GAS POWER BURN

PREVIEW | **Market Outlook Report** | June 2019

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FundamentalEdge
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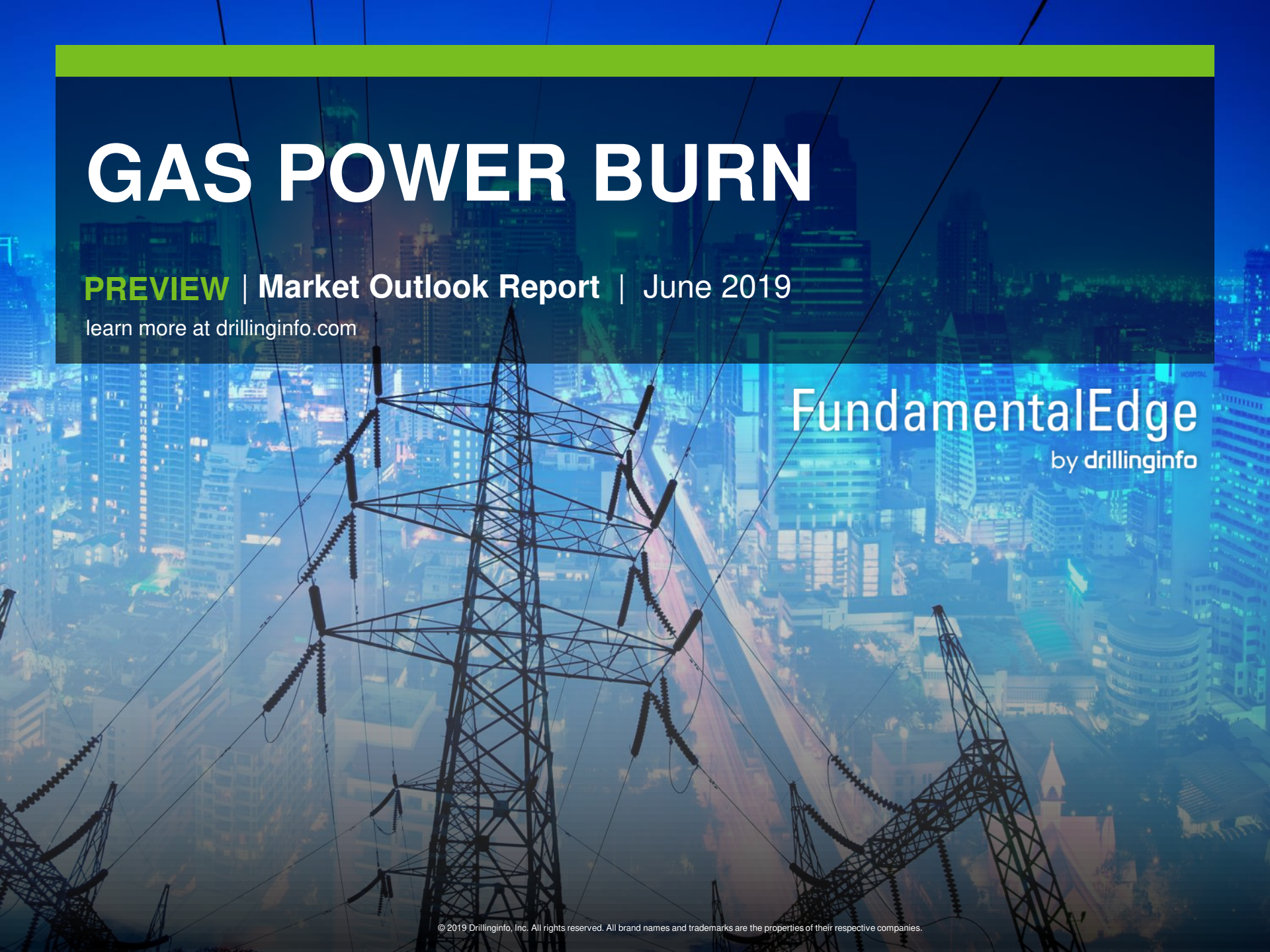


