

#### 2014-15 Natural Gas Markets

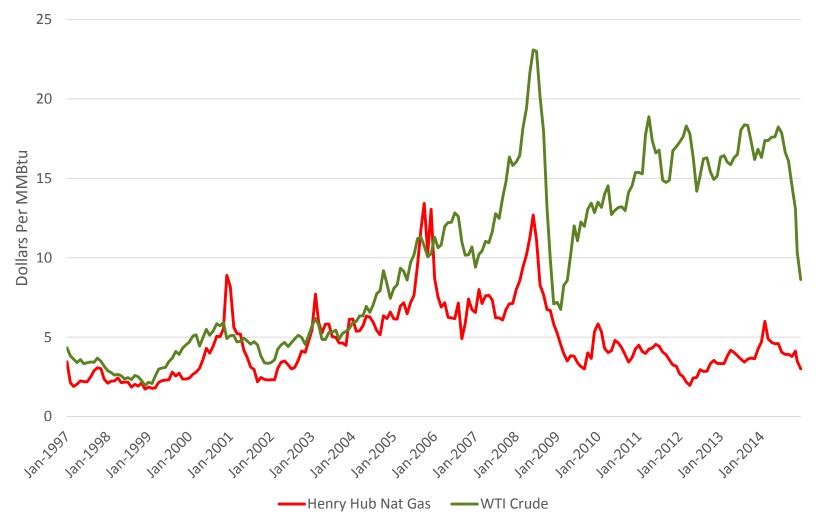
National Association of Regulatory Utility Commissioners



February 16, 2015

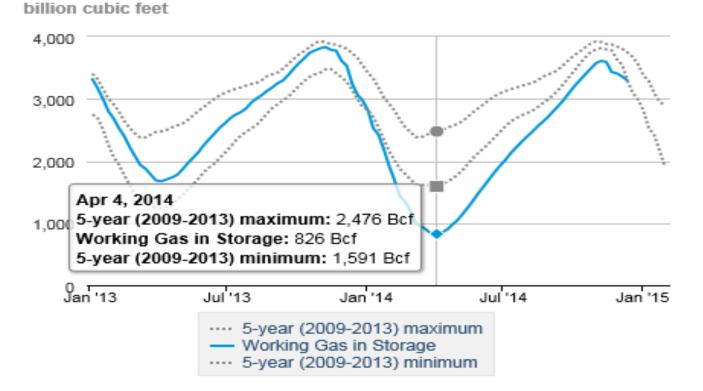
#### Monthly Prices Per MMBtu

**Energy Information Administration** 



#### **US Working Gas in Underground Storage**

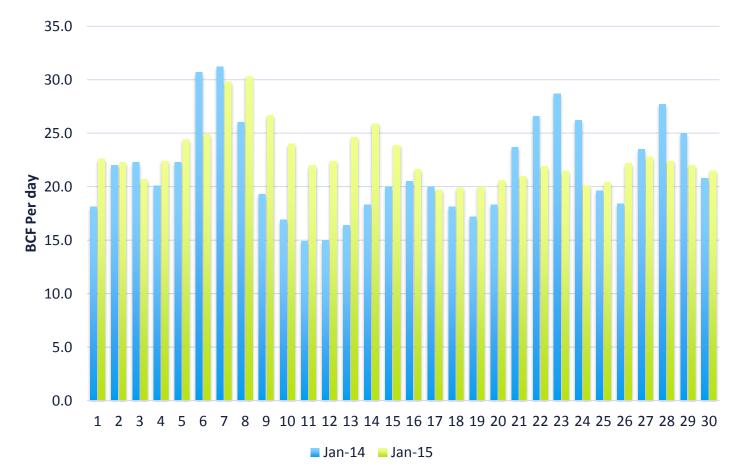
#### Working natural gas in underground storage



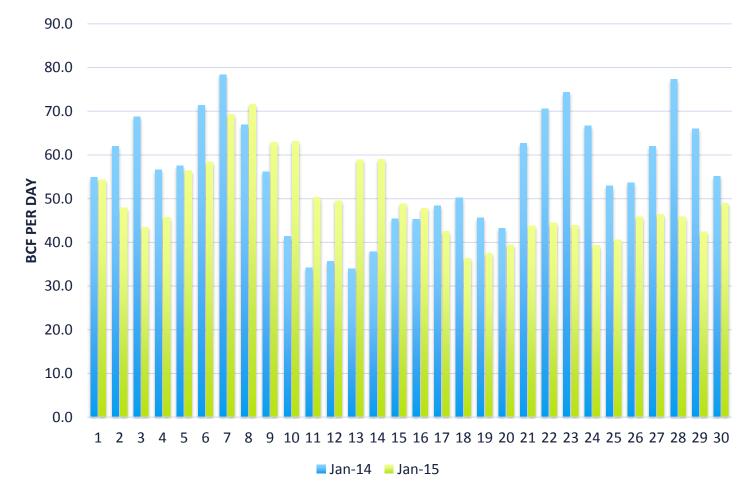


Source: Form EIA-912, "Weekly Underground Natural Gas Storage Report"

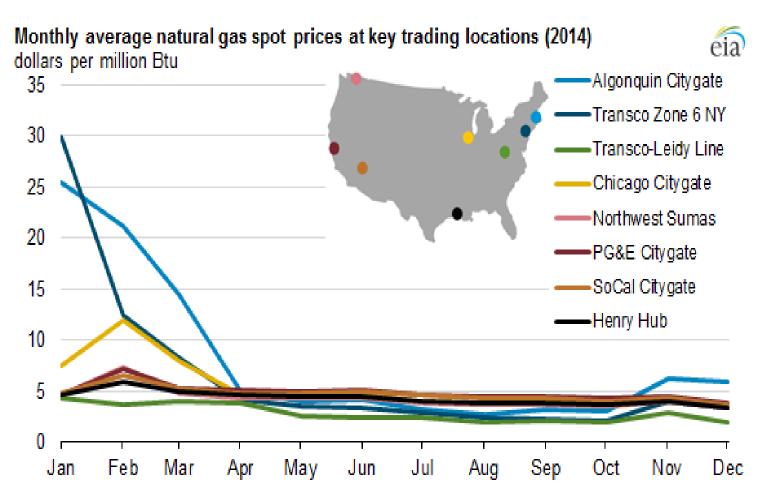
#### January 2014-2015 Daily Natural Gas Consumed in Power Generation



