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Natural Gas Expansion Here to Stay

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Data Sources Used in This Publication
Energy Information Administration
PointLogic Energy
NOAA

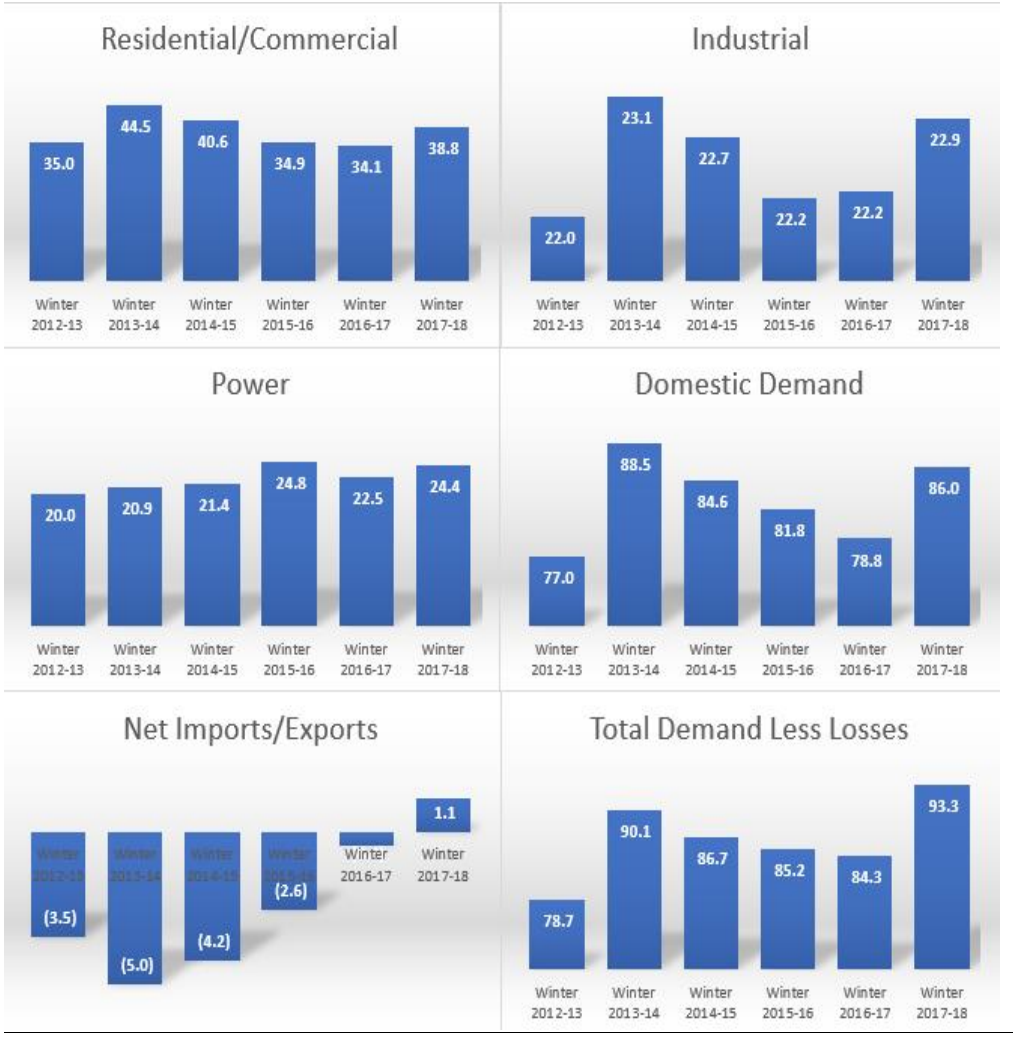
Rude Winter Awakening

Natural gas storage withdrawals set records at the end of December into January because of the combination of high residential, commercial, and power demand, as well as liquefied natural gas exports. Those records could represent a structural shift to the new norm. For most of the summer, the effects of record production outpacing demand kept the gas market bearish—staying range-bound around $3.00/mmBtu since last spring. A rude winter awakening came with a steep but short-lived seasonal drive up on multiple weeks of strong heating degree days that led to the record withdrawals and a jump to over $3.60/mmBtu. However, storage numbers are already moving quickly from five-year lows back toward their five-year averages as a result of continued high production and demand dropping off. With the brunt of winter already over, natural gas prices have collapsed back below $2.60/mmBtu. All this action within the last two months has been exciting after nearly a year of flat markets.

