Outlook: U.S. Public Power and Electric Cooperative Sector

Bonneville Power Administration

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Fitch Ratings

2018 Outlook: U.S. Public Power and Electric Cooperative Sector

Rating Outlook

STABLE

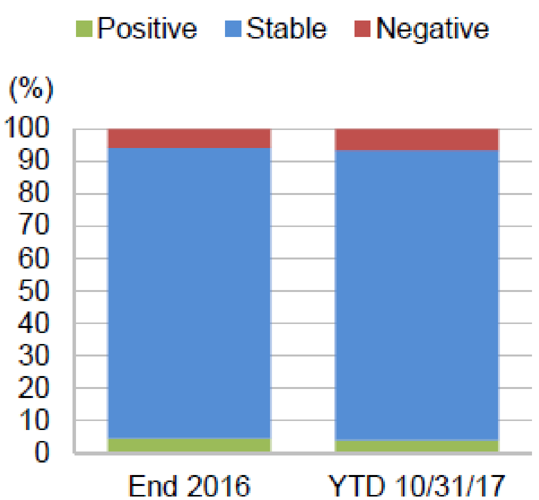
(2017: Stable)

Sector Outlook

STABLE

(2017: Stable)

Rating Outlooks



FitchRatings — Public Finance

Public Power / U.S.A.

Fitch 2018 Outlook: U.S. Public Power and Electric Cooperative Sector

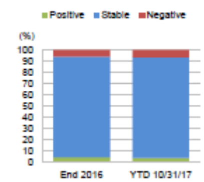
Outlook Report

Rating Outlook

STABLE

(2017: Stable)

Rating Outlooks



Source: Fitch.

Sector Outlook

STABLE

(2017: Stable)

- Electric affordability improves to precession levels.
- Environmental compliance burdens decline.
- Declining capital investment.

Related Research

Other Outlooks
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Other Research
Global Economic Outlook (December 2017)

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Rating and Sector Outlooks Stable: Fitch Ratings' 2018 outlook for the public power and electric cooperative sector is stable. Strong sector characteristics, including autonomous rate-setting authority, the essential nature of electric service and reliable cash flow, should allow the sector to retain a solid fiscal foundation. The outlook for ratings is also stable.

Affordability Returns to Prerecession Levels: Strong growth in household income has contributed to electric cost affordability that has returned to prerecession levels, easing rate pressures for most public power and cooperative issuers. Favorable operating conditions, a continued ability and willingness to increase electric rates to preserve margins, and modest economic growth should help sustain the sector's trend of improving financial metrics.

Regulations Uncertain: Actions by the Trump administration, including a proposed repeal of the Clean Power Plan (CPP) and withdrawal from the Paris climate agreement, make the future of environmental regulations aimed at reducing carbon dioxide (CO_2) emissions uncertain at best. Revisions to the CPP and CO_2 regulations would likely benefit coal-dominant utilities over the near term by easing or eliminating the burden of compliance.

Carbon Pressures Remain: Despite the shifting regulatory landscape, Fitch expects that state-level renewable mandates as well as mounting pressure from consumers, local governments and investors will pressure public power utilities to reduce CO_2 emissions over time. The proliferation of policies that reduce liquidity or force premature retirement could result in financial strain and downward rating pressure.

Declining Rate of Capital Investment: Capital investment as a percentage of depreciation has steadily declined throughout the public power sector since 2010, driven by lower growth in electric consumption and ample access to alternative generating capacity. Lower spending ratios should continue during the near term as consumption and resource development trends limit sector-wide investment in generation. Lower funding requirements and redirection of cash flow toward reserves and debt reduction would be supportive of credit quality.

Favorable Operating Environment: Low natural gas prices and interest rates should support financial performance through the outlook period, but future gains may be limited. Fitch expects natural gas prices to remain low by historical standards at $3.00/per thousand cubic feet (mcf) for 2018. Long- and short-term interest rates are expected to rise steadily through 2018, but higher levels should not pose a material risk to issuers given the sector's concentration of fixed-rate debt and lower funding requirements.

Outlook Sensitivities

Stable Sector Outlook: The essential services provided by the sector, monopolistic business nature and autonomous rate-setting authority are key factors in the sector's historical performance stability. Given the sector's fundamentals and Fitch's expectation for modest economic growth nationally, a shift in the sector's stable outlook in 2018 is unlikely.

Unwillingness to Support Metrics: A widely observed unwillingness of public power and cooperative issuers to raise rates to support current and projected financial metrics in response to economic weakness, increased cost pressures or declining consumption, could change the sector rating outlook to negative.

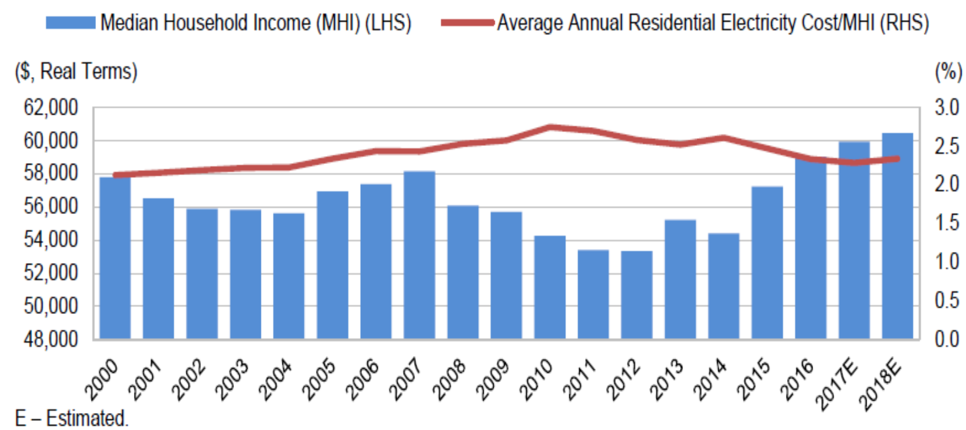
www.fitchratings.com | Learn more at our Outlooks site: CREDIT OUTLOOK 2018 | December 6, 2017

