ICForecast:
Strategic Natural Gas Outlook
Q2 2015 - Sample

North America Natural Gas Market Outlook – Price Trends

- Natural gas prices are expected to recover from the current low levels in the next few months.
  - The current low natural gas price is linked to the pessimistic oil price outlook, even though the short-term fundamental linkage between the two markets is fairly thin.
  - Higher than historical demand from the power sector observed in the first several months of 2015 is expected to continue.
  - Drilling activity has declined across all major producing basins and slower production growth is expected in the coming months.
  - Storage inventory is below the five-year annual average level due to cold weather in February and March; storage injection will replenish inventories over the next several months.
- In the long run, gas prices will continue to strengthen as demand grows.
  - Large volumes of LNG exports are still expected to come on-line, despite lower oil prices leading to weaker economics for projects in earlier stages of development.
  - Incremental petrochemical gas use still expected, but ethylene production and LPG exports (and thus, gas use associated with those activities) are not likely to be as robust in a lower oil price environment.
  - U.S. exports to Mexico will continue to increase, as projected demand growth from power plants will continue to outpace Mexico's domestic production.
  - Power sector demand growth driven mostly by coal plant retirements in response to environmental regulations.

North America Natural Gas Market Outlook – New Dynamic for Gulf Coast versus Northeast Pricing

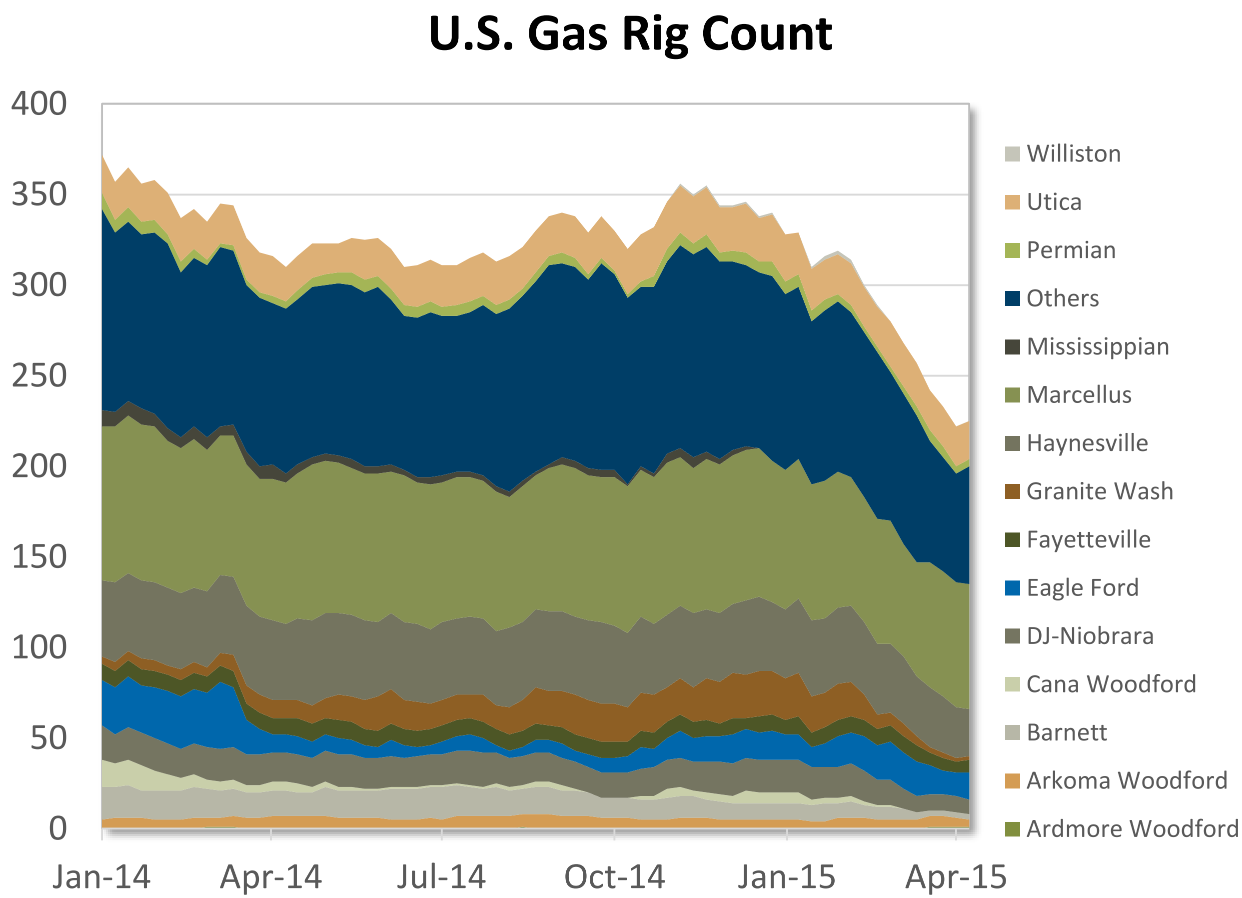
- Gas production from the Marcellus and Utica has grown rapidly and is now greater than Northeast demand, resulting in a displacement of south-to-north pipeline flows and the beginning of reverse flows to the south. In the long-term, the Marcellus/Utica area is expected to become the biggest supply source to North American gas markets.
- In contrast, Gulf Coast production has grown much more slowly, while the area's demands are expected to increase robustly.
  – LNG export terminals and new industrial facilities will create additional Gulf Coast demand growth.
- This supply and demand realignment is changing the pricing dynamics between Henry Hub and the Northeast.
  – Prices in the heart of the Marcellus production area (e.g., Dominion South Point, Tennessee Z4-300) are relatively low and there is potential for collapsing prices when infrastructure development lags production.
  – On the other hand, during periods of pipeline congestion, prices in some downstream markets (such as NYC and New England) can be relatively high and volatile.
  – There is no single market price indicator of the Marcellus Shale. A number of price points are relevant, but no single point within the area rivals Henry Hub as a proxy for a broader market conditions.
  – Northeast regional prices will move independent from Henry Hub, driven mostly by Marcellus area dynamics (production growth and localized pipeline congestion) rather than Gulf Coast market conditions.
- Marcellus/Utica will become increasingly important in contracting, trading, and supply portfolio considerations.
  – Market participants should consider the dynamics of Marcellus/Utica prices separately from Henry Hub prices, as prices in the two areas are likely to continue to be determined by separate forces.

