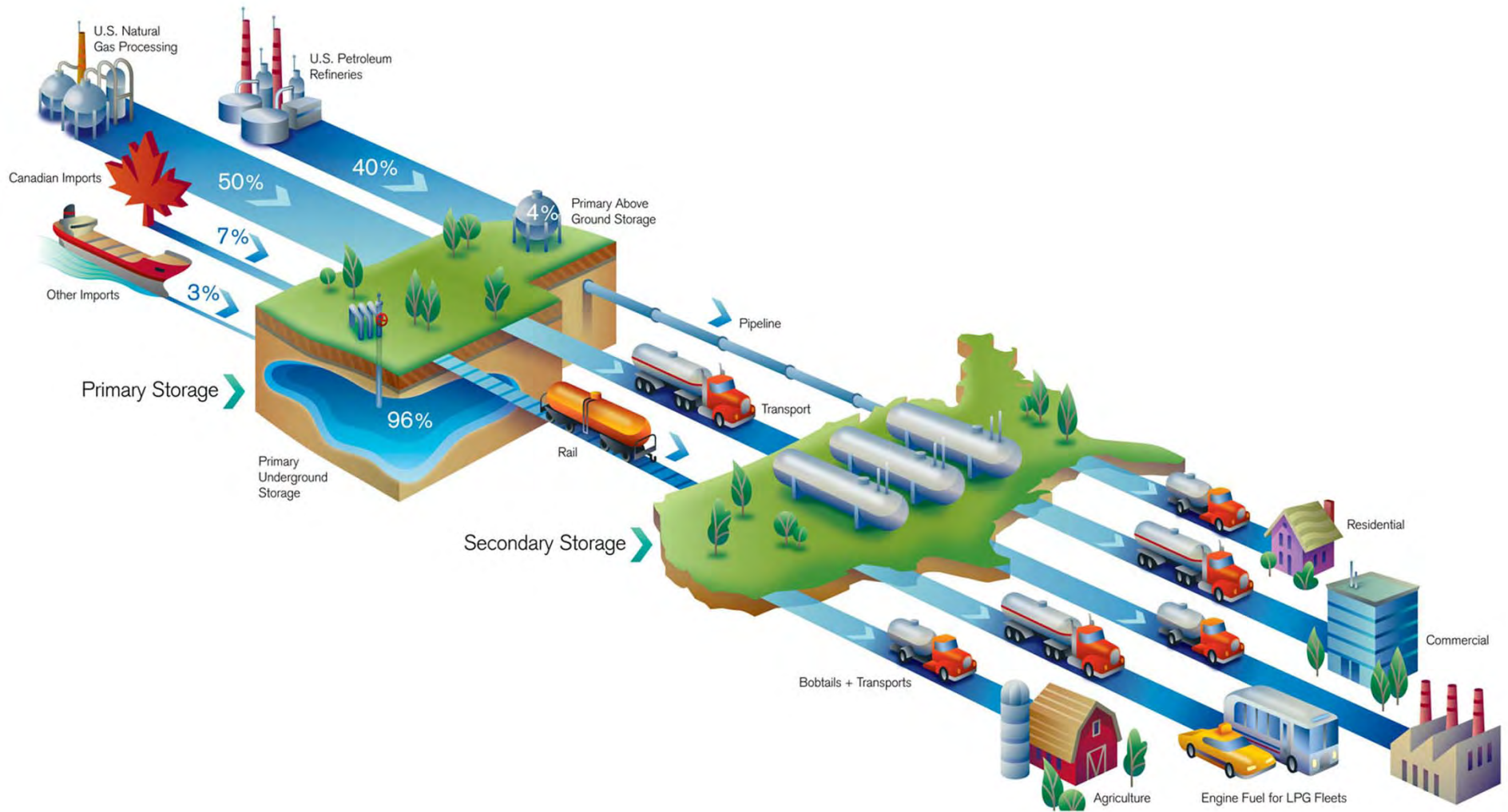
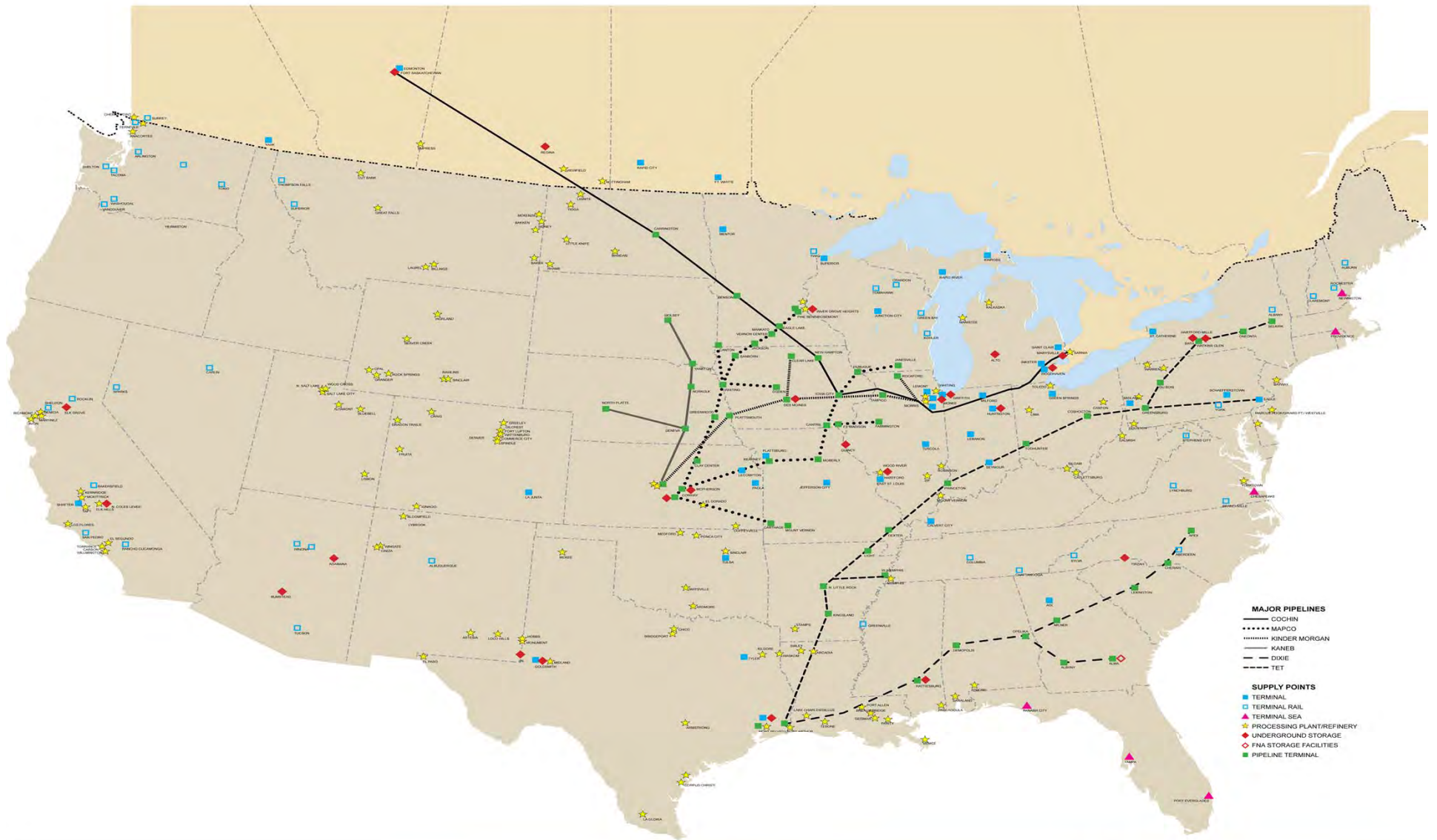




# **Propane Demand and Supply**

*--Tom Van