Sector Outlook: Key Issues

Affordability Returns to Prerecession Levels

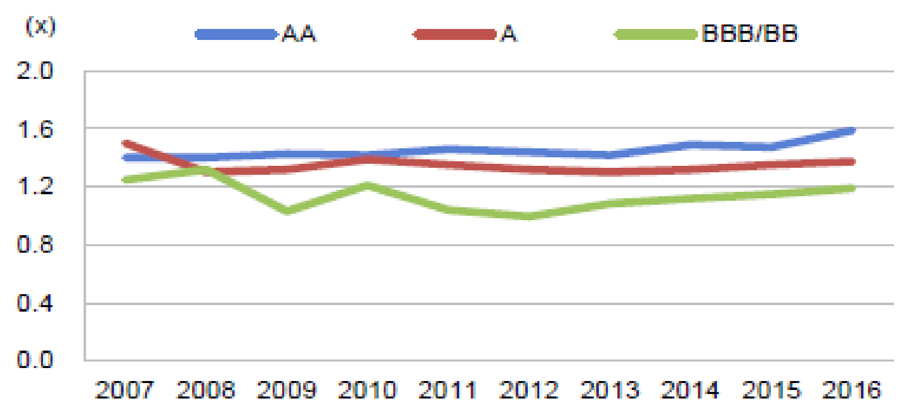
- Strong growth in household income has contributed to affordability that has returned to prerecession levels, easing rate pressure
- Real household income rose dramatically in 2015, and again in 2016; Modest improvements forecast in 2017-2018
- Affordability ratio of 2.34% in 2017 versus 2.75% in 2010
- Fitch's growth forecasts recently revised; 2017 GDP higher (2.3%); 2018 growth (2.5%) on upwardly revised outlook for private-sector investment and modest fiscal boost;
- Real incomes are expected to benefit from an increasingly tight labor market; Consumer spending growth remains solid; Consumer confidence readings at highest levels since November 2000.

Residential Electric Cost to Median Household Income



E – Estimated.
Sources: U.S. Energy Information Administration, IHS Markit, U.S. Census, Fitch.

Coverage of Full Obligations
Indicates the margin available to meet current debt service and other fixed obligations.

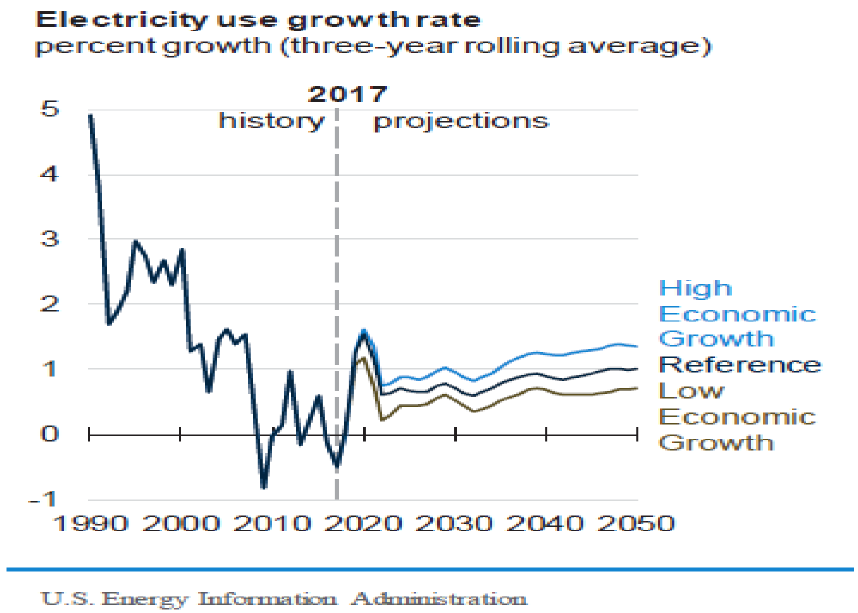


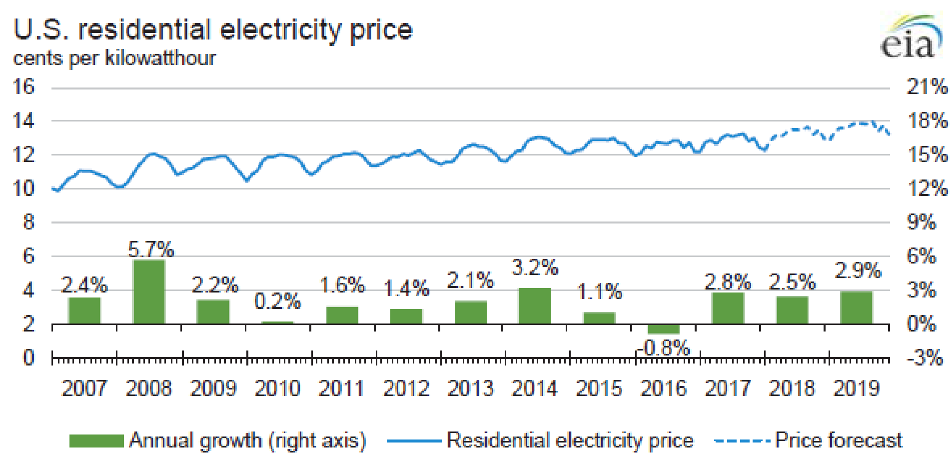
Source: Fitch Ratings.