North America Natural Gas Market Outlook – Production and Infrastructure

- Gas production from oil wells is likely to moderate in response to lower oil prices, as producers realign their portfolio to more productive plays.
  - The Marcellus and Utica shale plays will continue to be the primary sources of new production.
  - Canadian production growth will come entirely from shale and unconventional resource development.
- Gas-focused midstream infrastructure development still robust, as infrastructure is needed to accommodate growing gas production and support market growth.
  - Development focuses on linking Marcellus/Utica supplies to regions with market growth.
  - Natural gas flow patterns change significantly as Marcellus/Utica shale becomes the biggest supply source for the North American natural gas market.
- Relatively weak seasonal price spreads are expected, consistent with recent history, but price volatility is likely to increase as demand strengthens.
  - Price volatility is expected to remain high in certain markets, especially during winter.

2015 Short-term Market Trend – Rig Count

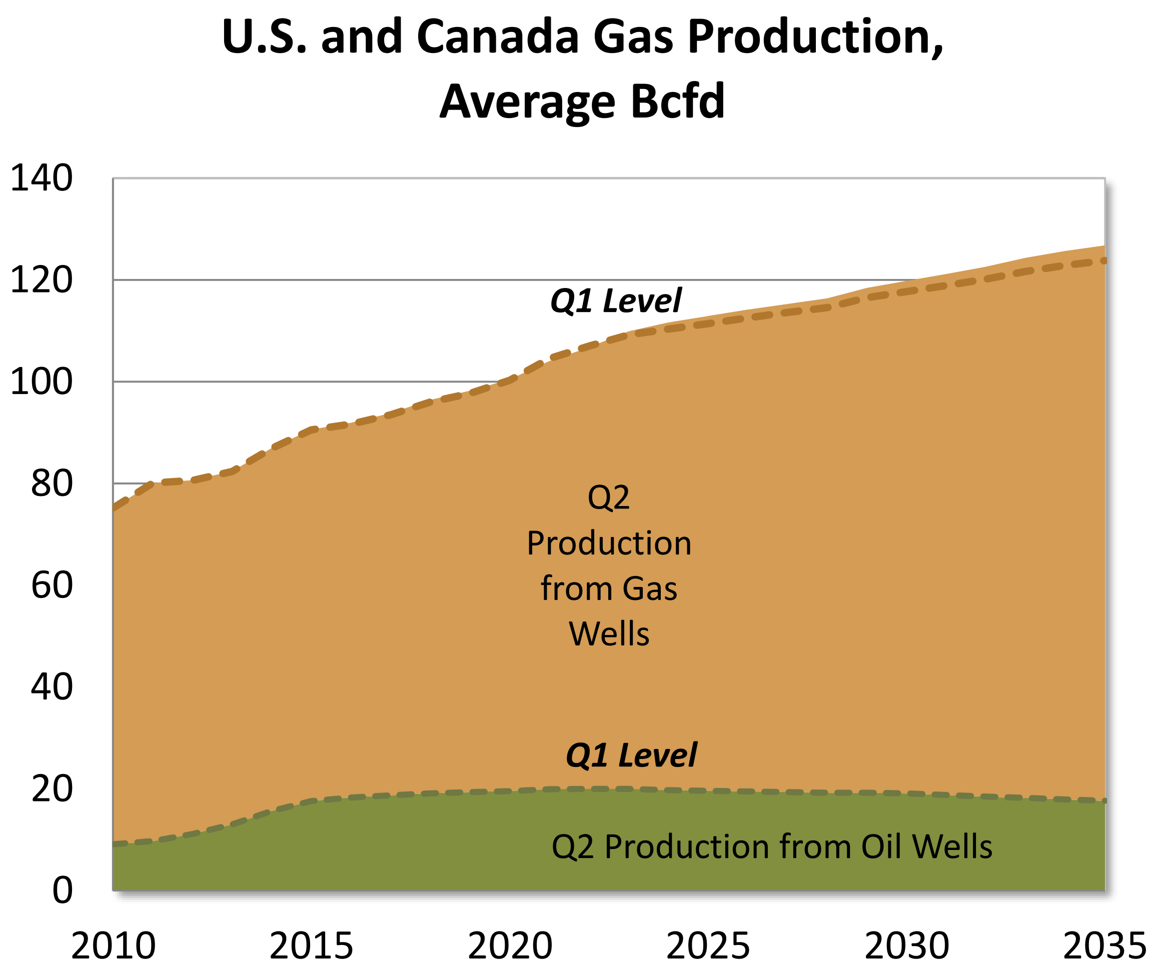
- US gas rig count in April 2015 was down 32% compared to average 2014 levels.
  - Total gas rigs in the U.S. has decreased from a 2014 peak of 372 to 225 as of the April 10th reporting week.
  - More dramatic drop in rig counts occurs at the Haynesville (down 40%) and Barnett (down 75%), while Marcellus and Utica decrease relatively modest.
- Reduced drilling activities will result in slower production growth over the next 6 to 12 months.