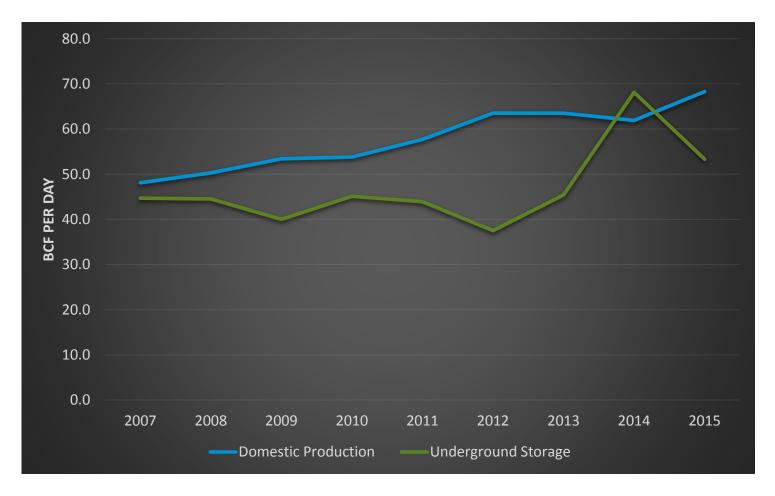
## January 2014-2015 Daily Natural Gas Residential/Commercial Consumption



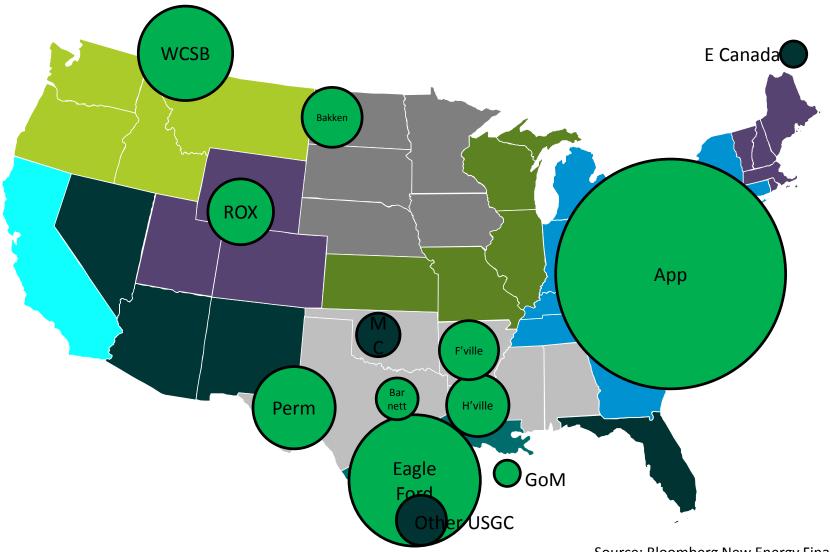
#### **US Natural Gas – Key Trading Locations**



## Supplying Peak Day Nat Gas Demand 2007-2015

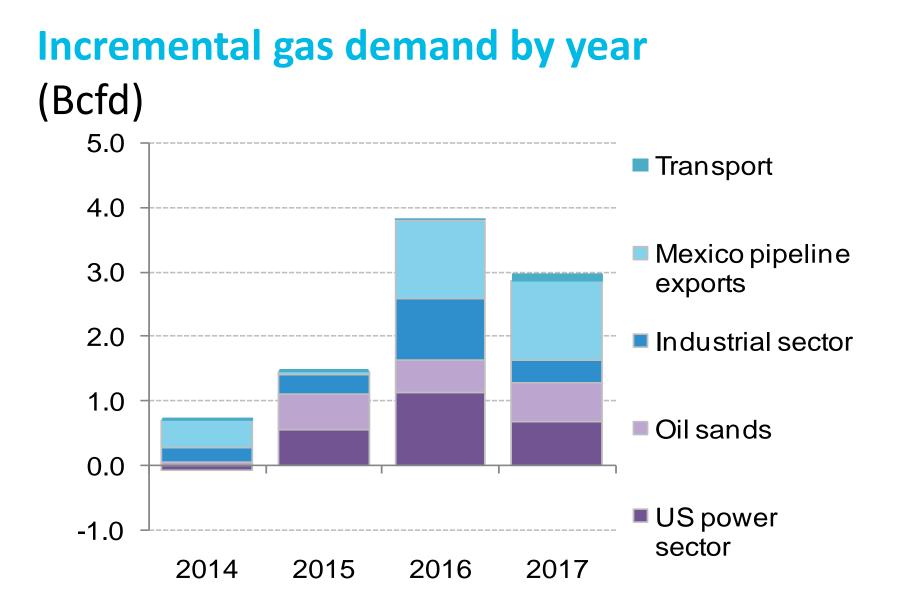


## 生産量の変化, 2013-2020



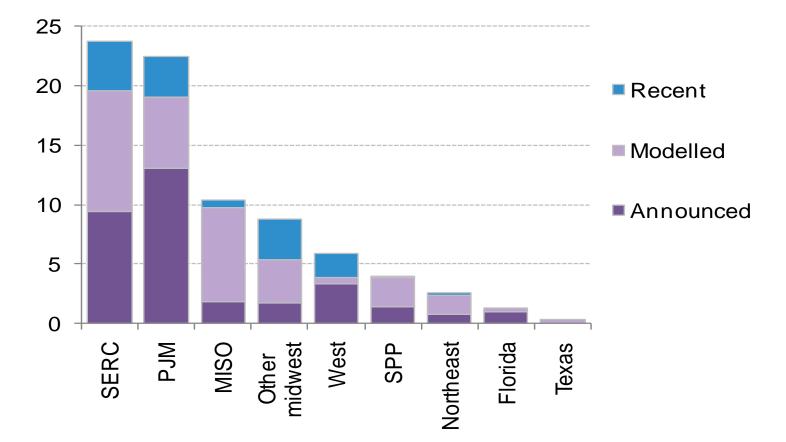
Source: Bloomberg New Energy Finance

2014年12月10日



#### Source: Bloomberg New Energy Finance

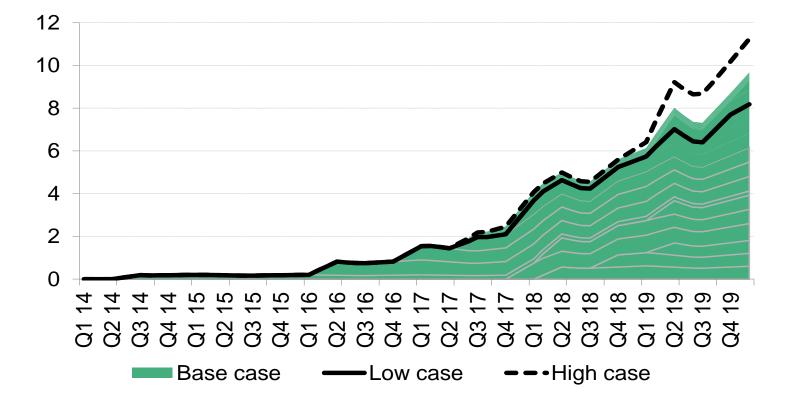
# Recent, announced, and modelled coal retirements by region (GW)



Note: Results are from our <u>Coal retirements model</u> and based on base-case assumptions for EPA emissions standards, control technologies, plant performance, and compliance costs. 'Recent' includes all coal capacity retired from 2011-12.