Sector Outlook: Key Issues

Affordability Returns to Prerecession Levels

- Lower electric costs tied more to declining consumption than lower electric prices; Residential consumption has declined approximately 4% since 2005; Real prices have risen nearly 9%
- Total residential consumption forecast unchanged for 2016, decline of 1.5% for 2017, increase of 3% in 2018; Per capita declines continue
- Real price decline of 2.0% for 2016; Increases in 2017 and 2018
- Improved affordability through 2017 should support rate setting strategies





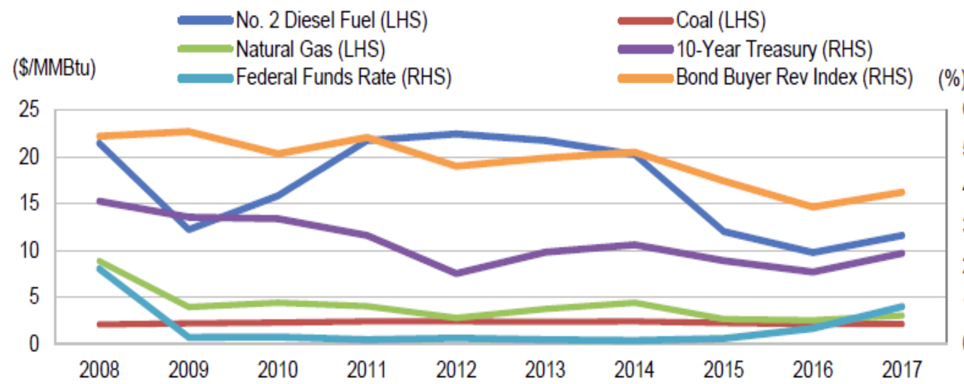
Source: Short-Term Energy Outlook, February 2018.

Sector Outlook: Key Issues

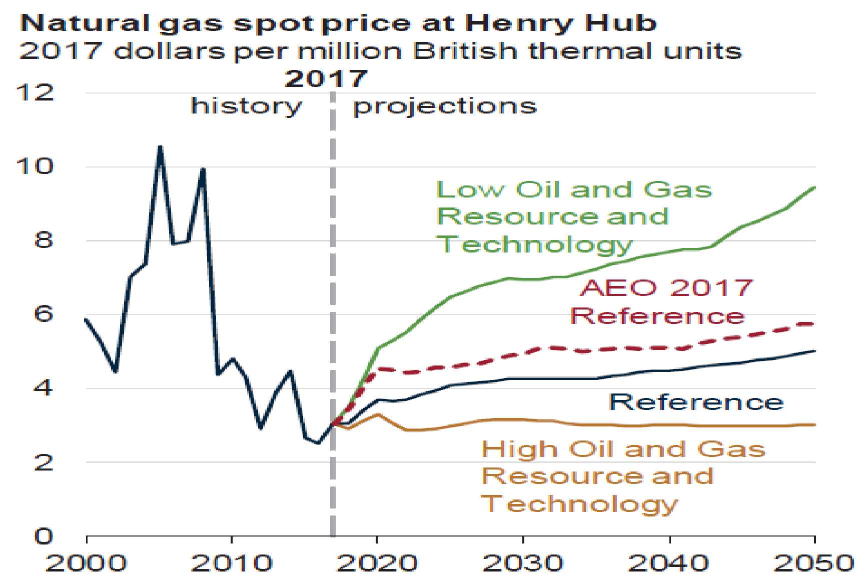
Lower Fuel Cost Broadly Positive

- Low fuel costs and energy prices should remain broadly positive through 2018
- Fitch 2018 base case ($3.00/mcf) and long-term ($3.25/mcf) natural gas prices are higher than a year ago; Storage levels have moved toward historical averages, mainly due to a relatively subdued summer injection season.
- AEO 2018 Reference Case forecasts increasing gas prices through 2030 driven by production expansion into more expensive-to-produce areas and increased export demand.
- Gas prices highly sensitive to domestic resource and technology assumptions; Low R&T case assumes higher costs for Alaska and Lower 48 reserves (Permian and Appalachian) and slower technology improvement.
- Given the sector's growing reliance on natural gas generation at ~32% in 2017, a sudden unexpected rise in cost remains a concern.

U.S. Average Cost of Delivered Fuel for Electric Generation and Interest Rates



MMBtu – Million British thermal units.
Source: U.S. Energy Information Administration, U.S. Federal Reserve.