Source: Baker Hughes Rotary Rig Count

Projected Gas Production

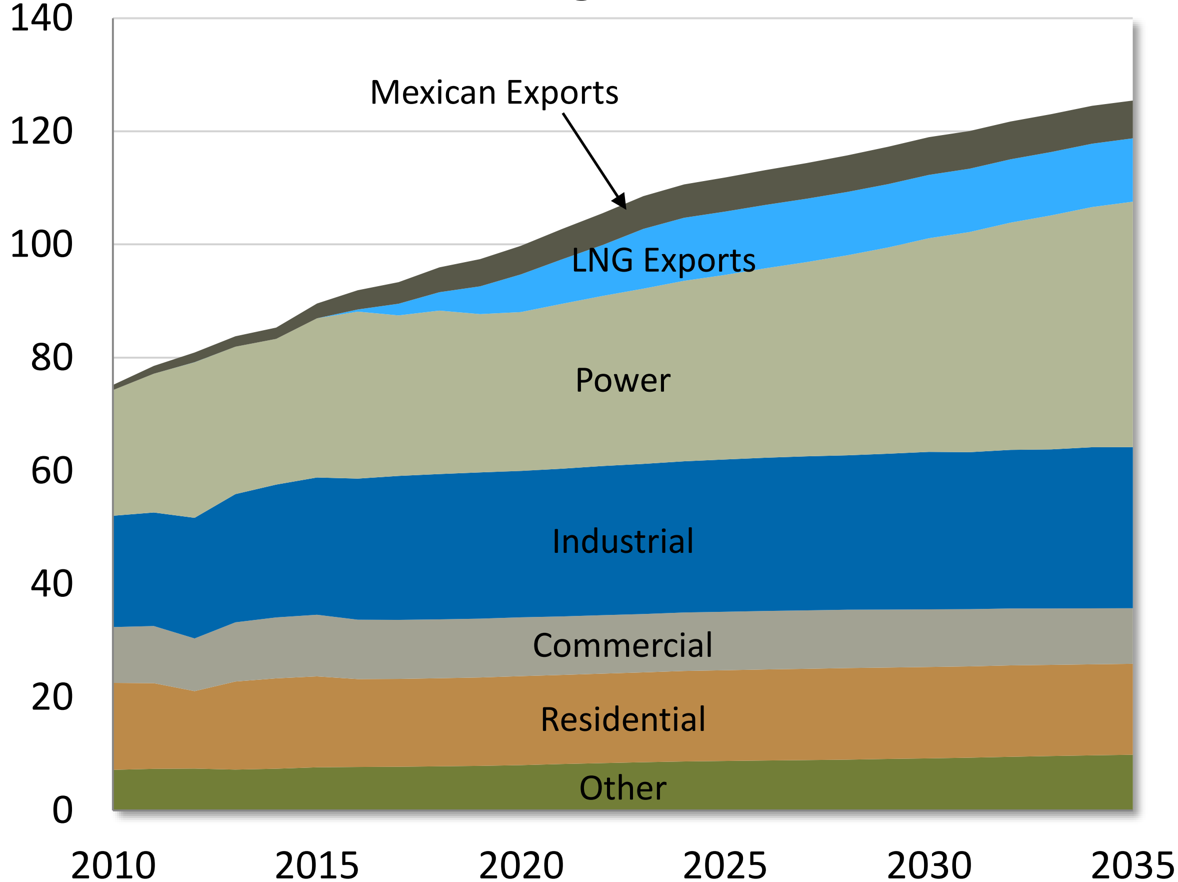
- The learning curve impacts lead to increased production growth.
- At the assumed oil price level, long-term growth of gas production from oil plays, commonly referred to as associated gas production, which currently accounts for approximately 18% of total gas production, is throttled.
- Future growth of gas production comes from increases in gas-directed (non-associated gas) drilling.
  - Gas-directed drilling activity in the Marcellus and Utica shales will account for over half of the incremental production.
  - In Canada, essentially all incremental production growth comes from development of shale and other unconventional resources.