Source: Bloomberg New Energy Finance, EIA

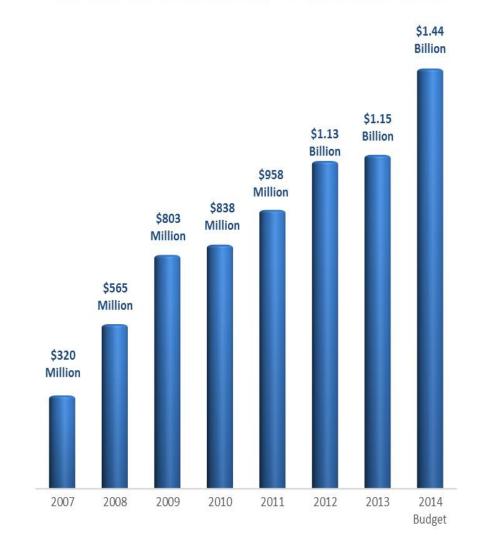
#### US gas demand from LNG exports (Bcfd)



Source: Bloomberg New Energy Finance

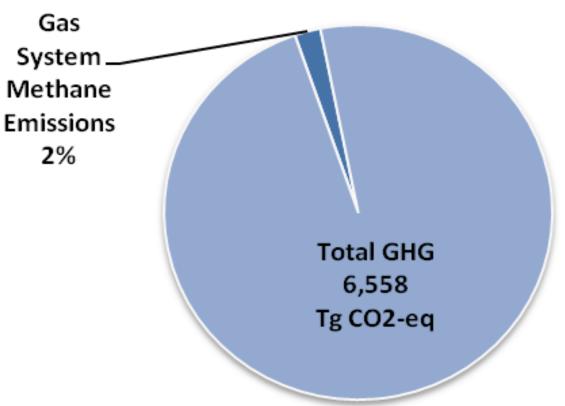
# Demonstrated Commitment to Efficiency from Natural Gas Utilities

#### **U.S. Natural Gas Efficiency Program Investments**



Natural gas systems represent a small share of annual GHGs

#### U.S. Greenhouse Gas Emissions Natural

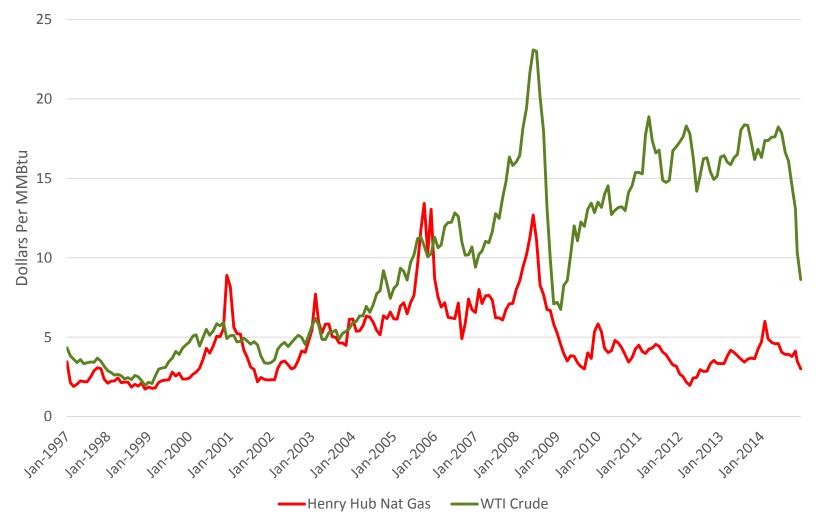




Source: EPA GHG Inventory 2013

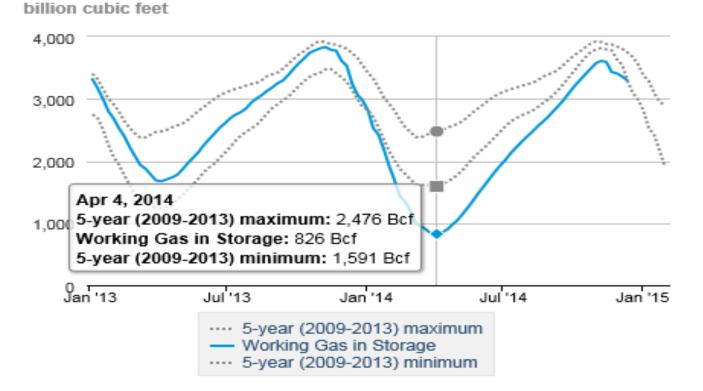
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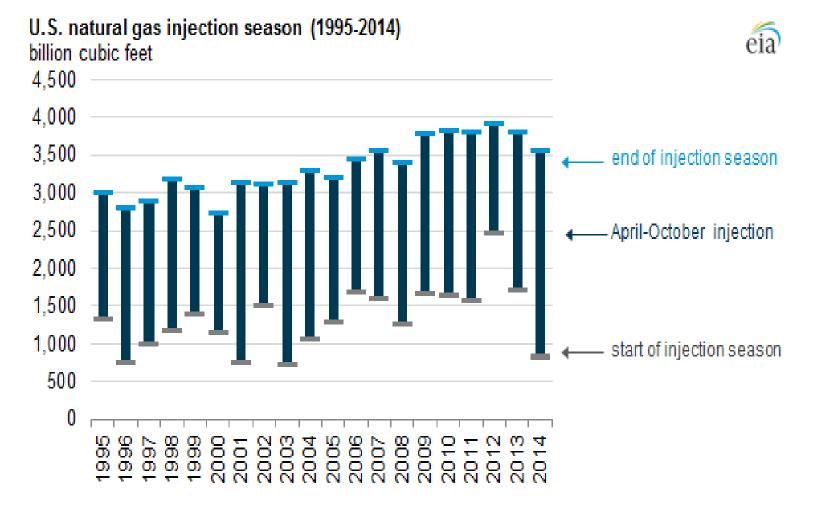
#### Working natural gas in underground storage