Bomb Cyclone

This winter's demand levels illustrate the impact of a La Niña year. Demand so far this winter is even outpacing the polar vortex of 2013-14. While residential/commercial demand is up over 4 Bcf/d year on year for the winter season—not surprising since last winter was mild—heating is far from the whole explanation. In fact, record demand during this winter of the so-called bomb cyclone is increasingly explained by longer-term growth in power burn and exports, not just heating (Exhibit 1).

Exhibit 1 Winter to Date Seasonal Natural Gas Demand (Bcf/d)



Source: PointLogic

Shrinking Winter

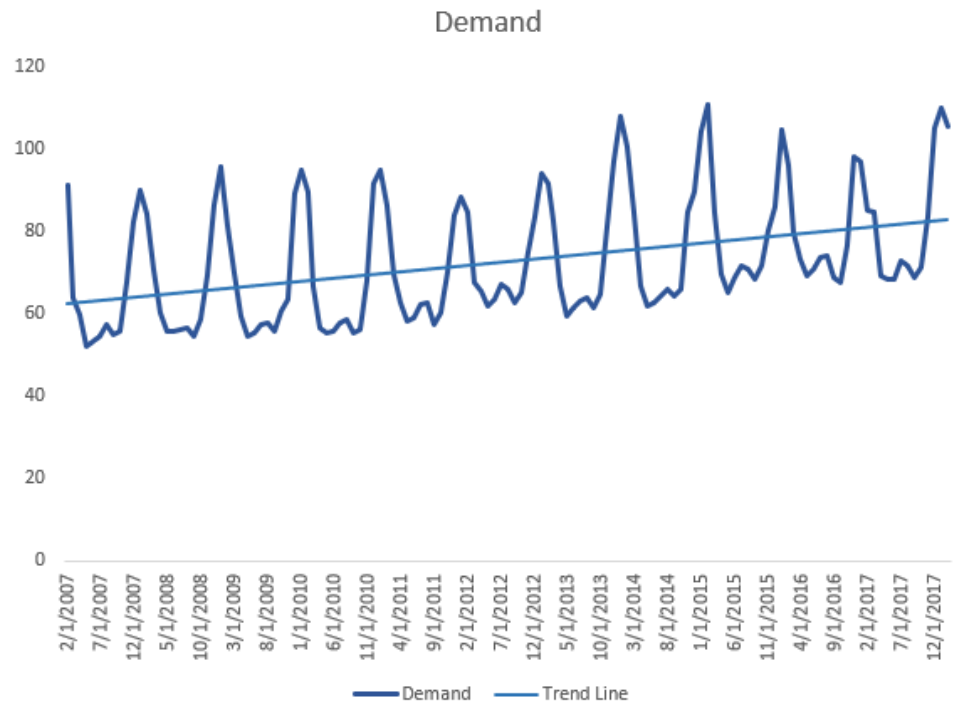
Mild weather in the last few years left some market participants wondering if winter would ever show up. This winter the cold came in late and brief but hard. The late-onset winter is an increasing trend, according to the U.S. National Oceanic and Atmospheric Administration, which estimates that the season has shrunk by almost a month in the last 10 years relative to 1971-80. Even with winters trending shorter and forecasters unable to predict whether arctic weather will ultimately show up or stay in hiding, this year's short, sharp shock of cold proved just as demanding as longer spells in the past.

Structural Change

Aside from cold weather, much of this winter's demand is structural rather than seasonal, as can be seen from the upward overall trend in Exhibit 2. The two steady causes behind this trend are increased power generation capacity and a change in the balance of imports and exports. Power demand is up 4 Bcf/d over the 2013-14 polar vortex winter, and net imports were 5.0 Bcf/d in 2013-14 versus net exports

of 1.1 Bcf/d this winter. In contrast, residential/commercial demand in 2013-14 was 44.5 Bcf/d compared with 38.8 Bcf/d this winter so far.