Projected Gas Demand

- Natural gas demand growth is driven by growth in export markets (LNG and Mexican exports), in the next five years.
- The power sector is the largest single source of incremental domestic gas consumption in the long-term.
  – Between 2015 and 2020, growth is primarily driven by natural gas capacity replacing coal.
  – Accelerated growth is expected after 2020 when federal carbon regulation is initiated.
  – After 2030, nuclear retirements start a new round of growth.

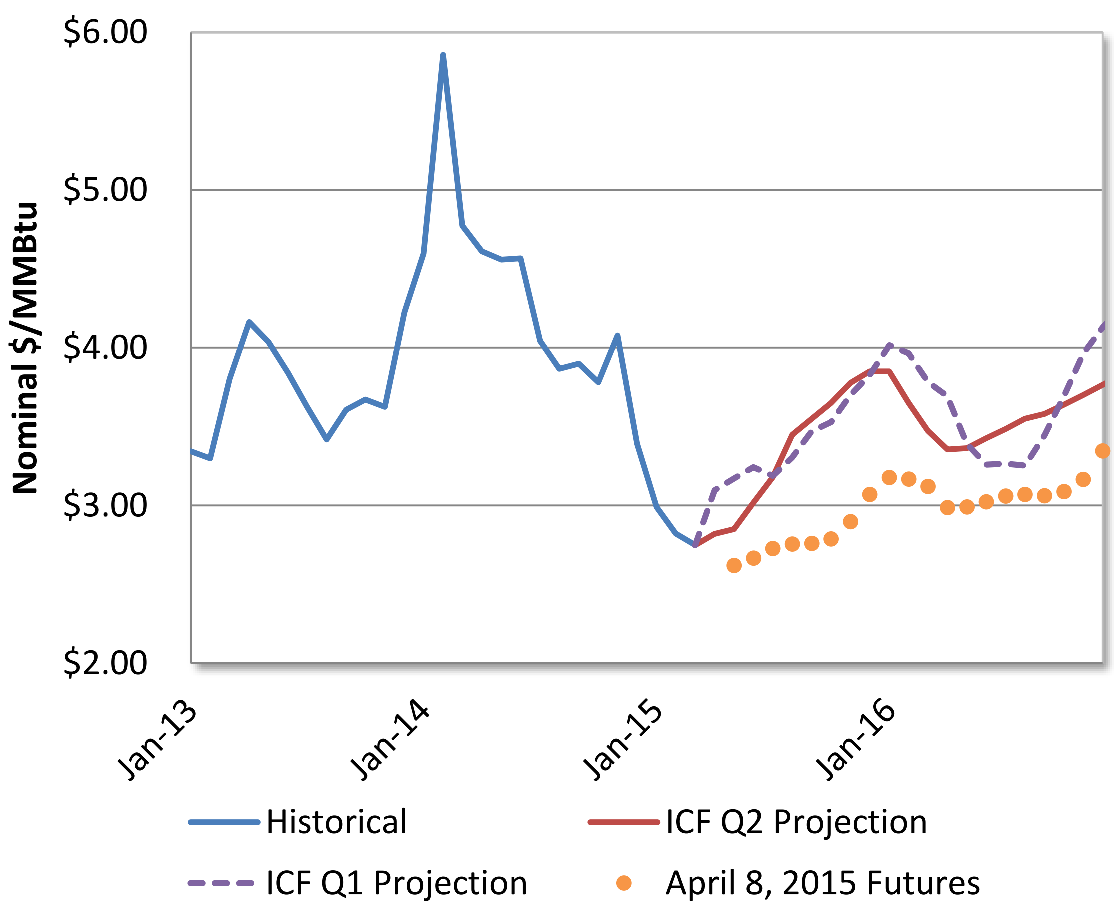
U.S. and Canada Gas Demand, Average Bcfd



ICF's Near-term Gas Price Projection

- Current futures market prices remain below $3.00/MMBtu through the summer.
- ICF projects a stronger recovery of Henry Hub spot prices for the remainder of the year as demand and supply re-balance.
  - Strong power generation demand increase;
  - Storage injections replenish storage inventories;
  - Supply/demand balance tightens in response to lower drilling activities.