Demand Outlook for Gas in 2019

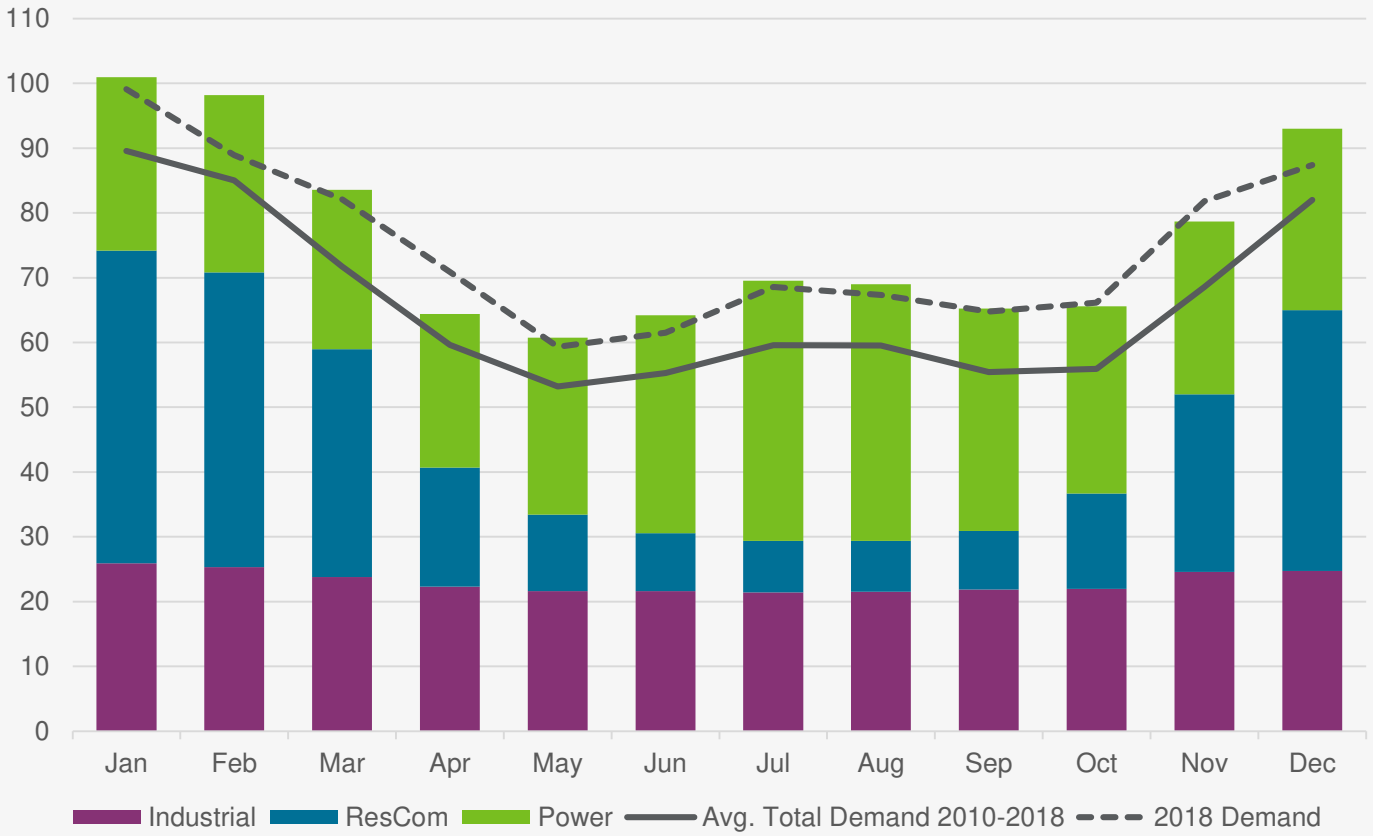
Domestic natural gas demand is expected to increase YoY in 2019, with demand averaging ~76.09 Bcf/d, up from 74.82 Bcf/d in 2018.

Power demand is expected to increase by 1.11 Bcf/d. Res/Com demand is expected to decline 0.20 Bcf/d, while Industrial demand is expected to gain 0.36 Bcf/d.

The decrease in Res/Com demand is largely due to winter 2017-18 going into April, which caused 2018 ResCom demand to be above average.