Exhibit 2 Daily Natural Gas Demand (Bcf/d)



Source: PointLogic

With natural gas nameplate generation capacity sitting around 518 GW as of November 2017, the current addition schedule has a high likelihood of adding over 25 GW in 2018-19 (Exhibit 3). Coal retirements will continue, with the fuel replacement of choice being natural gas. An increase in variable renewables will likely further support the need for additional natural gas plants providing a bridge for the grid as the technology and efficiency behind larger power storage capacity assets develops. As a result, natural gas generation demand will continue an upward trend over the next few years.

Exhibit 3 Current Planned Natural Gas Generation Capacity Additions

Nameplate Capacity (MW)	2018	2019	2020	2021	2022	Total
Construction complete, but not yet in commercial operation	1,526	-	-	-	-	**1,526**
Under construction	18,644	2,057	1,451	-	-	**22,152**
Regulatory approvals received. Not under construction	-	3,173	6,337	1,105	-	**10,614**
Regulatory approvals pending. Not under construction	2,500	6,035	5,140	2,087	854	**16,615**
Planned for installation, but regulatory approvals not initiated	1,769	2,942	2,978	4,970	232	**12,891**
Grand Total	**24,440**	**14,206**	**15,905**	**8,162**	**1,086**	**66,973**

Source: Energy Information Administration

Exhibit 4 Current Planned Natural Gas Generation Capacity Retirements

Nameplate Capacity (MW)	2018	2019	2020	2021	2022	Total
Retirements	1,173	2,371	3,445	863	239	**8,090**

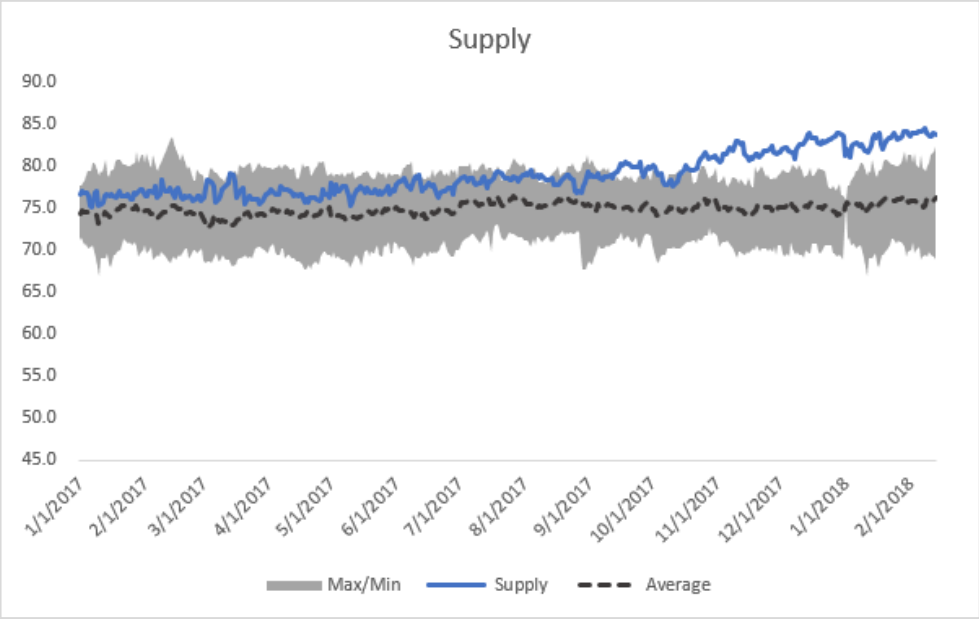
Source: Energy Information Administration

Turning to the import and export picture, Canadian and LNG imports have been relatively steady over the past five years, with Canadian imports staying between 5 and 6 Bcf/d and LNG imports staying around 0.3 Bcf/d on average. The big change is Mexican and LNG export increases over the last couple of years. With a second LNG export terminal at Cove Point coming on line in the next month or so and Sabine already exporting, the days of U.S. net exports are here and looking to stay with hungry Asian markets eating up all the LNG they can get. We should see the additions of Corpus Christi, Cameron, and Freeport LNG terminals coming on line later this year. Exports to Mexico are also on the rise with levels at 4.5 Bcf/d which is over 2 Bcf/d more than this time two years ago.

Long-Term Production

While the arctic spell at the start of this year moved prices up for a short time, our longer-term outlook for the remainder of 2018 through 2019 looks bearish, with natural gas production climbing to new heights (Exhibit 5). While exports and power demand are rising, and seasonal winter spikes can make their presence known, the supply side is currently winning out.