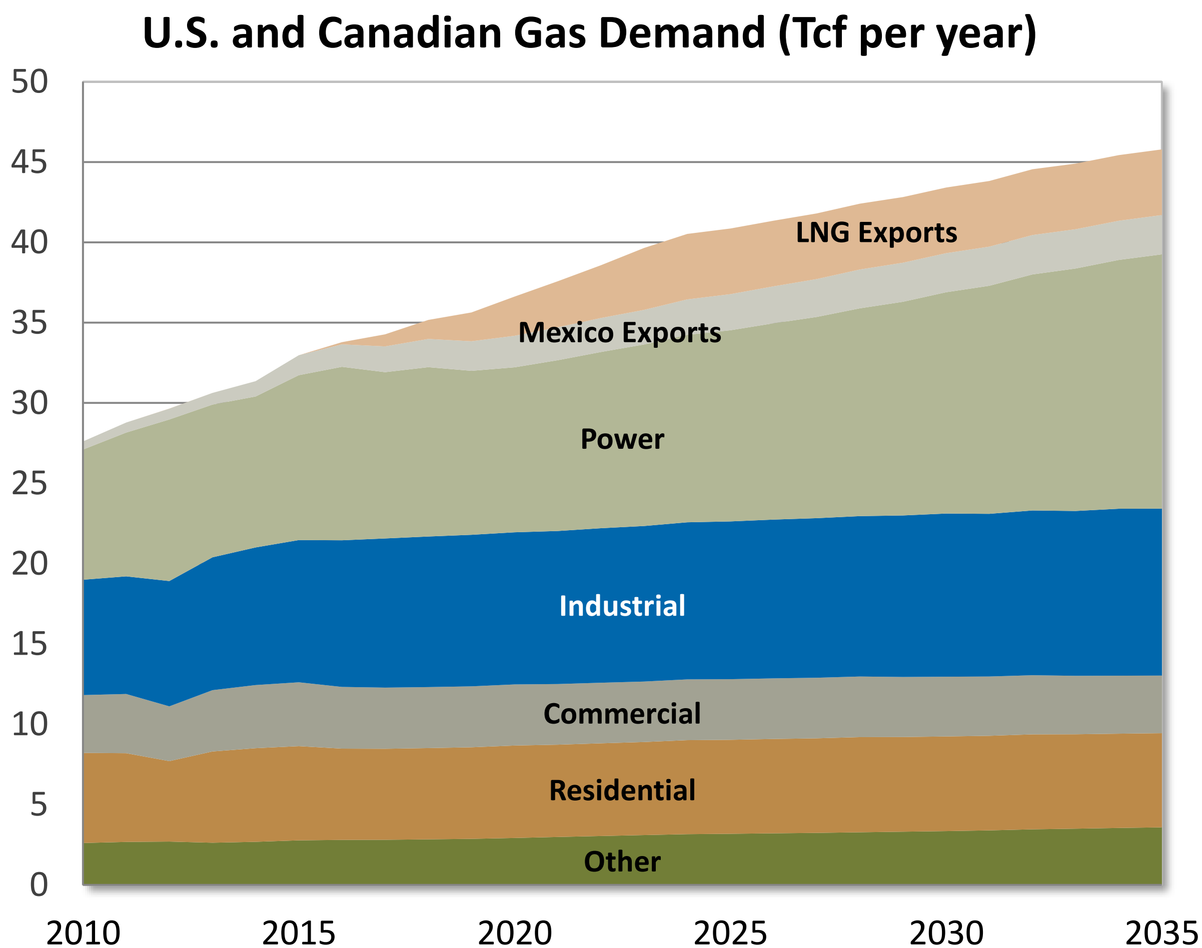
Near-term Henry Hub Price, Nominal $/MMBtu