CHART 1

2019 Domestic Natural Gas Demand by Sector



Sources: DI Analysis, EIA

Natural Gas Power Burn

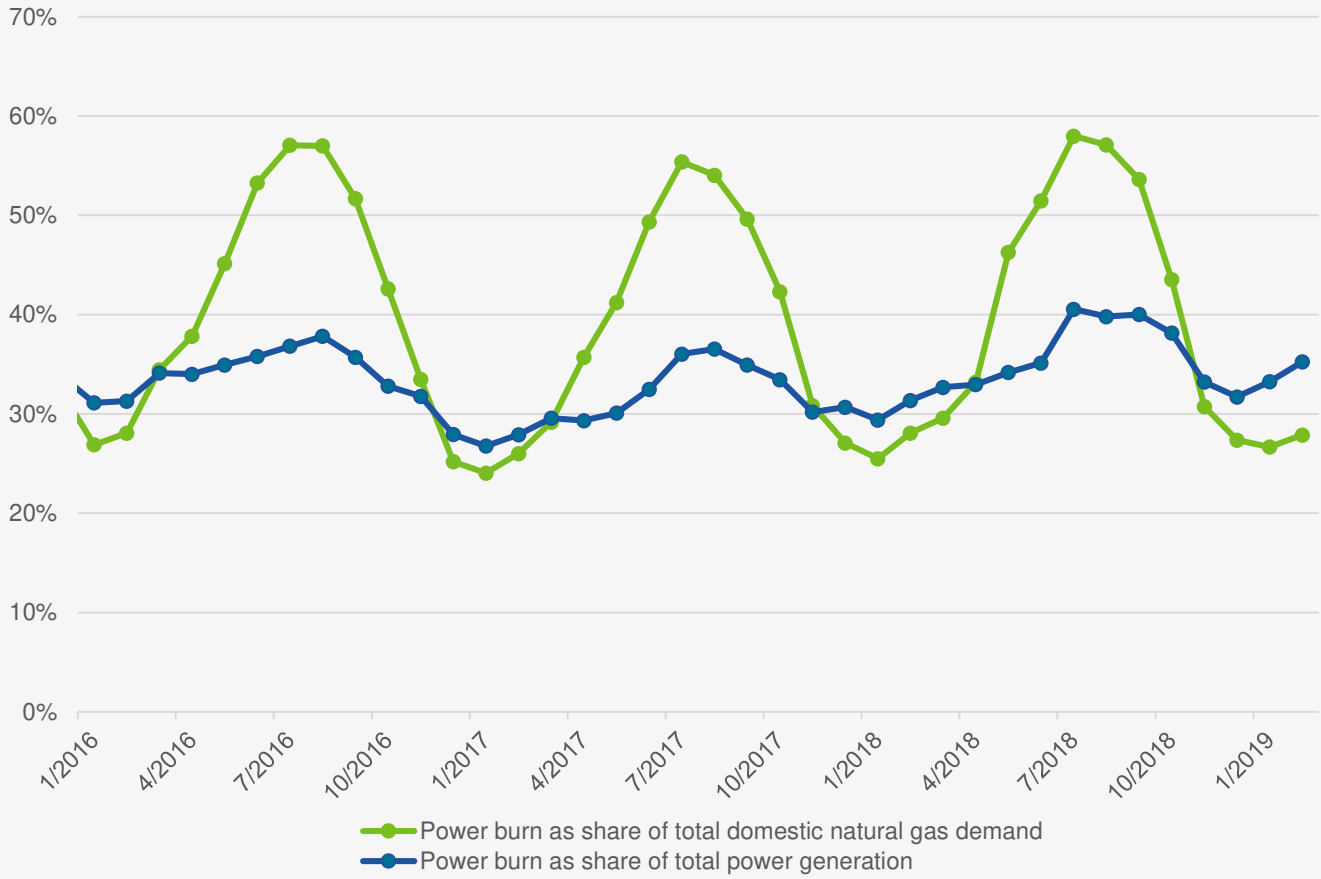
During the summer months, natural gas demand from the electric power sector makes up a larger share of total domestic gas demand compared to winter. Last summer, power burn represented 49% of the total gas demand consumed in the US.

While winter heating demand from the residential and commercial sectors is very price inelastic due to a lack of substitutes, summer cooling demand from the power sector is price sensitive. Grid operators have the flexibility to respond to changes in the pricing of input fuels by substituting coal and gas for each other.

The share of total power generation attributed to gas has been growing over the past several years due to changes in infrastructure, most specifically additions to power plant fleets fueled with gas and added gas transport capacity.