Exhibit 5 Current Supply in Bcf/d Relative to Five-Year Average



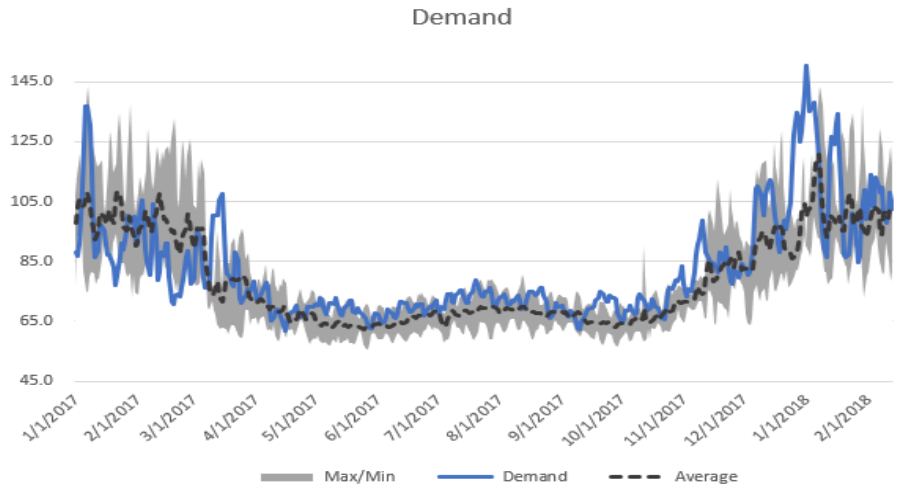
Source: PointLogic

Storage Snapshot

At the beginning of December, the U.S. Energy Information Administration reported that Lower 48 storage stood at 3,695 Bcf. At the beginning of February, we are now sitting around 2,078 Bcf. That

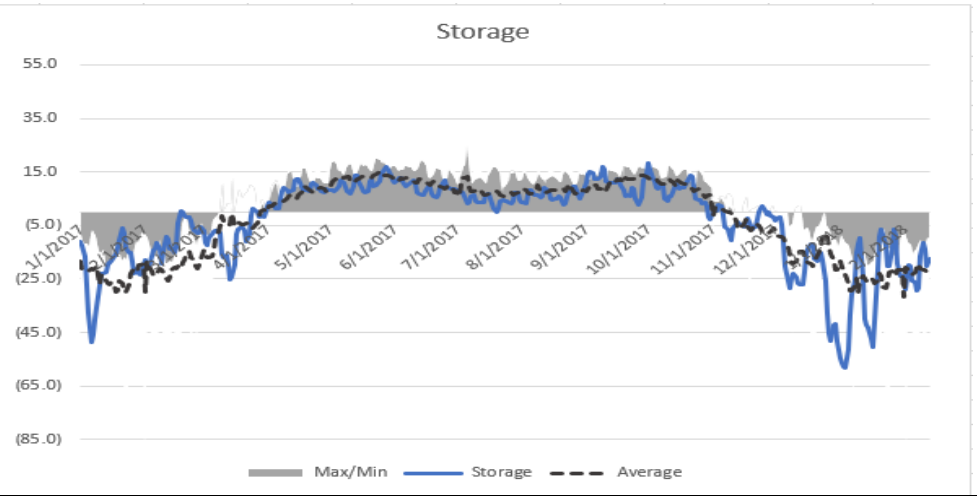
represents a 1,617 Bcf withdrawal over 2 months. This is in line with the 2013/2014 polar vortex withdraw over the same two months. Yet this mostly occurred within a few record setting weeks (the week ending January 5th set the record with a 359 Bcf withdrawal). The stronger demand volatility and size of storage moves can be seen in Exhibit 6 with lower volatility coming during the weaker demand months, where the changes to storage remain more range bound relative to higher winter demand months. Storage plays the role of balancing the physical needs of the market, especially at times of high demand. This phenomenon will likely continue as production growth remains somewhat steady week over week (Exhibit 7). As the market expands with steady production growth, and additional demand from international buyers, the correlation between changes in weekly storage will grow during the higher demand seasons.