Macro Market Trends

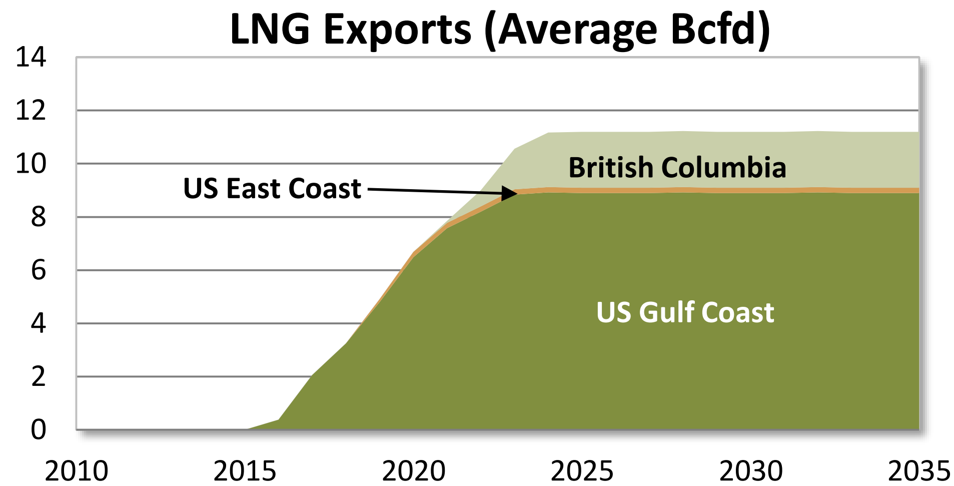
Projected Market Growth

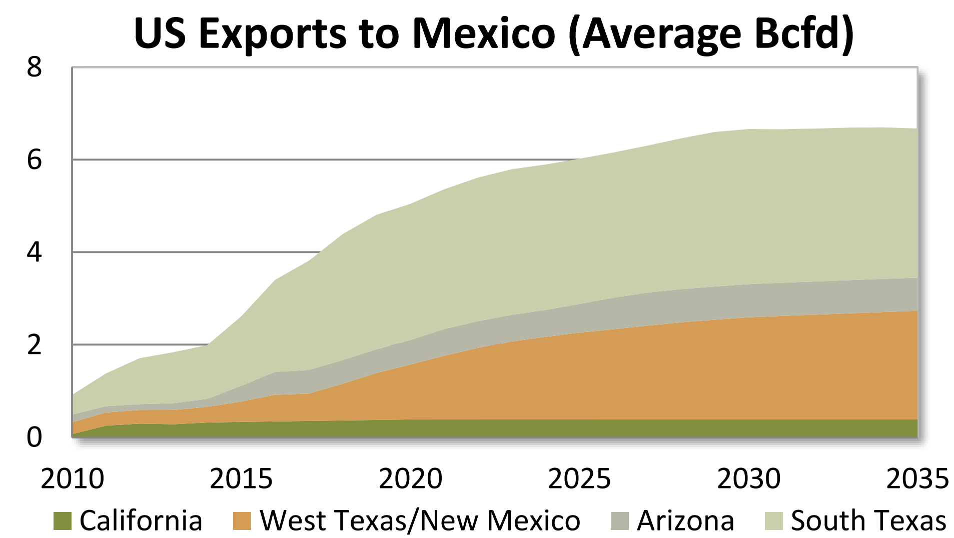
- By 2035, U.S. and Canadian gas consumption is projected to increase by nearly 14.5 Tcf (+39.5 Bcfd), versus today's level, exhibiting an average growth rate of roughly 1.8% per year.
  - Roughly 45% of the growth comes from the power sector, which grows to about 16 Tcf (43 Bcfd) by 2035.
- Gas exports also create significant demand growth.
  - LNG exports reach 4.1 Tcf (11.2 Bcfd) by 2025.
  - Mexican Exports grow to 2.4 Tcf (6.7 Bcfd) by 2035.



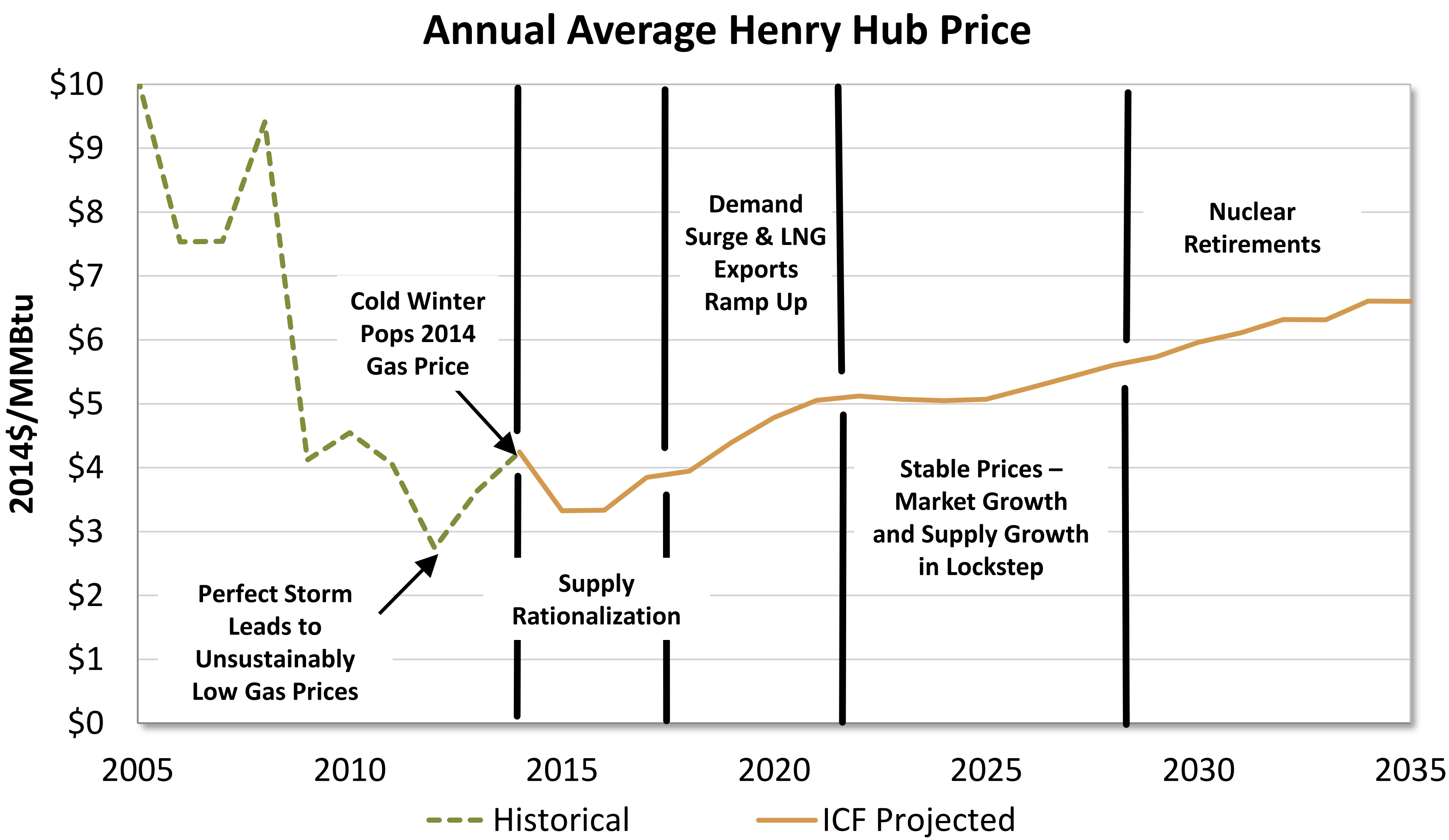
Projected Exports

- Since 2012, DOE has approved non-FTA exports for 7 U.S. LNG terminals: Sabine Pass, Freeport, Lake Charles, Cove Point, Cameron LNG, Jordan Cove, and Oregon LNG.
  - ICF's current projection assumes U.S. LNG exports reach 9.1 Bcfd by 2024.
  - LNG exports from British Columbia are delayed by 2 years relative to ICF's Q1 2015 projection, and projected to reach 2.1 Bcfd by 2025, due to reduced oil prices.
- Recent growth in Mexican exports have been driven by increases in Eagle Ford production and growth in Mexican gas use.
  - Mexican gas demand is being driven by replacement of oil-fired generation.