CHART 2

Gas Power Burn as Share of Total Domestic Gas Demand and Total Power Generation



Source: EIA

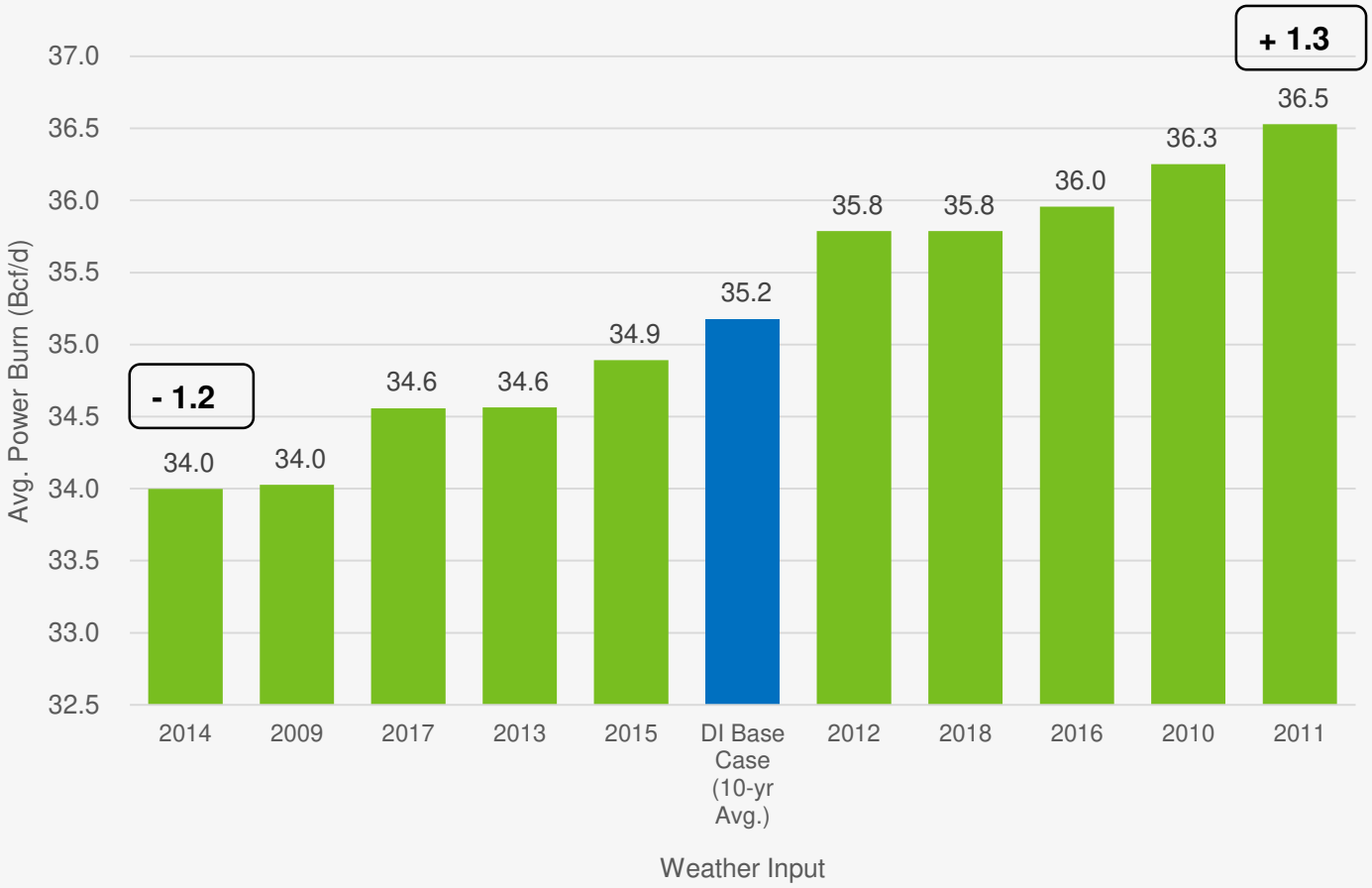
Summer 2019 Gas Demand Outlook

Summer gas demand for the power sector can vary considerably depending on the weather. By running our power demand model with historical weather inputs, we can estimate the variability of demand according to the last 10 years of weather.

Between May and August, the peak summer months, power demand is expected to average 35.2 Bcf/d, assuming 10-year average weather. A repeat of the hot summer of 2011 would lead to an additional 1.3 Bcf/d in power demand, while a repeat of the mild 2014 summer would lead to a decrease of 1.2 Bcf/d.

CHART 3

Summer (May-Aug) Power Burn Forecast with Historical Weather Inputs



Sources: DI Analysis, EIA

Power Demand: Battle with Renewables

A number of wind and solar projects are slated to come online over the next 5 years. Chart 4 shows total expected power burn with all wind/solar projects at 100% capacity slated to come online between 2019 and 2024.