Exhibit 6 Current Demand in Bcf/d Relative to Five-Year Average



Source: PointLogic

Exhibit 7 Current Storage in Bcf/d Relative to Five-Year Average

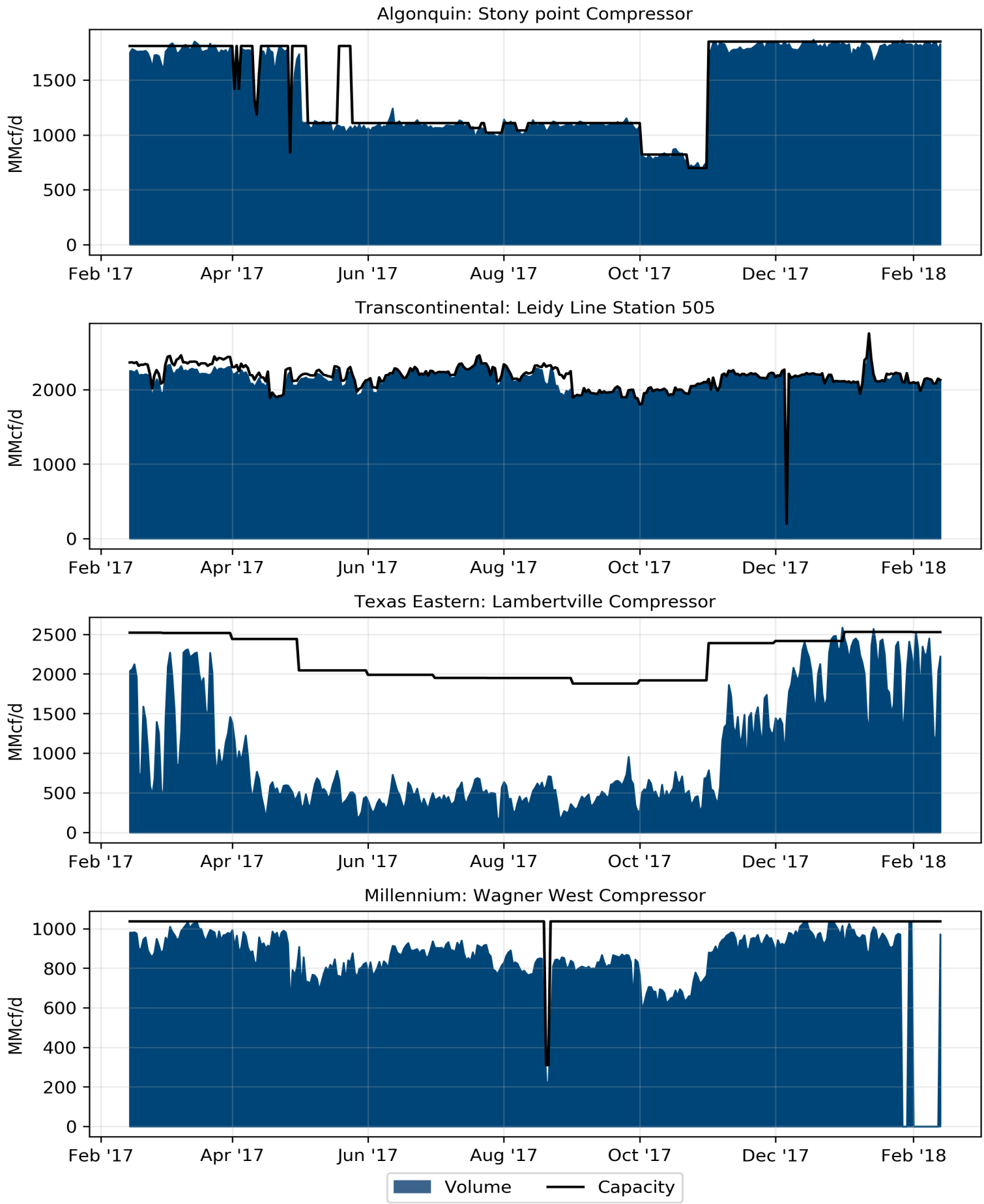


Source: PointLogic

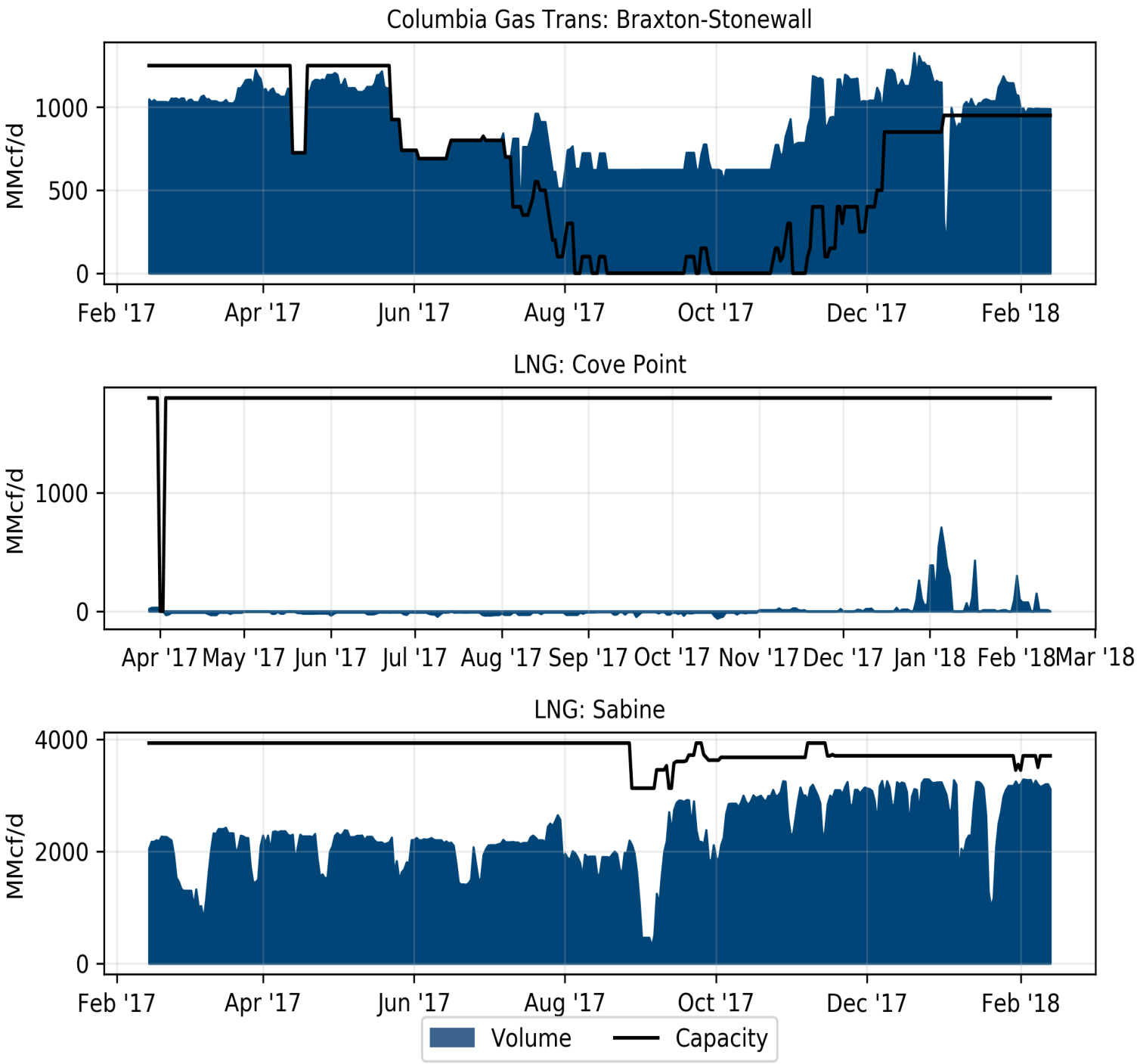
Conclusion

If the remainder of winter stays temperate, which may be the case given the trend towards shorter winters, we could see a very early start to the injection season. This could provide the market with healthy supplies of gas in storage by the end of summer. With the overall production trend, there is a case for continued natural gas bearishness which may provide a ceiling on Henry Hub prices over the next couple of years. Low domestic prices should keep natural gas generators and exporters happy as stronger demand materializes. However, that very demand expansion in the market presents greater potential for short-term seasonal volatility. With natural gas prices sitting around year and a half lows so quickly after its January highs the market may have overcorrected leading to a small move up to account for some volatility risk premium.

Natural Gas Important Points



Source: Pointlogic Energy



Source: Pointlogic Energy

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