Projected Natural Gas Prices



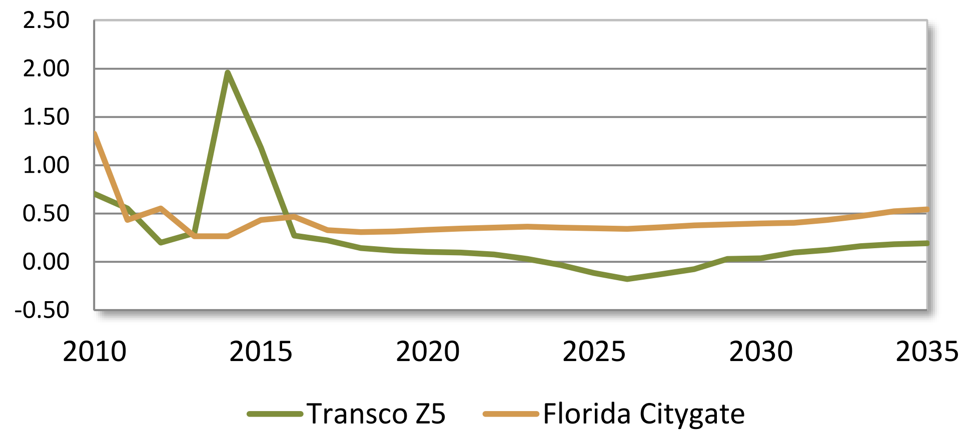
Projected Regional Results

Regional Outlook – Southeast Consuming Area

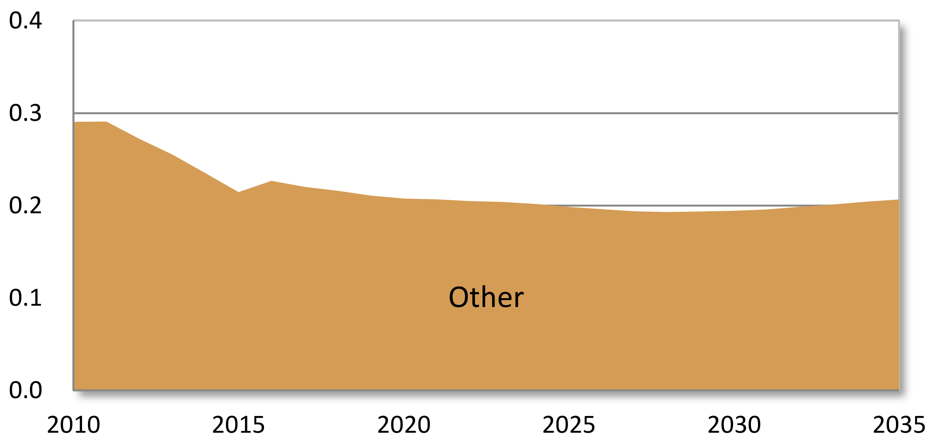
(Includes MD, VA, NC, SC, GA & FL)

- Area continues to be a strong net importer of gas.
- Significant load growth in the power sector driven by electric load growth and coal/nuclear plant retirements.
- Barring new pipeline capacity, the area's price basis has the potential to increase significantly. New pipeline capacity is expected, especially from the Marcellus and Utica.
- Incremental capacity beyond Sabal Trail may be needed into Florida, depending on the amount of electric load growth.

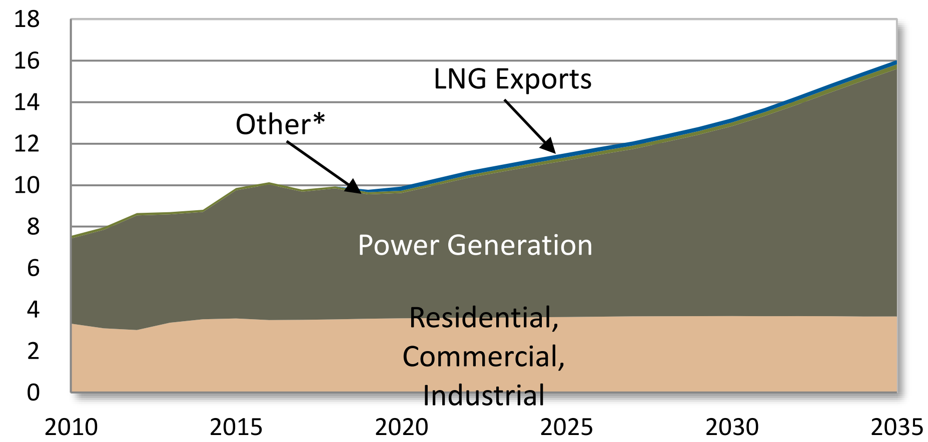
Basis versus Henry Hub (2014$/MMBtu)