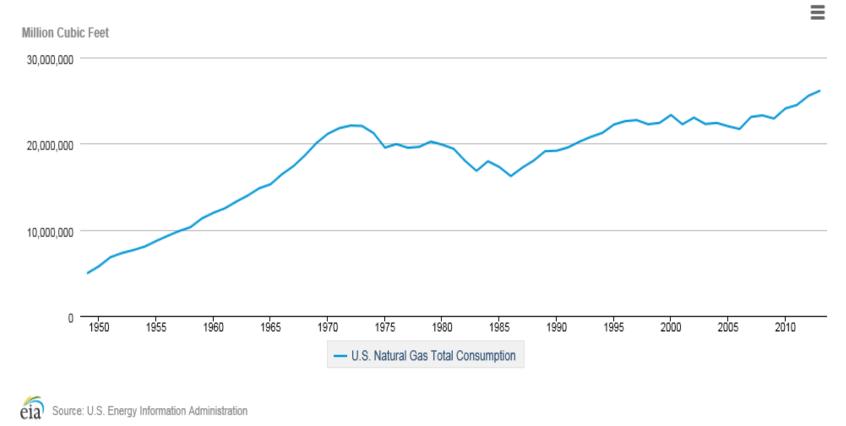
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#### **Net US Working Gas Injections**

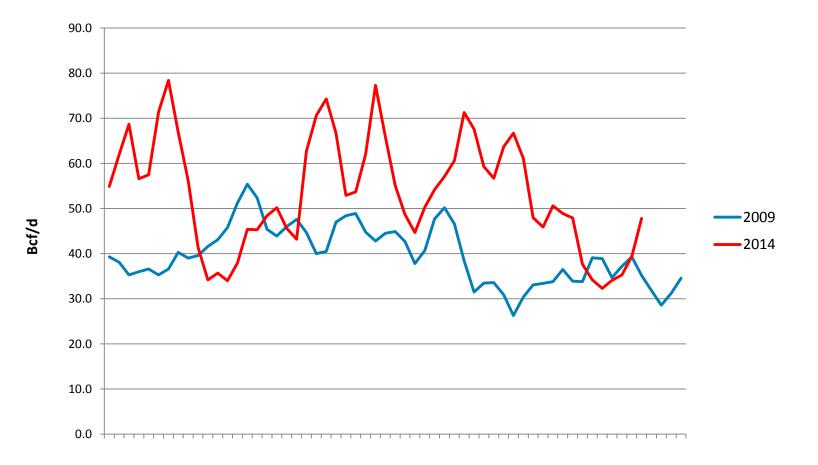


#### **US Natural Gas Total Consumption**

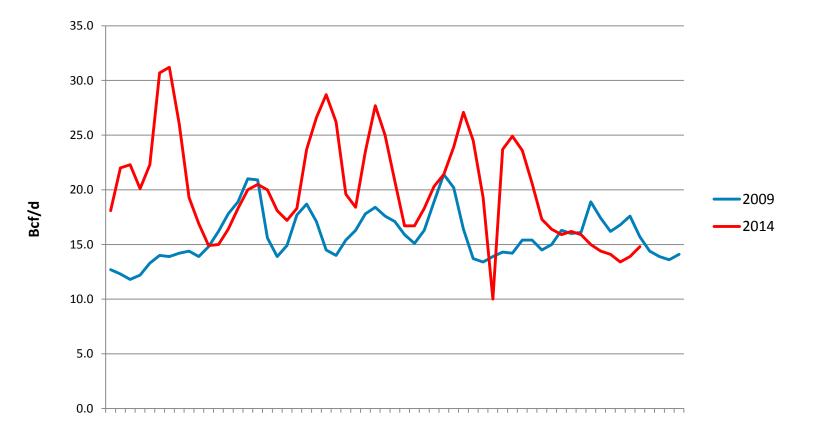
#### U.S. Natural Gas Total Consumption



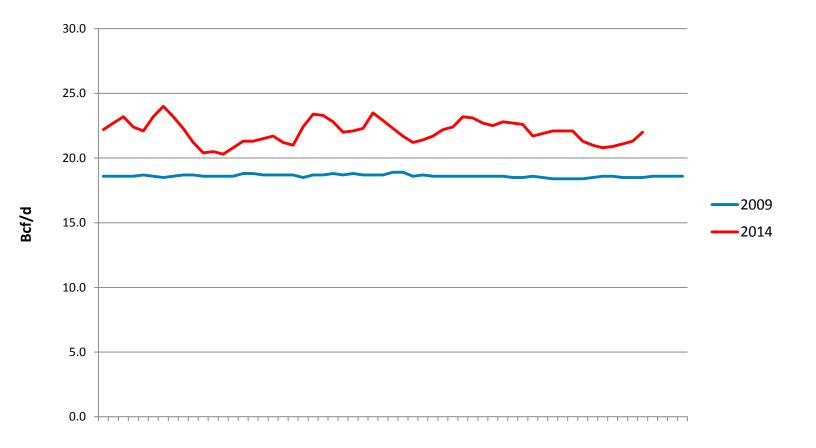
## January-February Daily Natural Gas Residential/Commercial Consumption



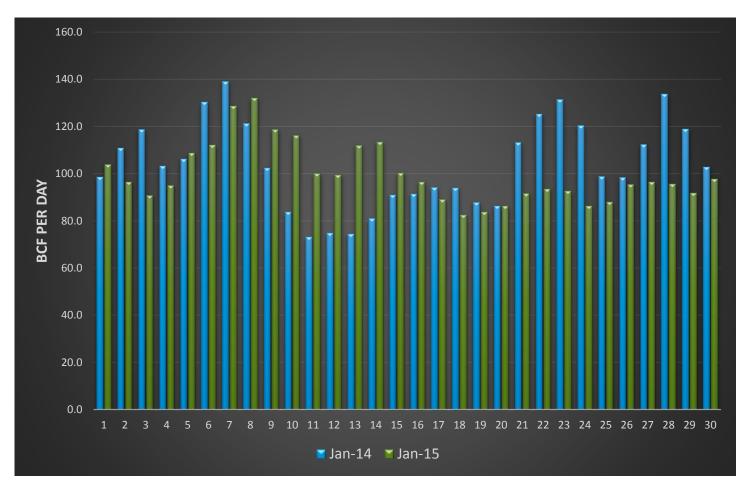
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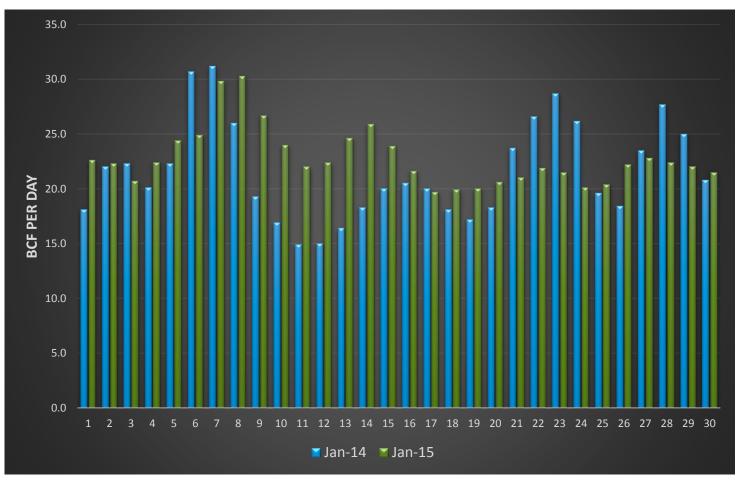
#### January-February Daily Natural Gas Industrial Consumption