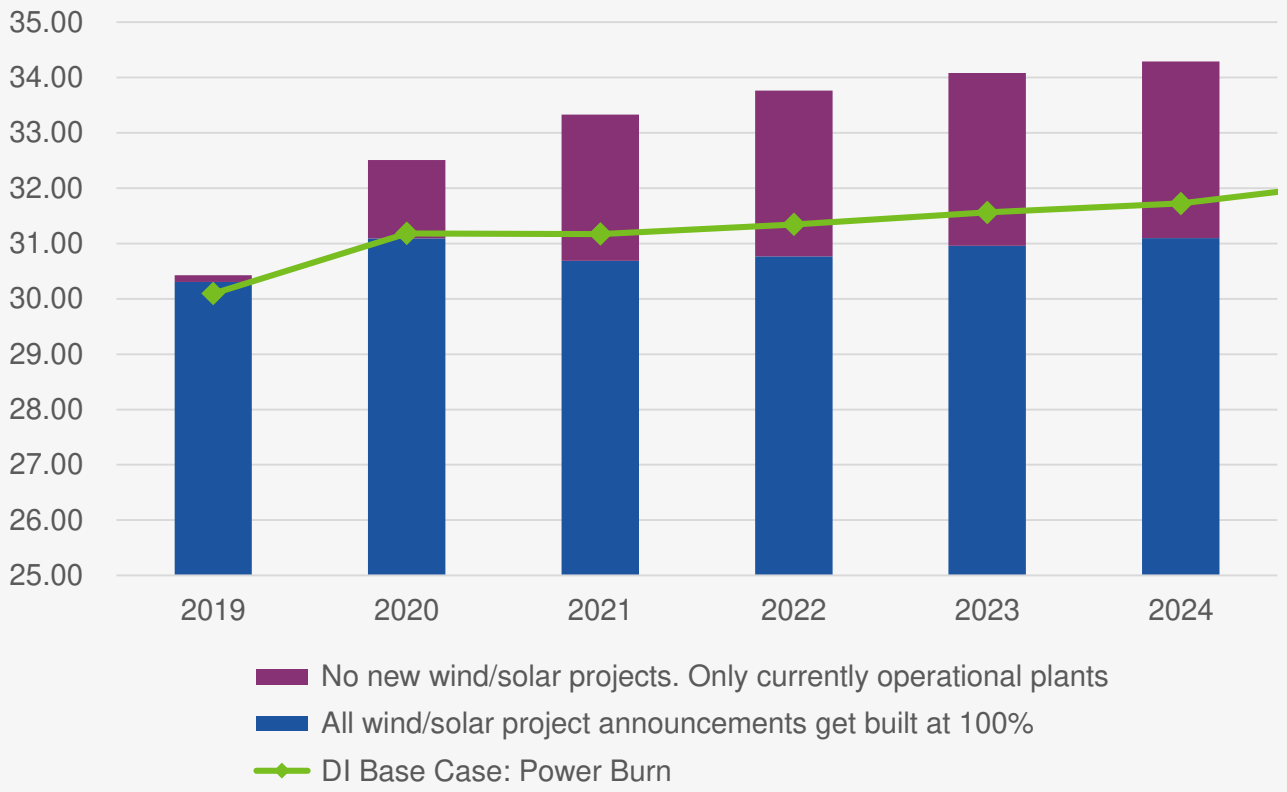
From 2019 to 2020, if all wind and solar projects come online as expected and run at 100% capacity, wind and solar power generation will displace 1.42 Bcf/d of gas demand for power burn.

A similar situation happens from 2020 to 2021. Should all wind and solar projects come online and run at 100% capacity, 1.23 Bcf/d of gas demand for power burn will be displaced by wind and solar generation.

The bulk of renewable projects scheduled to come online fall between 2019 and 2021. With a lack of renewables slated to come online from 2022 to 2024, we see a steady increase in gas demand for power burn.

CHART 4

Power Demand: 100% Capacity Wind/Solar Projects (Bcf/d)