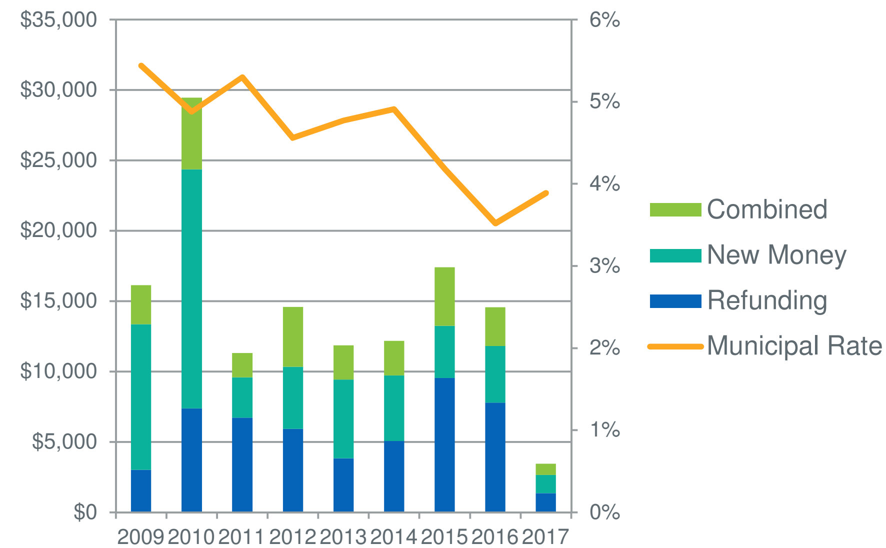
Source: EIA 2018 AEO

Sector Outlook: Key Issues

Low Interest Rates Positive; Upward Pressure Mounts

- Low interest rates and robust access to the capital markets have been positive
- Replacement and refunding of debt has reduce revenue requirements; More than 70% of 2016-2017 electric power debt earmarked for refunding; Further gains from refunding could be limited, particularly following tax reform
- Fitch expects the Fed to raise rates another 100 basis points in 2018; US 10-year Treasury yield of 3.75% by the end of 2019
- Higher short-term rates should not pose a material risk to issuers; Low percentage of short-term debt and unhedged variable rate exposure (4.7%); Nearly 57% of issuers have no variable rate exposure
- Higher long-term rates may limit headroom created in recent years and could result in upward pressure on rates.

Municipal Bond Issuance - Electric Power Sector



Source: The Bond Buyer, Fitch

United States - Forecast Summary

(%)	Ann. Av.2012-16	2016	2017f	2018f	2019f
GDP	2.2	1.5	2.3	2.5	2.2
Consumer Spending	2.4	2.7	2.7	2.2	1.9
Fixed Investment	5.1	0.7	3.7	3.8	3.6
Net Trade (contribution pps.)	-0.1	-0.2	-0.1	-0.1	-0.1
CPI Inflation (end-year)	1.3	2.1	2.1	2.2	2.2
Policy Interest Rate (end-year)	0.31	0.75	1.50	2.50	3.25
Exchange Rate, USDEUR (end-year)	0.82	0.95	0.87	0.87	0.87

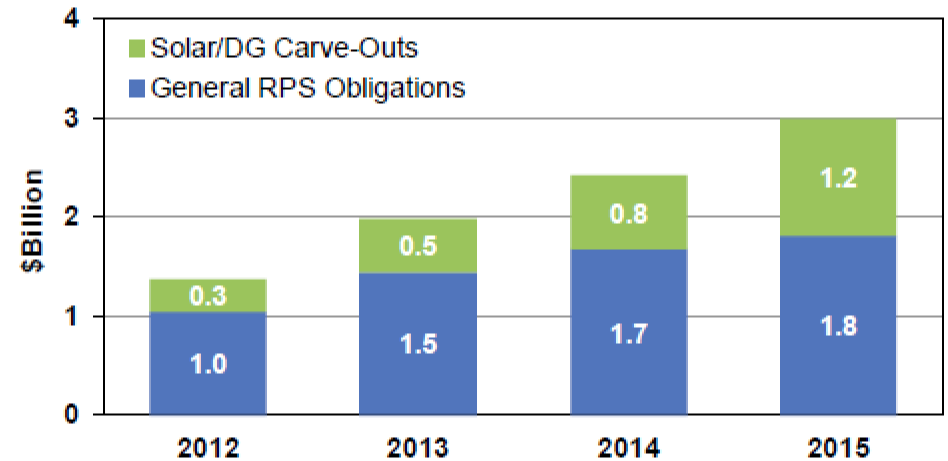
Source: Fitch

Sector Outlook: Key Issues

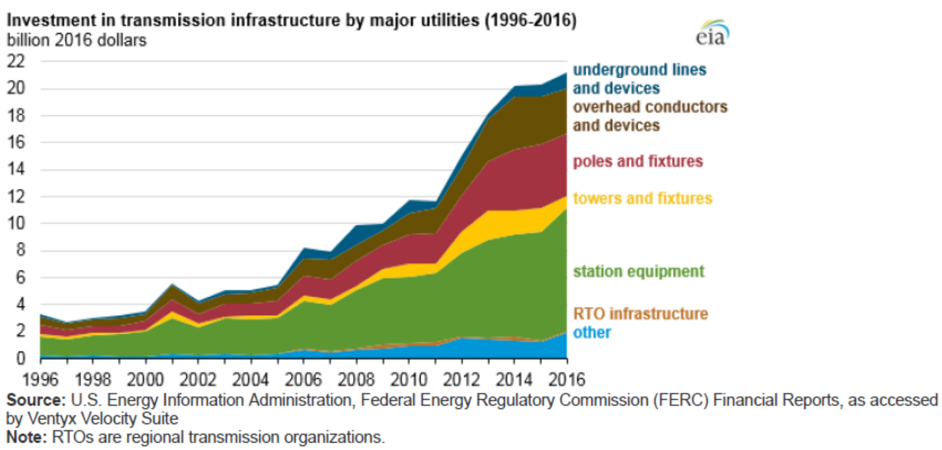
Higher RPS Compliance and Transmission Costs Offset Other Gains