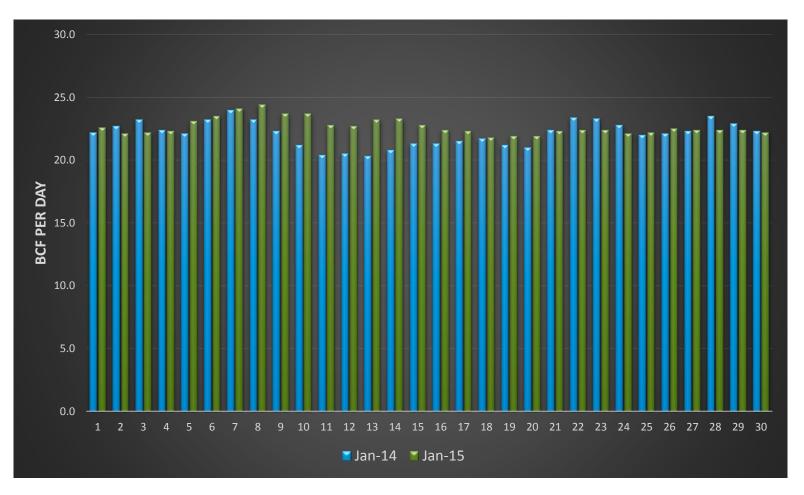
## January 2014-2015 Total Daily Natural Gas Consumption



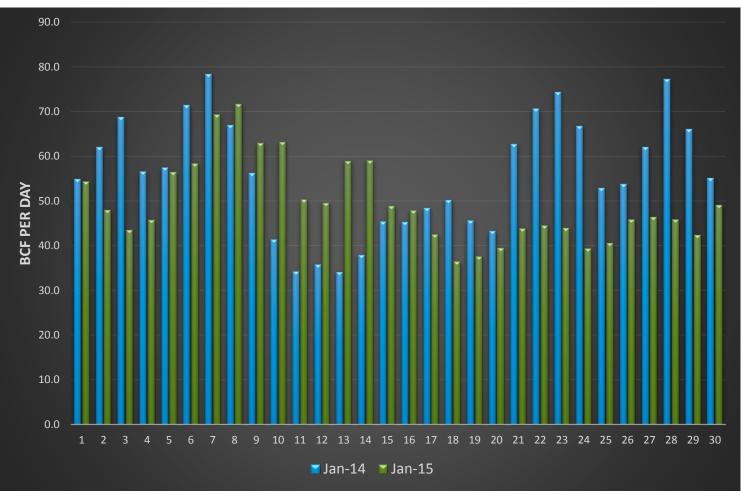
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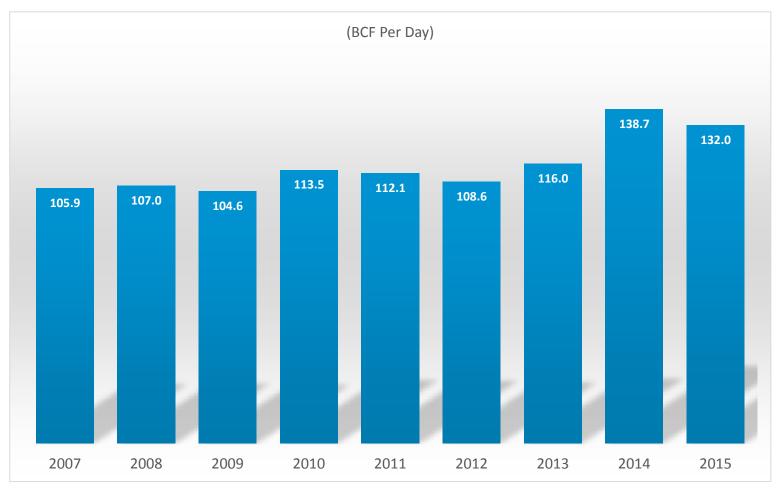


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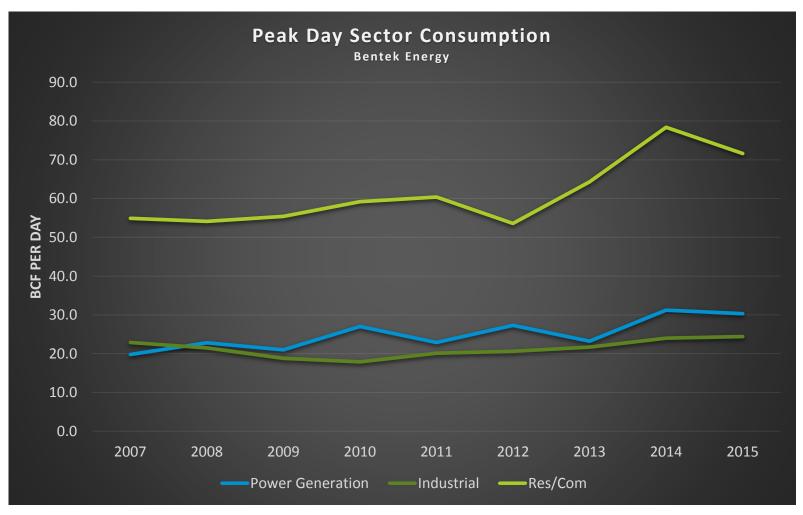
## **Total Peak Day Natural Gas Consumption**