Sources: DI Analysis, EIA

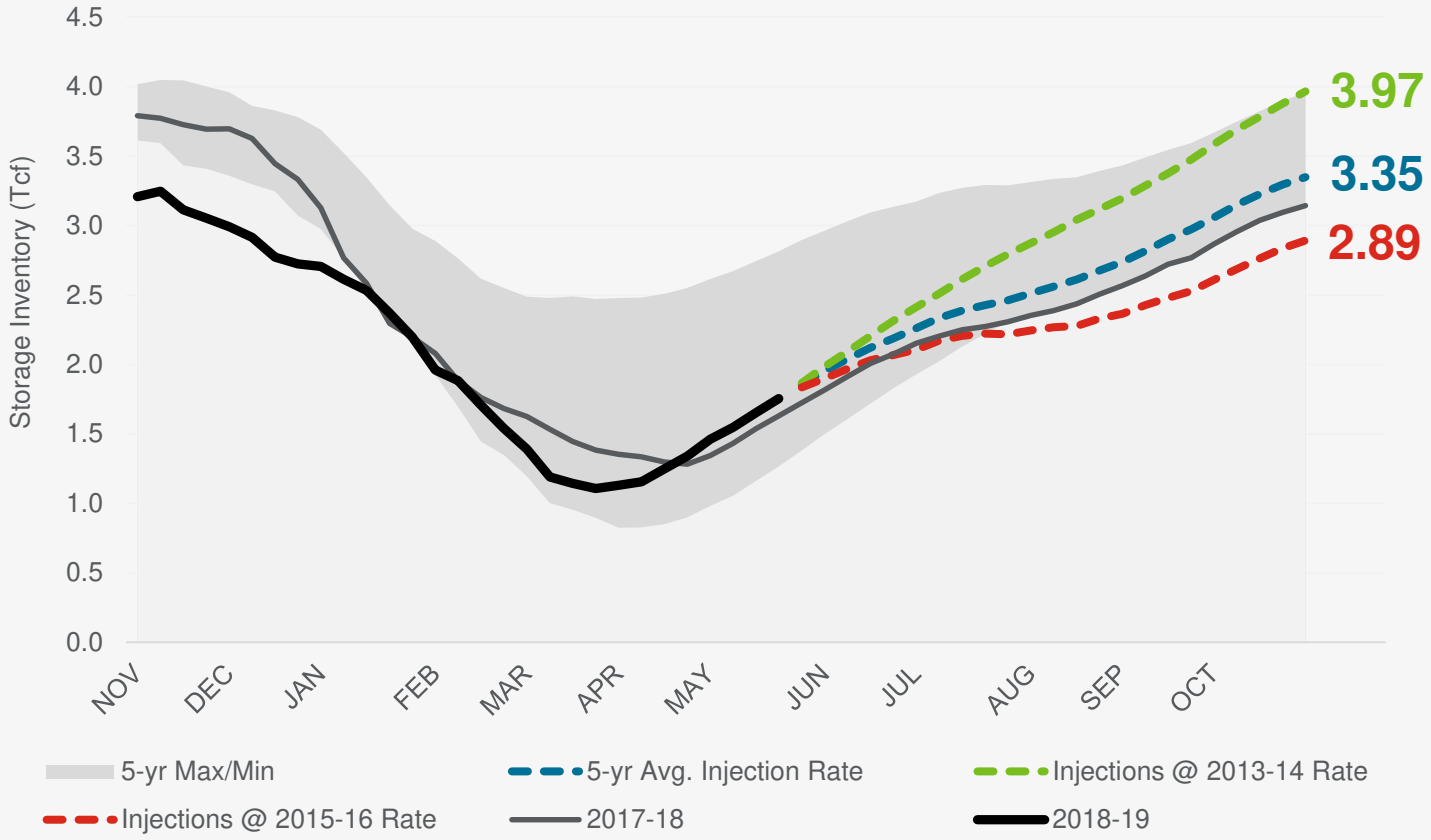
End-of-Summer Storage Inventory: Historical Injections

US storage inventories have recovered from below-average inventories at the beginning of the injection season, largely caused by record low inventories at the beginning of winter 2018-19.

Based on 5-year average injections, inventories would end the injection season at 3.35 Tcf. However, with supply at record levels, DI expects injections to be over the 5-year average and to end the injection season above that level.

CHART 5

Natural Gas Storage Inventories: Historical Injections



Sources: EIA, DI Analysis

Regional Outlooks

Regional Power Outlooks

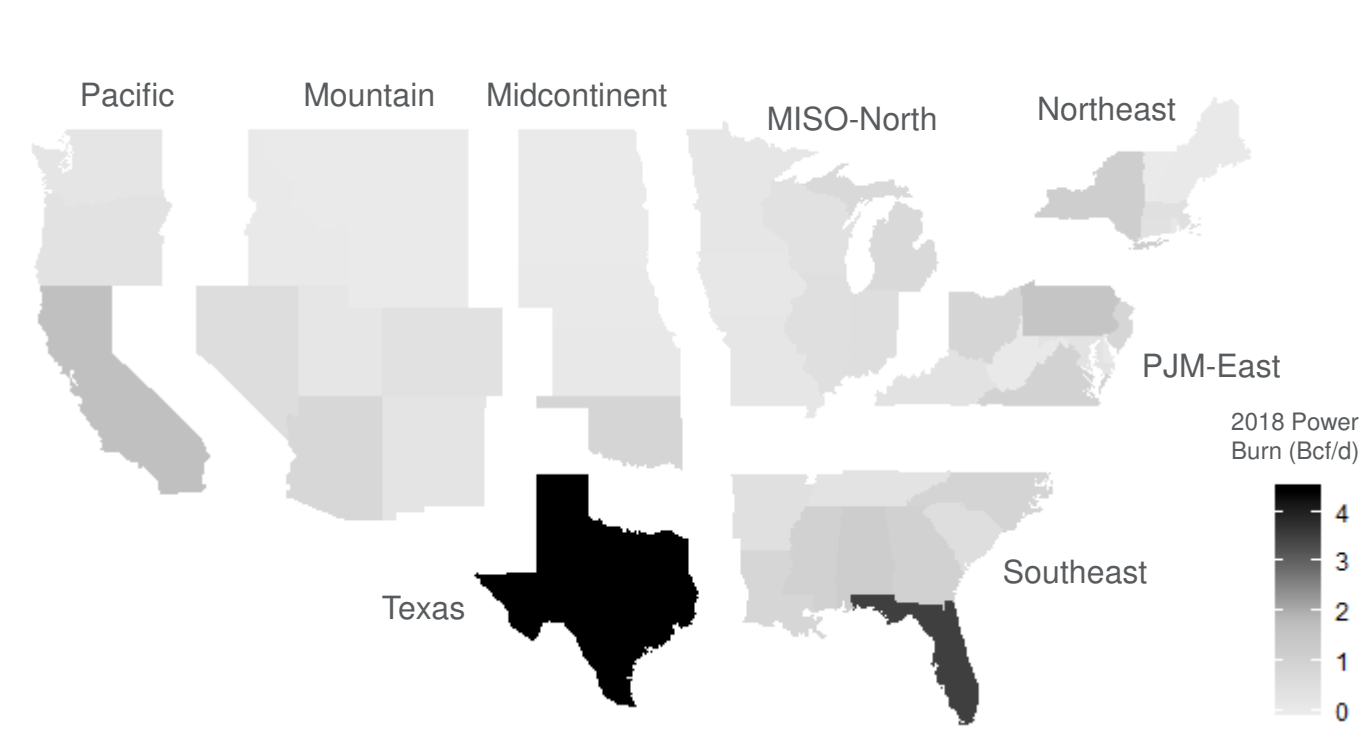
In this section we present long-term regional outlooks. Our regions were created with regard to independent system operator (ISO) boundaries with some caveats.

