Fitch 2018 Outlook: North American Energy Infrastructure

Stable Ratings Predominate

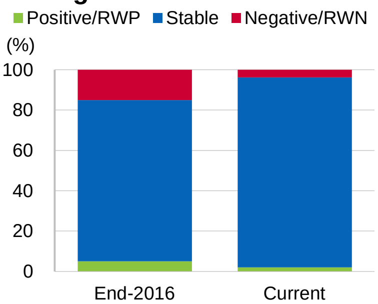
Outlook Report

Rating Outlook

STABLE

(2017: Stable)

Rating Outlooks



RWP – Rating Watch Positive.
RWN – Rating Watch Negative.
Source: Fitch.

Sector Outlook

STABLE

(2017: STABLE)

THERMAL POWER: STABLE

- Contracted assets avoid market price volatility.

RENEWABLES: STABLE

- Cost decreases mitigate potentially unfavorable federal policies.

OIL & GAS: STABLE

- Low demand growth offset by increasing exports.

Related Research

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Other Research
Global Economic Outlook — December 2017 (December 2017)

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Contracted Thermal Projects: Thermal power projects maintain a stable rating outlook, largely reflecting fixed-price power purchase agreements (PPAs) that avoid the revenue volatility encountered in merchant energy markets. Proven technology, experienced operators and effective operating and maintenance programs enable strong availability and limit operating cost volatility. Tolling-style agreements mitigate feedstock price volatility and improve cash flow stability. The single Negative Watch in the sector is tied to the revenue counterparty rating, which constrains the coal-fired facility's project rating.

Renewable Resource Risk Improving: Rating outlooks remain stable for renewable energy projects, whose largely contracted power sales agreements mitigate price volatility but remain exposed to volume risk. Favorably, the accuracy of resource forecasts is improving, particularly for wind projects based on post-completion wind studies, contributing to ratings stability. Higher resource volume volatility and operational challenges drive speculative-grade ratings for geothermal and biomass projects in Fitch Ratings' portfolio. The only Negative Watch in the sector is due to unfavorable price volatility for a biomass project.

Oil & Gas Projects Advancing: Stable outlooks prevail for operating and under-construction liquefied natural gas (LNG) export terminals in the U.S., underpinned by tolling-style agreements with investment-grade counterparties, minimizing exposure to price and volume risk. Extreme weather events and contractor issues increased the risk of completion delays for some terminals, but properly structured construction contracts are expected to sufficiently mitigate the impact of any completion delays. Pipelines and a gas processing project also included in this sector are backed by strong contracts and structures that mitigate persistently low commodity prices.

Outlook Sensitivities

Uncertain Federal Policies: Recently proposed revisions to the U.S. tax code would reduce the value of production tax credits, tighten the requirements to qualify for the tax credits and otherwise diminish the value of new renewable energy projects. Separately, the Trump administration is also considering imposing an import tariff on solar photovoltaic (PV) panels in response to a recent trade commission ruling. The uncertainty of final results of these efforts is likely to stall the development of renewable energy projects, and may significantly reduce the growth rate of renewable generation capacity.

Tepid Demand Growth: Electricity demand growth has stagnated, due to slower economic growth and advances in consumption efficiency for lighting, appliances, electronics and equipment, leading to little if any real price increases. Growing supplies of renewable energy generation, with no fuel or emissions costs and continuing capital cost decreases, further supress clearing prices in competitive power markets.

Without long-term fixed-price PPAs, developers are financing new gas-fired power plants backed by short-term hedging products to offset low market prices. These projects may be unable to refinance their construction loans absent a reversal of current market conditions.