2007-2015

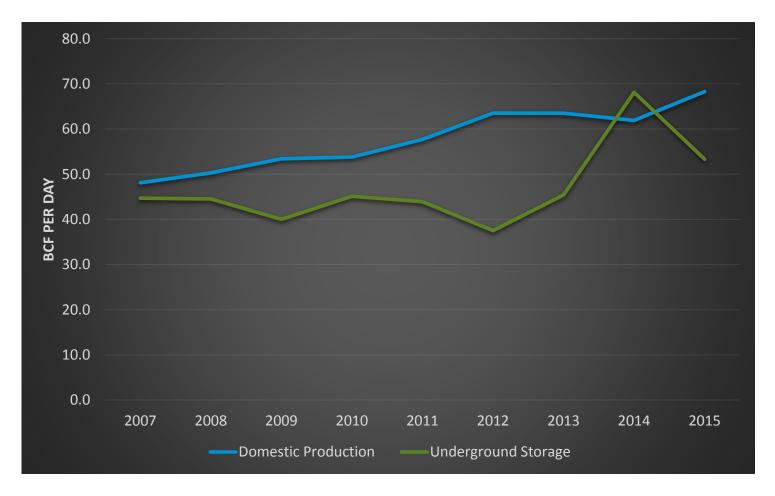


#### **Peak Day Sector Consumption**

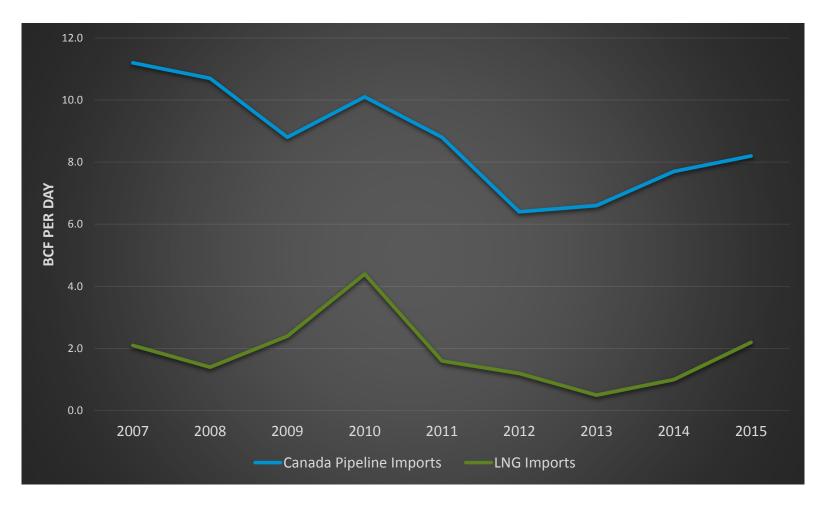
#### 2007-2015



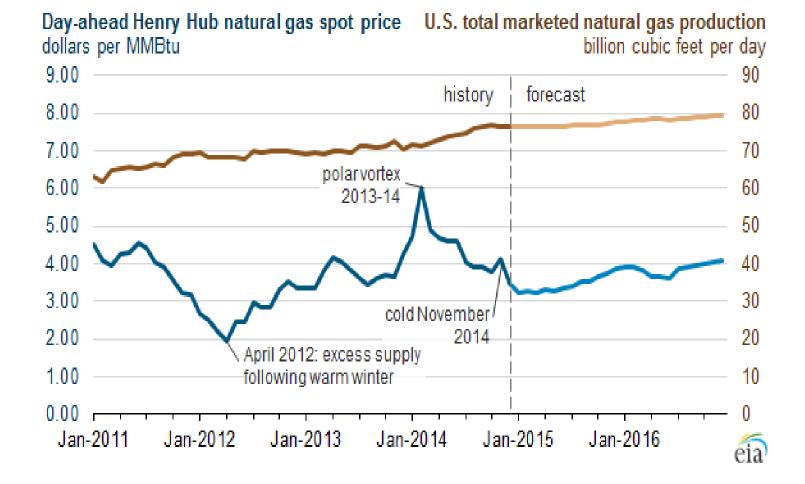
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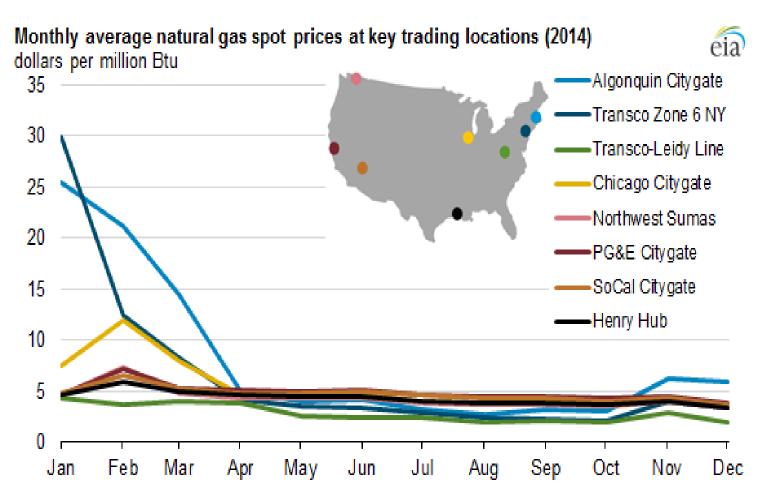
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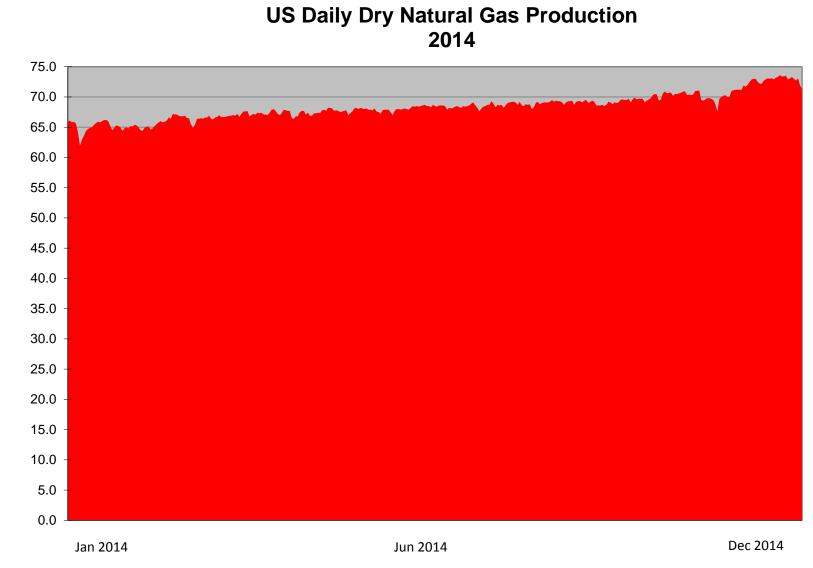