Annual Indigenous Supply (Average Bcfd)



Annual Demand (Average Bcfd)



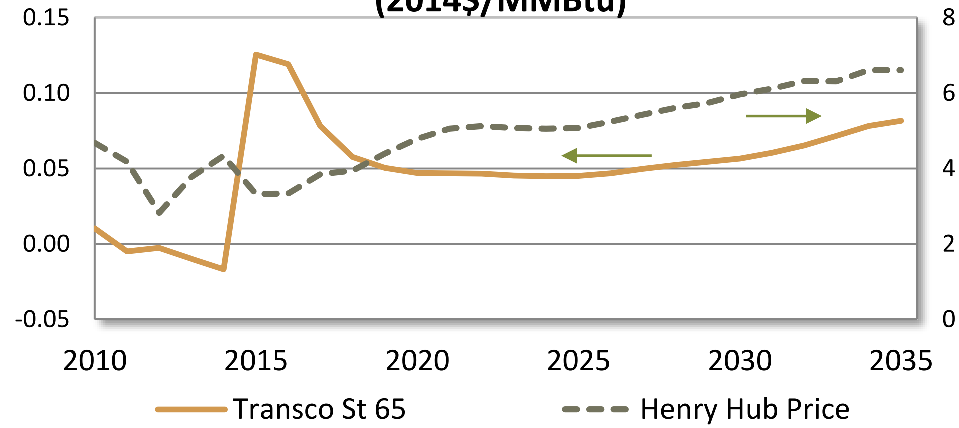
* Other includes pipeline fuel, lease and plant gas use

Regional Outlook – Gulf Coast

(Includes Southern LA, MS , AL & GOM Offshore)

- Gulf of Mexico production is likely to experience a modest rebound as gas prices firm above $5 per MMBtu.
- But, the area's demand growth, including LNG exports, is likely to significantly outpace production.
- The area's demand growth, coupled with broader market growth across North America, will place significant upward pressure on Henry Hub price, particularly between 2016 and 2020 when petrochemical load and LNG exports are growing.
- Basis to points that are more remote to the area's production, for example, Transco Station 65 is likely to increase along with market growth.

Henry Hub Price & Basis versus Henry Hub (2014$/MMBtu)



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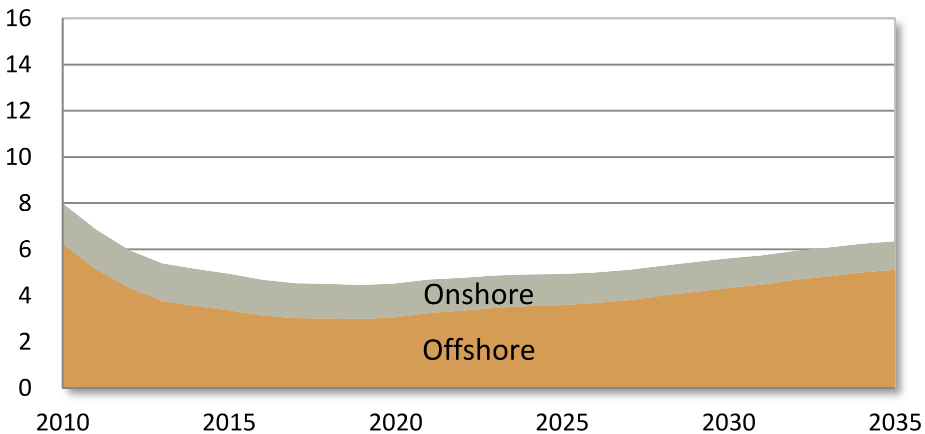

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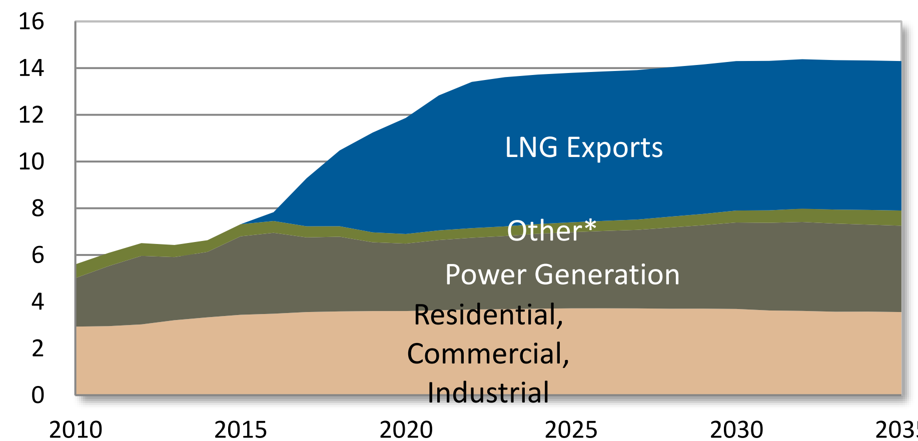

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Schedule Your Demonstration

Schedule a 20 minute demonstration

with one of our representatives to

learn more about the

ICForecast Strategic Natural Gas Outlook.

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