Thermal Power (Rating Outlook: Stable; Sector Outlook: Stable)

Contracted Projects Maintain Stable Outlook

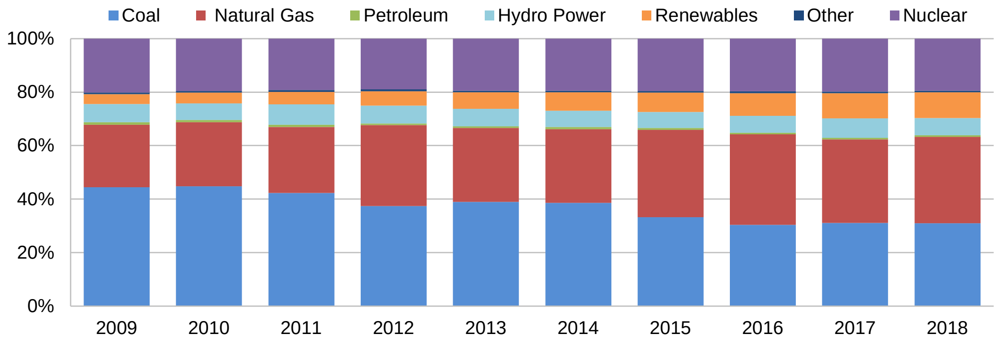
Fitch's thermal portfolio is largely insulated from commodity price volatility and has limited exposure to market prices. Natural gas-fired facilities constitute about 75% of Fitch's thermal portfolio, a proportion that has slowly risen in the last several years with the addition of new projects and outpacing the retirement of non-gas projects. Most thermal ratings reflect fixed-price PPAs that include capacity revenues to compensate for capital costs and energy payments to cover variable fuel and operating costs.

The sector features proven technology and an ample number of qualified operators that further limit operating risk and cost volatility, allowing the vast majority of projects to maintain sufficient performance to maximize revenues. Fitch expects rated thermal power projects to continue exhibiting stable cash flows, barring failure to maintain adequate availability levels, heat rates, and operating cost profiles. Projects rated below investment grade have experienced specific operational difficulties or have significant merchant exposure, increasing cash flow volatility and reducing operating margins.

Steady Thermal Generation Share Amid Soft Demand and Prices

The overall U.S. generation breakdown by fuel type persists with natural gas and coal each commanding close to a third of the market since 2015 and natural gas marginally pulling ahead as the main fuel type in 2016. Absent a nationwide cost for carbon emissions imposed on generators, Fitch expects these ratios to be maintained in the near to medium term.

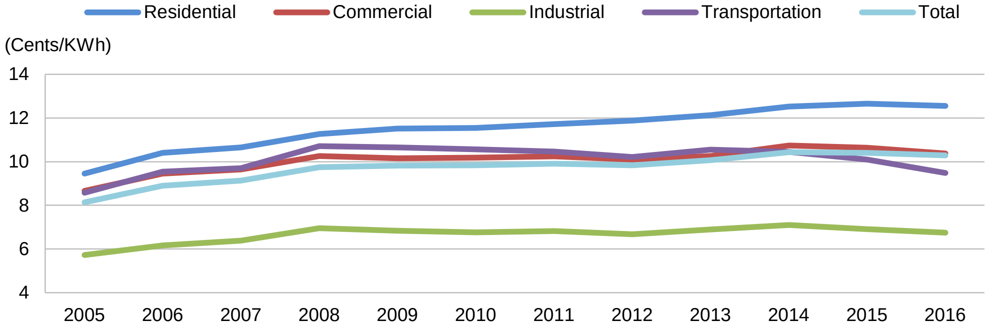
U.S. Electricity Generation by Fuel



Source: U.S. Energy Information Administration Short-Term Energy Outlook, October 2017.

Overall electricity consumption has been stagnant and retail prices have been either flat or decreasing for the last several years. Following real declines in 2016, residential prices grew by 3.2% in 2017 and are expected to increase modestly again in 2018 if consumption patterns reverse after several years of decline. Organic economic growth is expected to stimulate demand growth, but will need to overcome energy efficiency gains that otherwise counteract increased demand.

Average Price of Electricity



Source: U.S. Energy Information Administration.

Regulatory Fluctuations

After formal adoption of the Clean Power Plan (CPP) in 2015, followed by a period of legal challenges and uncertain implementation, in October 2017, President Trump's administration formally issued a rule repealing the CPP. The current action to repeal the CPP is also subject to competing legal challenges creating a very uncertain environment. The Environmental Protection Agency (EPA), significantly restructured under the current administration, is considering alternatives to the CPP, though no specific proposals have been made. The action of repealing the CPP coupled with the decision to exit the Paris Climate Agreement reverses previous environmental policies that focused on carbon emission reductions. However, it is unclear if this policy shift can be maintained in the long term or whether the U.S. will return to more progressive environmental policies under a new administration. In the near term, Fitch expects continuing favorable regulatory treatment for thermal power generators.

