	1
PNM	20.4	5	10.4%	1	5.3%	5
PNW	17.0	2	6.3%	3	9.6%	2
POR	20.0	5	2.6%	5	8.2%	5
PPL	11.7	1	4.2%	5	9.8%	2
SO	16.0	2	7.2%	3	7.5%	5
WEC	20.0	5	8.5%	1	10.5%	1
XEL	19.3	4	8.9%	1	8.6%	4
Median	18.1		6.8%		9.1%	

Exhibit 14: Utilities Screening Favorably and Unfavorably on SSR's Three Factor Screen (Forecast Rate Base Growth, Historical Earned ROE and Relative Valuation)

1. Return on equity calculated on tangible net worth, excluding goodwill.

Source: FERC Form 1, company reports, SNL, SSR analysis

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Also of potential interest to investors may be utilities in the lower right-hand quadrant of **Exhibit 12**; these utilities combine above median forecasted rate base growth, but subpar historical earned ROEs. In some cases, such as PNM, historical earned ROEs are so far low below their cost of equity (PNM's average earned ROE over the last five years was only 5.3%) as to imply the potential for significant value destruction as rate base grows. Yet others may offer the prospect of outperformance if they are able to improve their operations and/or change their regulatory framework to increase their earned ROEs. A recovery in ROE at these firms would cause earnings growth to exceed rate base growth and possibly drive an expansion of valuation multiples. Attractively valued utilities that combined above average rate base growth and below average ROEs included D, EIX, ETR and PCG (see **Exhibit 14** above).

To assist investors in identifying which utilities in the lower right-hand quadrant of **Exhibit 12** may be best positioned to improve their earned ROEs, we have prepared two additional screens. The first, in **Exhibit 15**, compares these utilities' earned ROE in 2018 with their average earned ROE over the preceding five years (2013-2017). Given the historical stickiness of earned ROEs, we are interested in cases where 2018 ROEs fall materially below their five-year average; if these companies' ROEs revert to their historical mean, they could in future combine rapid growth with higher earned returns, elevating them into the upper right-hand quintile and possibly triggering a material expansion of earnings multiples. Examples include D, as well as PCG and EIX due to wildfire losses (see the left side of **Exhibit 15**). Companies that have 2018 ROEs above their 2013-2017 average could also be of interest if the improvements reflect sustainable changes. ETR, AEE and EXC also exhibit increases that we believe may be attributable to sustainable improvements at these companies.

The second screen, presented in **Exhibit 16**, compares 2018 earned ROEs to the 2018 allowed ROEs. Only companies where earned ROEs fall short of their allowed levels can expect to retain for shareholders the long-term benefit of any improvement in profitability. D, PNM and SO all have 2018 earned ROEs far below their allowed levels. Further analysis of these companies is warranted to assess whether improvements in operational performance, and a constructive regulatory response, may close the gap between earned and allowed ROEs and thus drive earnings growth in excess of rate base growth – and, possibly, an expansion in valuation multiples.





Exhibit 15: 2018 Earned ROE¹ Less Prior 5-Year Average (2013-2017) Earned ROE

1. Return on equity is calculated on tangible net worth, excluding goodwill. Source: FERC Form 1, company reports, SNL, SSR analysis



Exhibit 16: 2018 Earned ROE Less 2018 Allowed ROE¹

1. Return on equity is calculated on tangible net worth, excluding goodwill. Source: FERC Form 1, company reports, SNL, SSR analysis

Appendix 1: Growth in Rate Base vs. Growth in Regulated Utility Earnings

Growth in rate base is one of the fundamental drivers of long-term earnings growth among regulated electric utilities.² As set out in **Exhibit 17**, a regression analysis of the five-year CAGR in electric rate base against the five-year CAGR of electric operating income of U.S. investor owned utilities results in an r-squared of 0.31, suggesting that rate base growth explains approximately a third of the growth in operating income among electric utilities. Other key drivers of long-term earnings growth include the frequency with which individual utilities file rate cases to adjust their regulated revenues to the reflect the rise in rate base; changes in the allowed return on equity used by regulators to set utilities' allowed revenues in these rate cases; and utilities' success or failure in realizing that allowed return through the control of operating and financial expenses. Looking ahead, we expect rate base growth will be an even more important driver of earnings growth as the decline of allowed ROEs levels off and the frequency of rate case filings continues at its current high level.

Exhibit 17: The Relationship of Rate Base Growth to Operating Income Growth at Investor Owned Electric Utilities in the United States, 1993-2013



Source: FERC Form 1, SNL, SSR analysis

² Rate-regulated utilities are allowed to recover their prudently incurred cost of service in rates, including all costs to procure fuel and purchased power, operation and maintenance expense, depreciation expense, income and other taxes, and a fair return on rate base. Rate base represents the capital invested by a rate-regulated utility monopoly in the supply of a public service (e.g., electricity or gas) and is roughly equivalent to the net depreciated historical value of the utility's plant, property and equipment. Rate base may be funded by common and preferred equity, long term debt and net deferred tax liabilities. On the debt portion of rate base, utilities are generally allowed to earn a return equivalent to their embedded cost of long term debt. A similar approach is to taken the recovery of the cost of preferred equity. Because a utility's deferred tax liability largely represents income taxes expensed but not yet paid, and thus does not represent an outlay of capital, regulated utilities are not allowed to earn a return on deferred taxes. As a result, rate base is generally calculated as the net depreciated historical cost of a utility's property, plant and equipment net of the utility's deferred tax liability. Finally, on the portion of rate base funded with equity (a proportion set by regulators at a level deemed adequate to sustain an investment grade rating on the utility's long term debt, and referred to as the "equity ratio") utilities are allowed to earn a fair return (the utility's "allowed ROE") as determined by regulators in periodic rate cases. Given this regulatory framework, it is common for investors to estimate future utility earnings as the product of rate base, the utility's equity ratio and its allowed ROE.



In choosing among regulated utilities, investors particularly value management forecasts of rate base growth not only because of the visibility they provide into the long-term growth of earnings but also because the other earnings drivers listed above are so much more difficult to predict. At the annual financial conference of the Edison Electric Institute, rate base forecasts feature prominently in management presentations and discussions with investors.

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