#### **US Natural Gas – Prices and Production**



#### **US Natural Gas – Key Trading Locations**

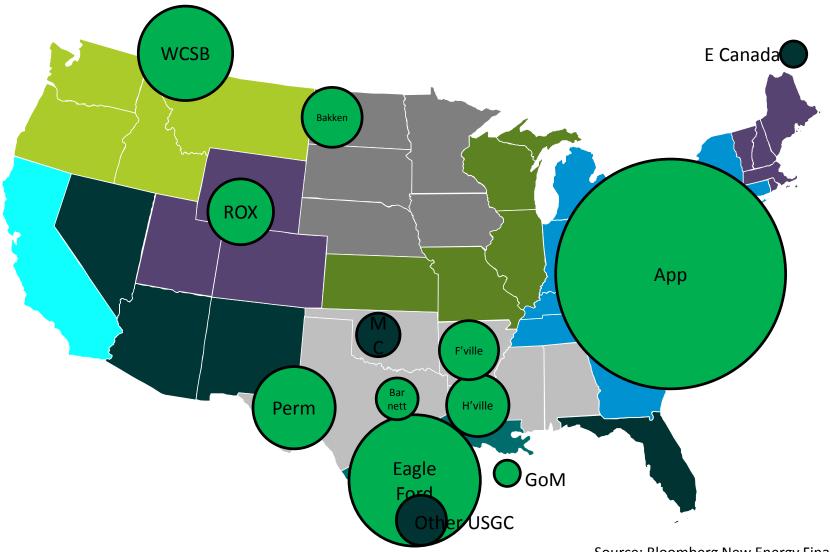




Bcf per day

31

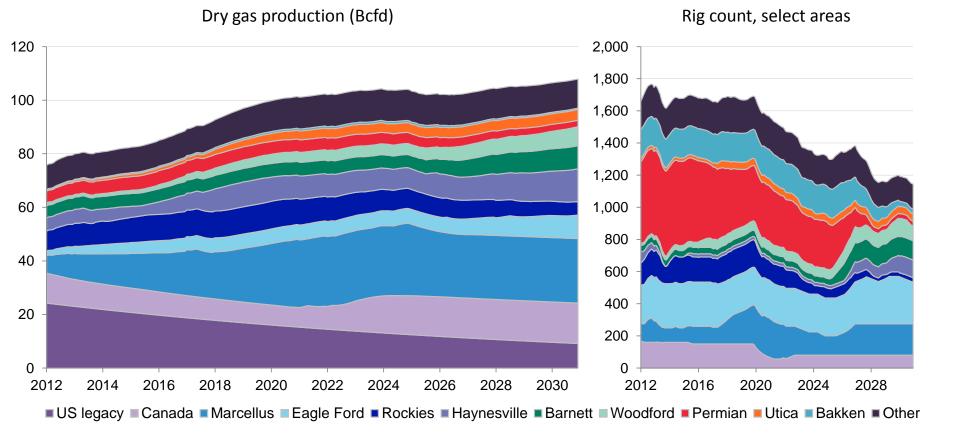
## 生産量の変化, 2013-2020



Source: Bloomberg New Energy Finance

2014年12月10日

#### **North American Production Outlook by Area**



Source: Bloomberg New Energy Finance. Note: Rig count should not be viewed as comprehensive as not every play modelled.

#### **US Natural Gas Proved Reserves Grow Again**

Total U.S. increase: +31.3 trillion cubic feet Pacific Federal Offshore WA MT 388 ND ME -26 +2.107VT OR‡ MN NH ID SD<sup>‡</sup> WI 40 MI WY +58 +2,940 PA IA +13.535 NE<sup>‡</sup> NV IN⁼ UT MD IL‡ -718 KS +1,859 -206 +215 KY MO +279 CA NC TN‡ OK AR +2,485 AZ‡ NM +186 +14 SC MS AL -634 GA -12 LA -1.746TX. +4,446 Gulf of Mexico Federal Offshore -898 billion cubic feet (state/area count) +501 to +13,535 (8) +1 to +500 (6) (23)no change 1 to -500 (10)-501 to -2.284 (5)

Changes in natural gas proved reserves by state/area, 2012 to 2013

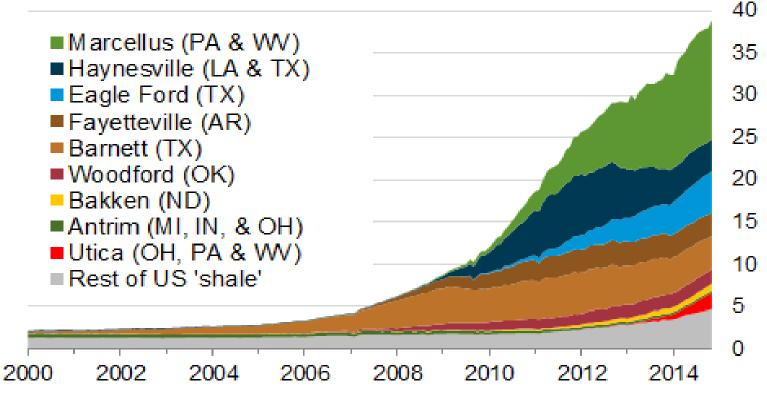
<sup>‡</sup> Data withheld to avoid disclosure of individual company data

Source: U.S. Energy Information Administration, Form EIA-23L, Annual Survey of Domestic Oil and Gas Reserves.

#### **US Shale Gas Production**

#### Monthly dry shale gas production

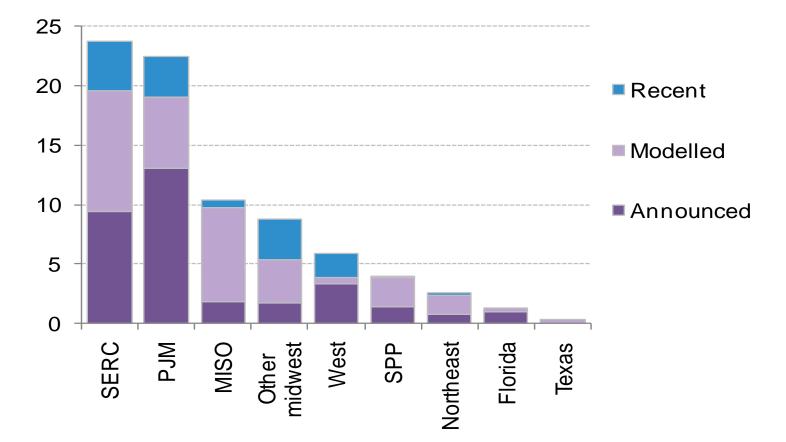
billion cubic feet per day





Sources: EIA derived from state administrative data collected by DrillingInfo Inc. Data are through November 2014 and represent EIA's official shale gas estimates, but are not survey data. State abbreviations indicate primary state(s).