The implementation of the CPP was expected to accelerate retirement of coal-fired assets and increase the development of gas-fired and renewable assets, as states implemented plans to reduce carbon emissions. Without the CPP or some alternative plan, coal facilities not already planned for retirement are likely to extend their service lives, helping to maintain coal's share of the generation mix. In the longer term, even without more restrictive emissions regulations, coal generation will be challenged to compete with low-priced natural gas and continually falling prices for renewable energy, and may face increased financing costs as industry investors continue to pursue coal-free portfolios.

Renewables (Rating Outlook: Stable; Sector Outlook: Stable)

Reliable Operations

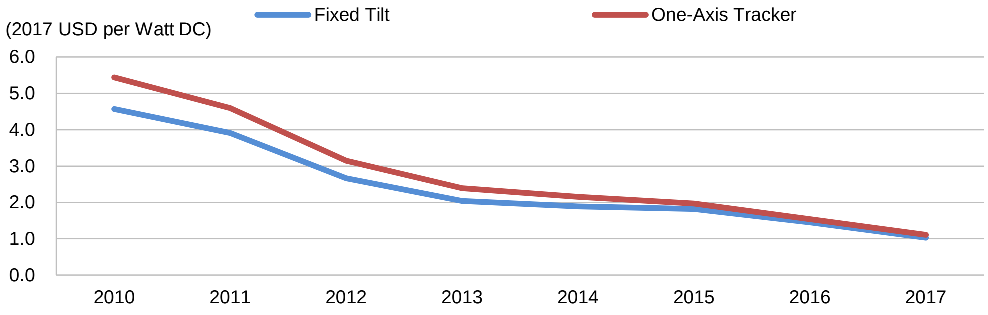
Fitch's rated renewable energy projects have generally demonstrated the ability to maintain high levels of availability and operating costs within base case expectations. Where temporary energy production shortfalls have occurred due to technical challenges, projects have successfully returned to normal operational levels with no impairment to long-term performance expectations. For solar and wind projects, the distribution of capacity across multiple generators has limited the negative impact of forced outages on revenues. Rated renewable projects largely benefit from fixed-price, contracted energy sales agreements that mitigate cash flow volatility and underpin the stable outlook for the sector.

Resource Risk Remains Key

The performance of renewable resources, the primary driver of renewable project revenues, has been mixed. Solar projects have performed well relative to resource consultants' forecasts, and output levels tracked closely with base case expectations. Conversely, wind projects have largely underperformed with some recovery in resource conditions over the past year. Despite lower than anticipated production, investment-grade wind projects have retained sufficient financial cushion to withstand periods of extreme stress. Fitch has also observed better alignment between actual energy production and forecasts for more recently executed transactions. Fitch believes that the accuracy of wind studies has improved over time, particularly when forecasts incorporate post-completion operating data.

Fitch's renewable portfolio includes hydro, geothermal and biomass energy projects, none of which are rated investment grade due to combinations of merchant price risk, operational challenges and renewable resource deficiencies. Geothermal resources often diverge significantly from consultants' expectations, while biomass projects' exposure to feedstock costs can lead to margin compression. The relative complexity of geothermal and biomass technology also increases performance and operating cost volatility.

Utility Scale Photovoltaic
(Total Installed Cost)



Source: National Renewable Energy Laboratory, Fitch.

Increasing Competitiveness, Expiring Incentives

The rapid growth of renewable capacity continues as the levelized cost of electricity for wind and solar generation has declined. Technological advancements that enhance efficiency, capital cost reductions and economies of scale have improved the competitive position for renewable energy generators. Wind PPA pricing, for example, has fallen nearly $20/MWh in certain regions. However, there are signs that the decline in installed costs for wind has moderated, while market prices for solar panels have adjusted due to potential tariffs.

State-level initiatives, such as renewable portfolio standards, will likely drive renewable energy demand in the near term as federal support for renewable energy weakens. Proposed federal legislation has the potential to limit the value and duration of existing tax credits for solar and wind projects, though recent political developments support maintenance of the existing laws. Expected reductions in corporate tax rates may curb the appetite for tax-equity investments in new renewable energy projects, which could affect financing options.