In the following slides, we take a deeper look into power generation by source and retail sales in the region.

Retail sales of power differ by region, with some sales being above or below total generation. This indicates a region being a net importer or a net exporter. If retail sales are above total generation, the region needs to import power to meet demand. If retail sales are below total generation, the region has excess power generation and needs to export the excess.

CHART 7

Power Sector Regions



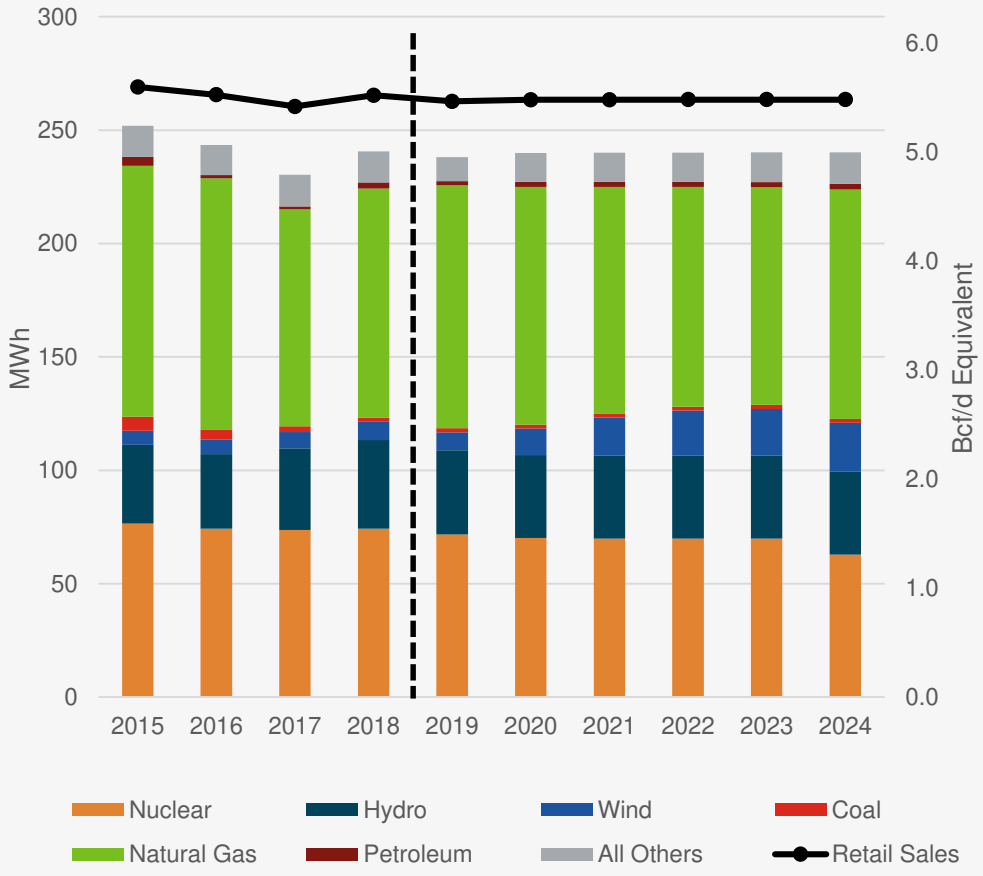
Northeast Region

The grid in the Northeast region is dominated by gas and nuclear. Although some switching capacity remains, coal is mostly gone from the region.

Nuclear plants continue to face pressure from low power prices caused by cheap gas and a lack of demand growth. The Pilgrim (MA) nuclear plant is set to retire by June 1, 2019. Following Pilgrim is Indian Point (NY), which may retire unit 2 by May 2020 and unit 3 by May 2021. These three units represent 30% of the nuclear capacity in the region. As these units retire and nuclear generation decreases, wind is expected to pick up the generation capacity.