- RPS compliance costs totaled 3.0 billion in 2015, up from $2.4 billion in 2014; 1.6% of average retail electricity bills; as high as 12% in California;
- Over 24,000 miles of new transmission lines built in 2011-2015, twice the number of miles added in 2006-2010
- $102 billion invested in new transmission to strengthen the grid and connect new generation

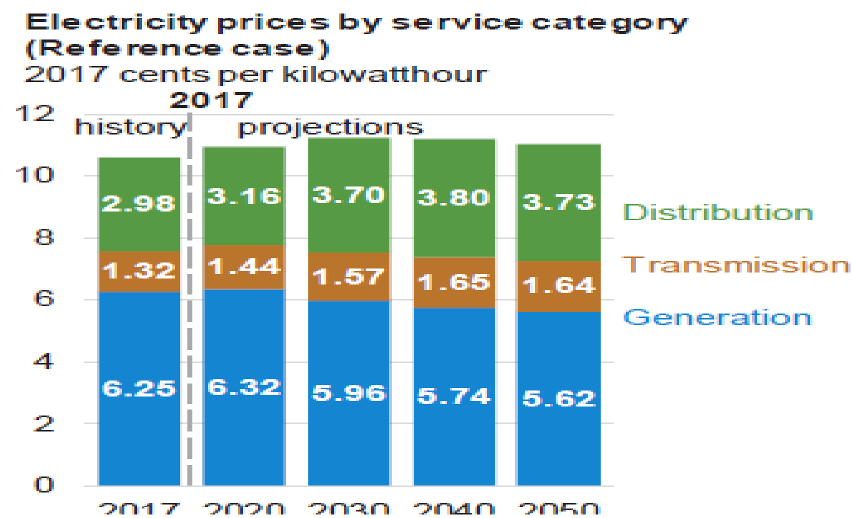
Total RPS Compliance Costs



Source: Lawrence Berkeley National Laboratory



Source: EIA

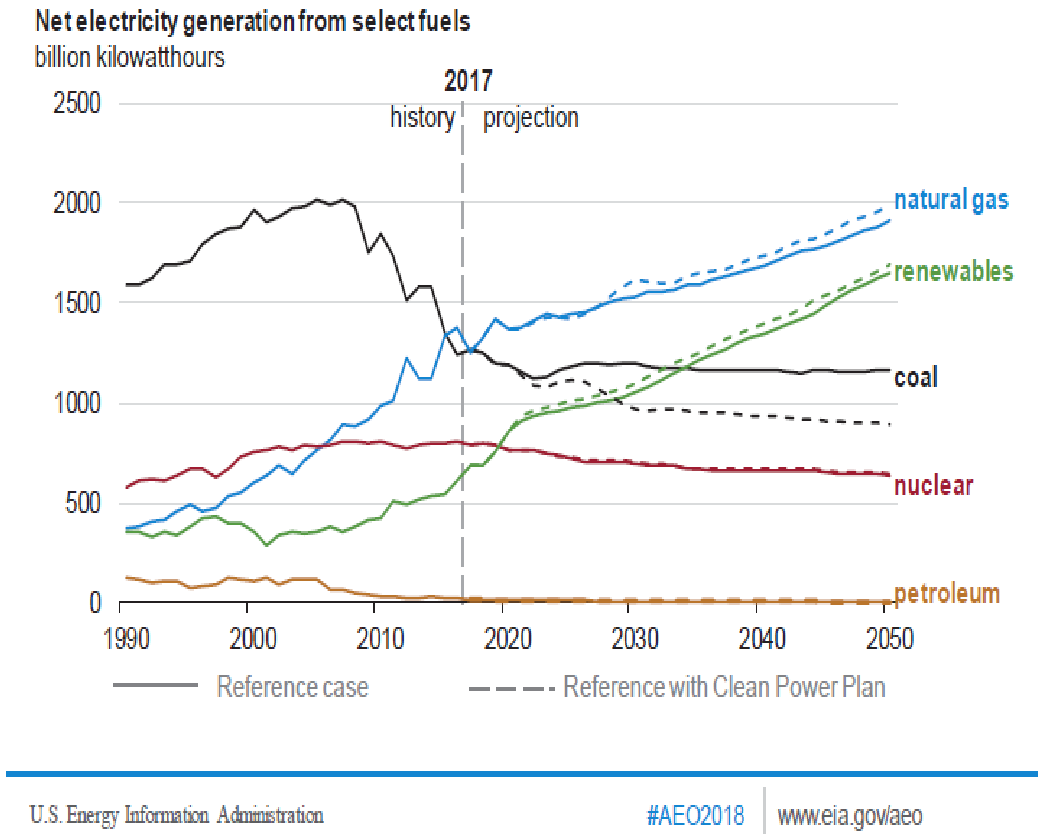


Source: EIA

Sector Outlook: Key Issues

Environmental Regulations Uncertain….