While utility-scale installations dominate capacity additions, alternate renewable models such as corporates PPAs and community solar schemes could provide other avenues for renewable growth. Improvements in battery storage technology and installed costs could supplement renewables development, particularly solar, by providing opportunities for peak shaving and increased grid reliability. Fitch has rated projects that include battery storage, and we expect to see more storage installations as battery costs continue to decline. The availability of financing and the design of economic pricing structures will ultimately determine the viability and progress of these alternatives.

Oil & Gas (Rating Outlook: Stable; Sector Outlook: Stable)

Increasing LNG Capacity

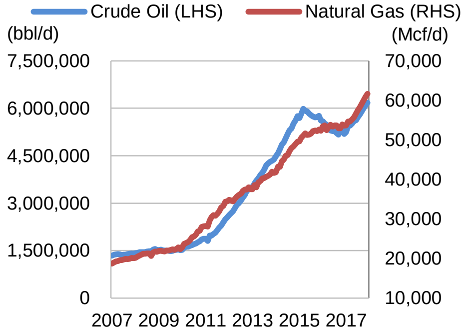
The stable outlook reflects the steady expansion of operational capacity and forthcoming completion of rated U.S. Gulf Coast LNG export terminals. These early movers capitalized on infrastructure surrounding existing LNG regasification terminals, reducing capital costs and facilitating necessary permits and approvals. These projects are also properly insulated from typical construction risks, such as contractor underperformance and force majeure events, through robust scheduling cushion, comprehensive contractor arrangements and sufficient capital commitments, increasing the likelihood of timely completion.

Investment-grade ratings are supported by tolling-style agreements with investment-grade counterparties, which, in some cases, are also equity sponsors of the facilities. Once operational, the tolling agreements substantially reduce feedstock cost and supply risk for the projects, and provide supply certainty and diversification for off-takers. The long-term, fixed-price agreements insulate rated projects from the global LNG oversupply currently challenging the development of new facilities not already approved and permitted.

Prices Remain Stagnant

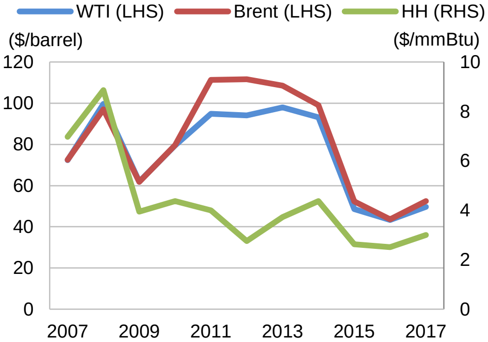
After pausing in 2016, production from major U.S. shale energy plays is increasing once more, thanks to continuing productivity improvements and expectations of modest price increases. Oil prices moderated from lows reached in 2016, but are not expected to increase significantly in the near term. Spot natural gas prices have hovered around $3 per million British thermal units in 2017, about 50 cents above recent lows, but these are expected to rise only modestly due to increased production offsetting growing domestic demand and exports.

U.S. Shale Oil and Gas Output Rising Again



bbl/d – Barrels per Day.
Mcf/d – Million Cubic Feet per Day.
Source: Energy Information Agency, Fitch.

Commodity Prices Recovering Modestly



WTI – West Texas Intermediate. HH – Henry Hub.
mmBtu – Million British thermal units.
Source: Energy Information Agency, Fitch.

In addition to LNG facilities, rated oil & gas projects include oil and gas pipelines and a gas processing platform, with strong competitive positions or contracts and structures that mitigate persistently low commodity prices. Those that retain commodity price exposure may display significant cash flow volatility, an aspect consistent with speculative grade ratings.

2017 Review

Fitch's rating actions for monitored energy infrastructure projects in 2017 were predominantly affirmations (87%), with upgrades (10%) significantly outpacing downgrades (3%), demonstrating the rating stability of the overall portfolio. Upgrades were due to criteria changes for solar energy projects, and downgrades reflected project-specific operating performance deterioration and market price exposure.