CHART 8

Power Generation by Source



Year	Power Burn (Bcf/d)
2015	2.3
2016	2.3
2017	2.1
2018	2.2
2019	2.3
2020	2.2
2021	2.1
2022	2.0
2023	2.0
2024	2.1

Sources: EIA, DI Analysis

PJM-East Region

The PJM-East region remains very coal-heavy despite decreasing coal generation and retirements over the past several years. Local coal production makes the fuel more competitive compared to other regions.

Over the next 5 years, 43% (14.5 GW) of new gas-fired capacity in the US is expected to be in the PJM-East region. If all announcements come online, this region will add 3.6 GW (or 4%) over the next year, compared to 8.8 GW over the past year. In the next 5 years, it would add 14.5 GW (or a 17% increase from today), compared to 25.3 GW over the past 5 years.

With nuclear generation holding steady over the past few years and very little generation from other sources, gas is set to take market share from coal as new plants come online.

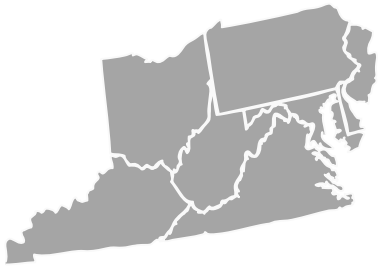
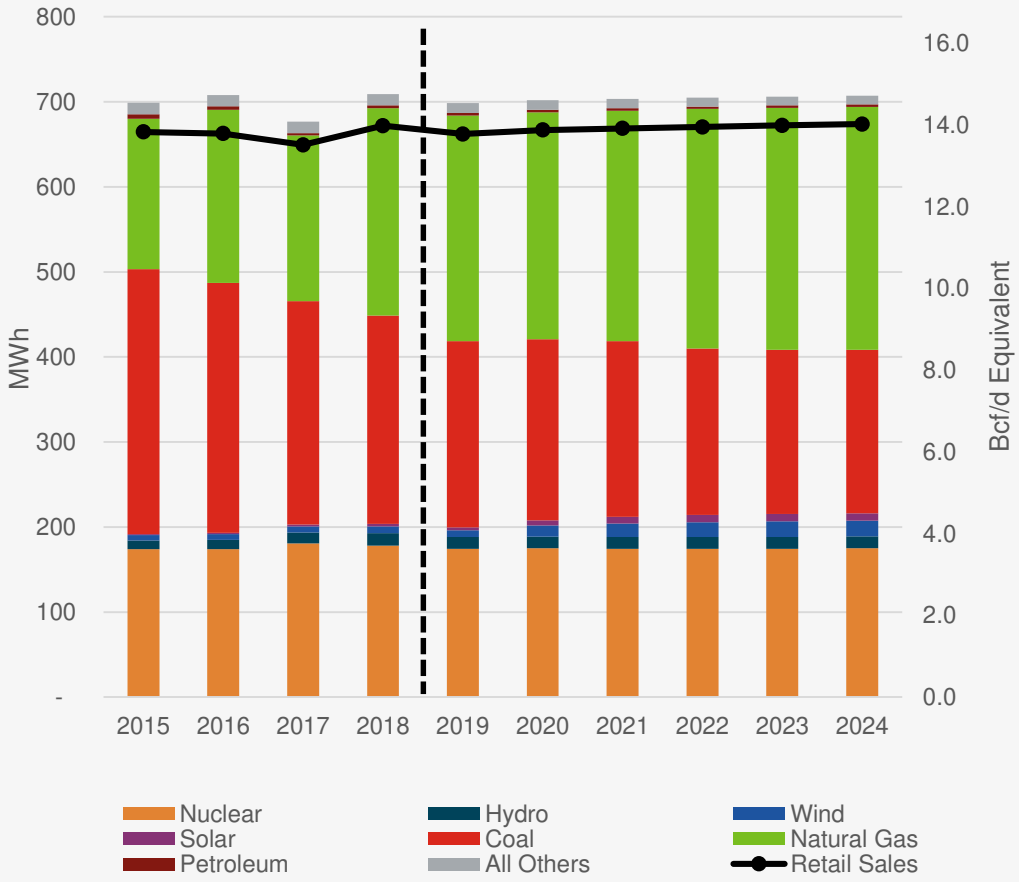


CHART 9

Historical Power Generation by Source



Year	Power Burn (Bcf/d)
2015	3.6
2016	4.1
2017	4.0
2018	4.8
2019	5.3
2020	5.4
2021	5.5
2022	5.7
2023	5.7
2024	5.7

Sources: EIA, DI Analysis

Contact

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