- Actions by the Trump administration, including proposed withdrawal from the Clean Power Plan (CPP) and from the Paris climate agreement make the future of environmental regulation uncertain at best.
- Repeal of CPP could provide some flexibility and near-term benefit as issuers pursue economic dispatch..
- Coal-dominant utilities likely to benefit, particularly those in challenged by the CPP: Kansas, Missouri, Nebraska, Tennessee and West Virginia
- Any benefits of coal-fired generation are expected to be short-lived…



Sector Outlook: Key Issues

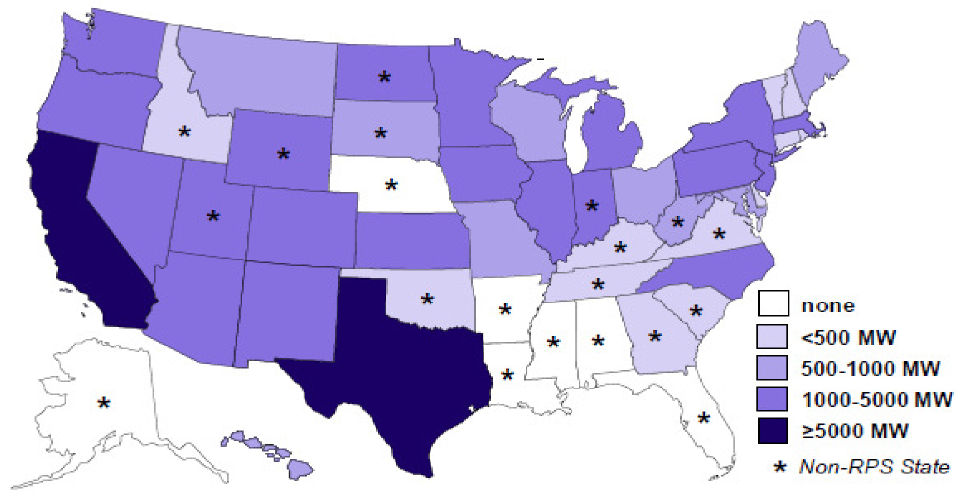
…but Carbon Pressures Remain

- State level renewable mandates as well as mounting pressure from consumers, local governments and investors alike are expected to affect resource planning for years to come
- Nineteen states have adopted renewable standards or goal that apply to public power utilities.
- These initiatives, together with proposals and policies aimed at limiting investment in thermal coal, are likely to drive issuers toward strategies promoting reduced emissions.
- CA Insurance Commissioner proposal targets wider universe of issuers and activities
- Proliferation could significantly reduce liquidity or force consideration of premature retirement, resulting in financial strain and downward rating pressure

FitchRatings

FITCH: PARIS EXIT WILL NOT STOP US PUBLIC POWER CO2 REDUCTION

RPS Capacity Additions: 2000-2016



Source: Berkeley Lab

Notes: States denoted "Non-RPS State" if an RPS did not exist at any point over the 2000-2016 period.

FitchRatings

FITCH: EVOLVING POLICIES MAY CHALLENGE US PUBLIC POWER LIQUIDITY

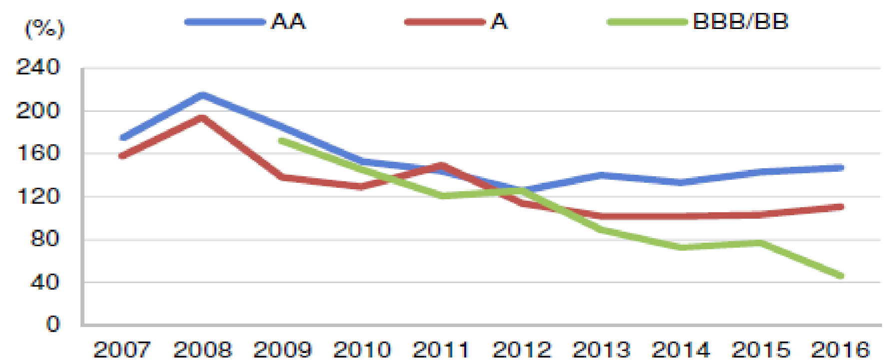
Sector Outlook: Key Issues

Declining Rates of Capital Investing

- Rate of capital investment for public power issuers declined in 2016, continuing a trend begun earlier this decade.
- Since 2010, the median ratio of capital investment to depreciation has steadily declined from 166% to 121%.
- Over 60% of Fitch-rated issuers had lower capex in 2016 than 2010

Retail Electric Trends

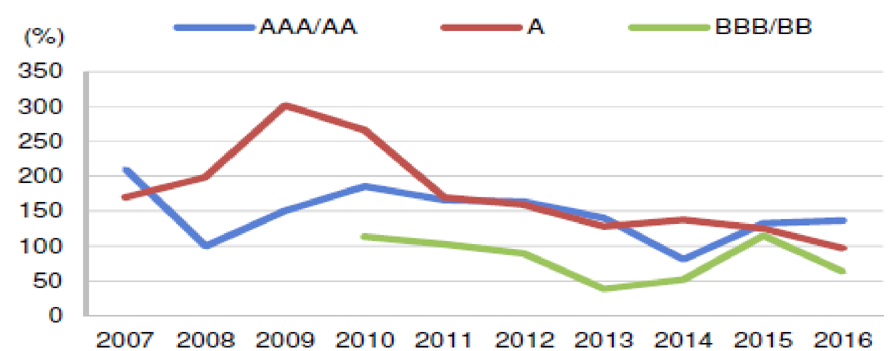
Capex/Depreciation and Amortization
Indicates whether annual capital spending keeps pace with depreciation.