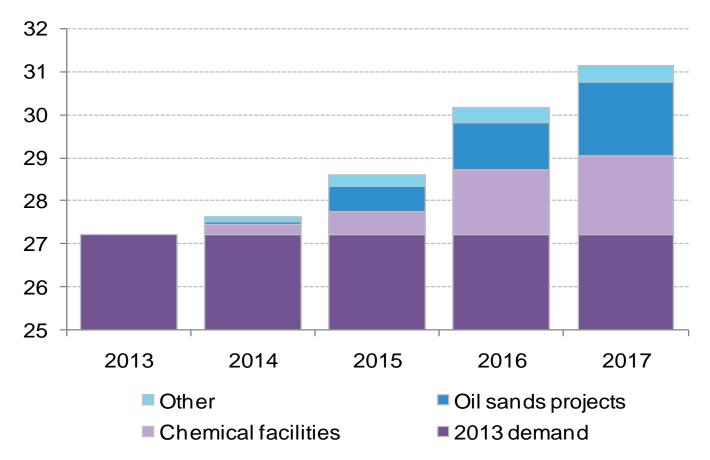
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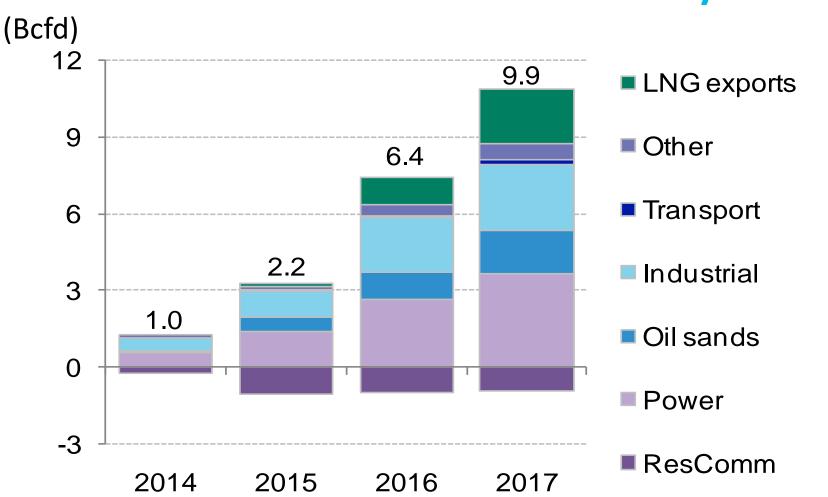
Source: Bloomberg New Energy Finance, EIA

# North American industrial demand growth (Bcfd)



Note: More information on industrial projects and gas demand calculations can be found in our North American industrial project database.

Source: Bloomberg New Energy Finance



#### North American Gas Demand Growth by Sector

Source: Bloomberg New Energy Finance

#### **DOE/FERC, Free Trade Agreement/Non-FTA LNG Export Approvals**

| Sabine Pass                             | 2.20 Bcf/d*    |
|---|----------------|
| Freeport LNG                            | 1.80 Bcf/d**   |
| Dominion Cove Point                     | 0.77 Bcf/d***  |
| Cameron LNG                             | 1.70 Bcf/d     |
| Cheniere Corpus Christi (FERC Approved) | 2.10 Bcf/d     |
| Lake Charles (DOE Approved Non-FTA)     | 2.00 Bcf/d     |
| Carib Energy (DOE Approved Non-FTA)     | 0.04 Bcf/d     |
| Jordan Cove (DOE Approved Non-FTA)      | 0.80 Bcf/d     |
| Oregon LNG (DOE Approved Non-FTA)       | 1.25 Bcf/d**** |

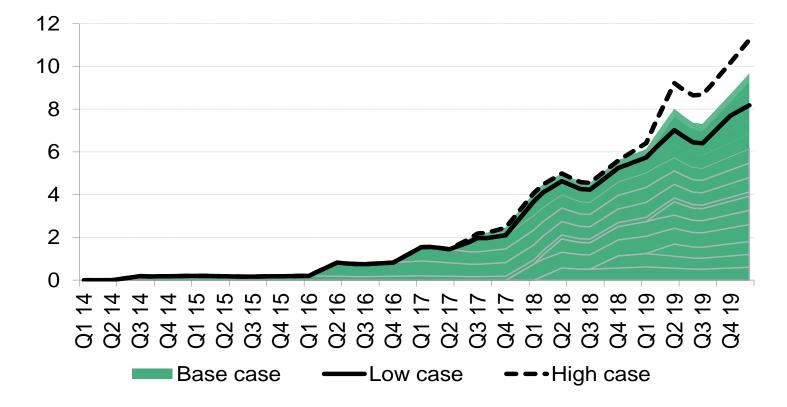
| Received Both DOE                     |
|---------------------------------------|
| And FERC Approvals/Under Construction |

#### **Non-FTA DOE Approved Total Non-FTA Applications**

\* FERC approval up to 2.75 Bcf/d \*\* FTA approval up to 2.80 Bcf/d \*\*\* FTA approval up to 1.0 Bcf/d \*\*\*\* FTA approval up to 1.2 Bcf/d 6.47 Bcf/d

9.76 Bcf/d 38.07 Bcf/d

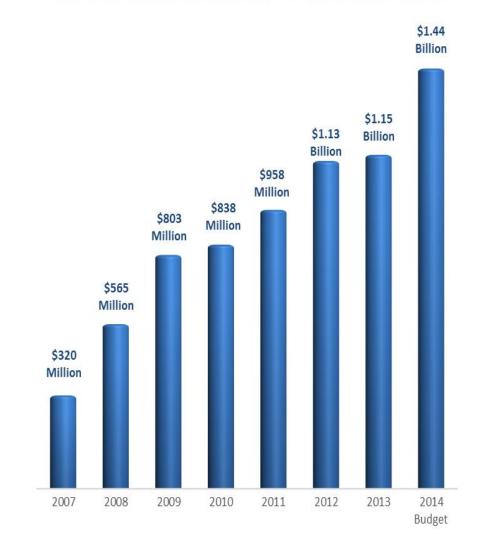
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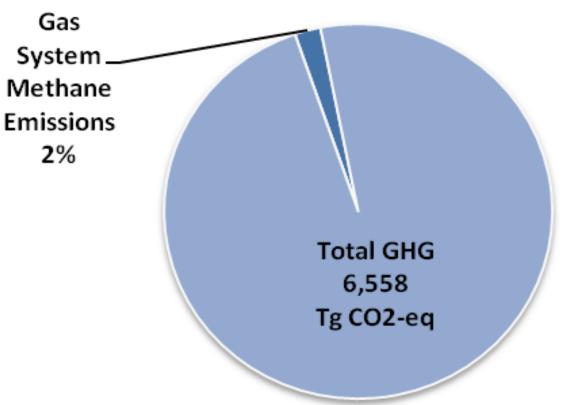
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Source: EPA GHG Inventory 2013

## **Natural Gas Energy Policy Future**

- Social License to Consume Fossil Fuels
- Meaning of "Winning" the Energy Competition, Customer Savings, Infrastructure
- Success of Energy Efficiency Investments
- What Regulatory Structure Allows for Building that Last Mile of Infrastructure
- Implementation of EPA Rules for New and Existing Power Generation
- World Oil Prices
- Carbon Pricing in US Economy

#### **Christopher McGill**

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