Source: Fitch Ratings.

Wholesale Electric Trends

Capex/Depreciation and Amortization
Indicates amount of capital spending relative to asset depreciation.

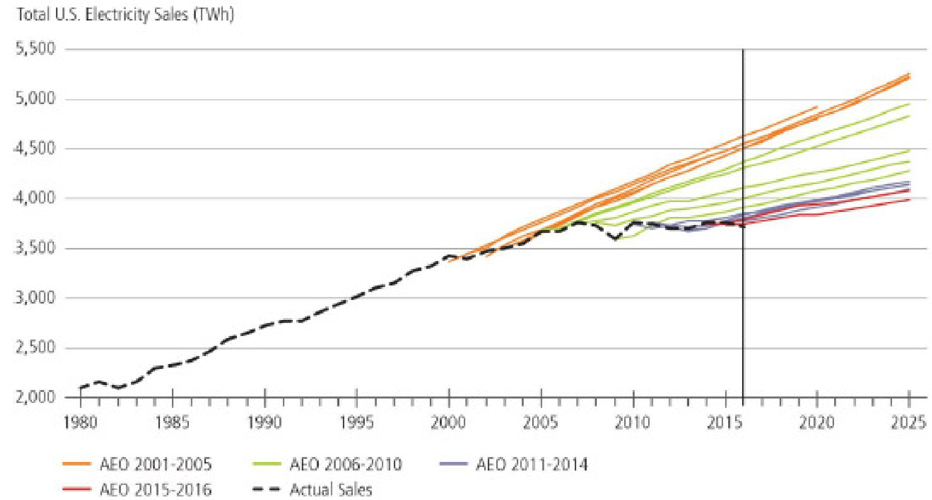


Source: Fitch Ratings.

Sector Outlook: Key Issues

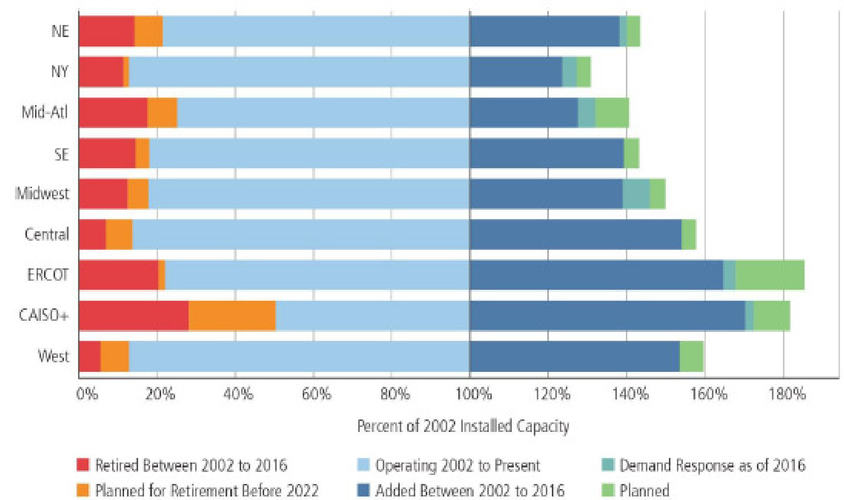
Declining Rates of Capital Investing

- Low growth in electric consumption, particularly for residential users, has obviated the need for new generation build;
- Investment throughout the broader utility sector has continued, driven in part by tax credits and other incentives, offsetting retirements of coal and natural gas capacity
- Renewal and replacement investment remains steady for public power utilities, and investment in transmission has grown;



Source: EIA; DOE

Figure 3.5. Operating Generation Capacity, Additions, Retirements, and Announced Retirements by Region for All Generation Types, January 2002–December 2022[28]

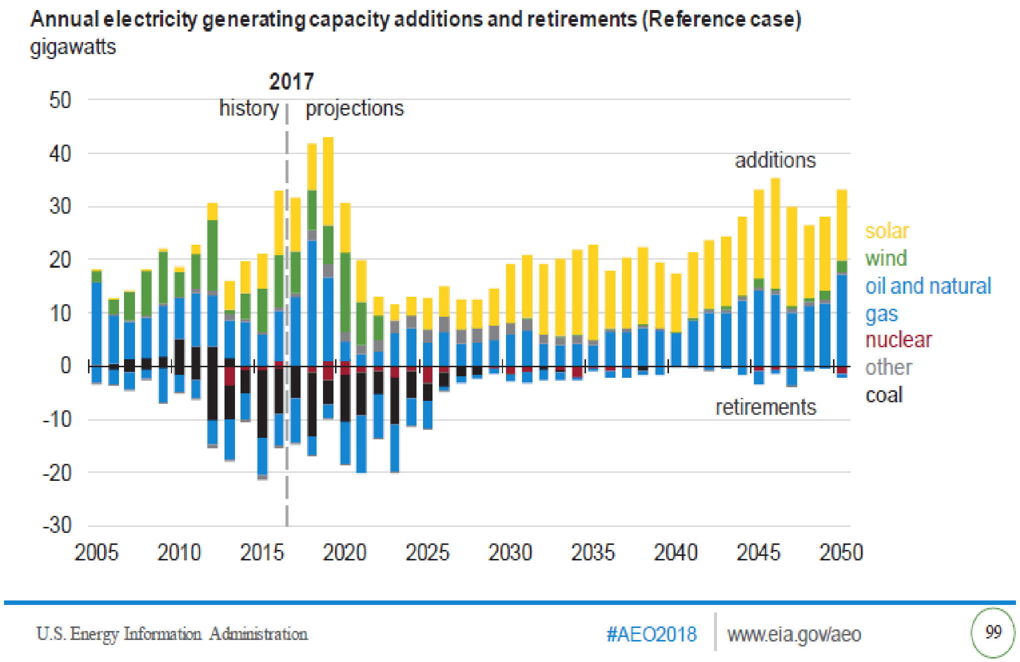


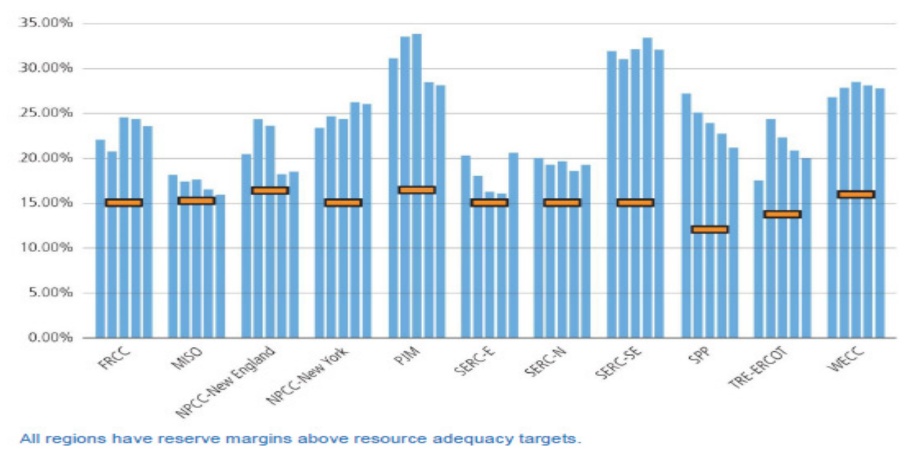
Source: EIA; DOE

Sector Outlook: Key Issues

Declining Rates of Capital Investing

- Fitch expects the rate of investment to remain depressed over the near term.
- EIA forecasts electric power generating net capacity will decline by 2.9% during 2017–2021
- New capacity additions of wind and solar resources will exceed 52 GW or 64% of new additions;
- Tax credits and incentives will continue to make renewable resource purchase agreements attractive for not-for-profit utilities further limiting investment.
- Virtually no additional coal or nuclear resources are anticipated.
- Regional excess capacity should remain robust; All NERC regions expected to maintain reserve margins above resource adequacy targets.





Source: EIA; DOE

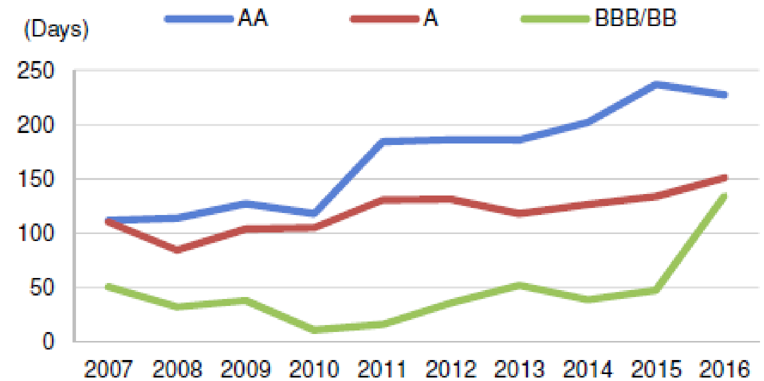
Sector Outlook: Key Issues

Declining Rates of Capital Investing

- Lower capital spending should support sector credit quality;
- Systems debt-funding capex should clearly benefit from lower debt levels.
- The effect on credit quality will depend on alternative use of excess cash.
- Credit effect for systems funding capex with funds from operations will depend on alternative use of cash.
- Using funds to bolster reserves and reduce outstanding debt would be viewed as more supportive of credit quality than if funds are returned to end users through a reduction in rates

Days Cash on Hand

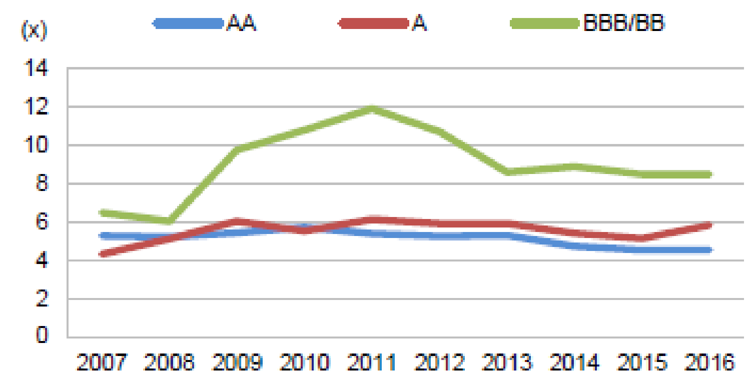
Indicates financial flexibility, specifically cash and cash equivalents, relative to expenses.



Source: Fitch Ratings.

Debt/FADS

Indicates the size of debt compared with the margin available for debt service.



Source: Fitch Ratings.

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