Buren, Sr. Vice President, FNA*





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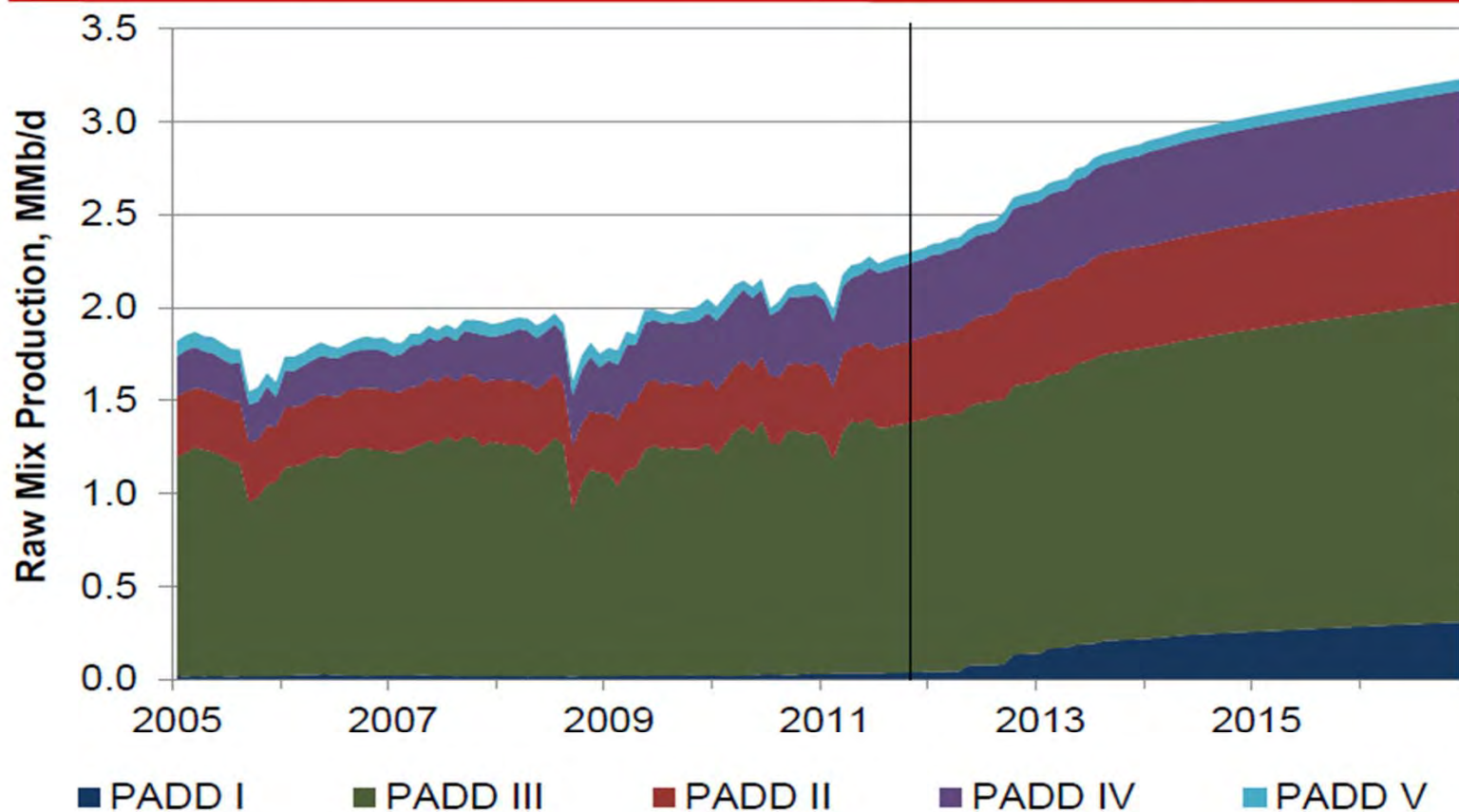
# US Shale Regions



Source: Energy Information Administration based on data from various published studies.  
Updated: May 9, 2011

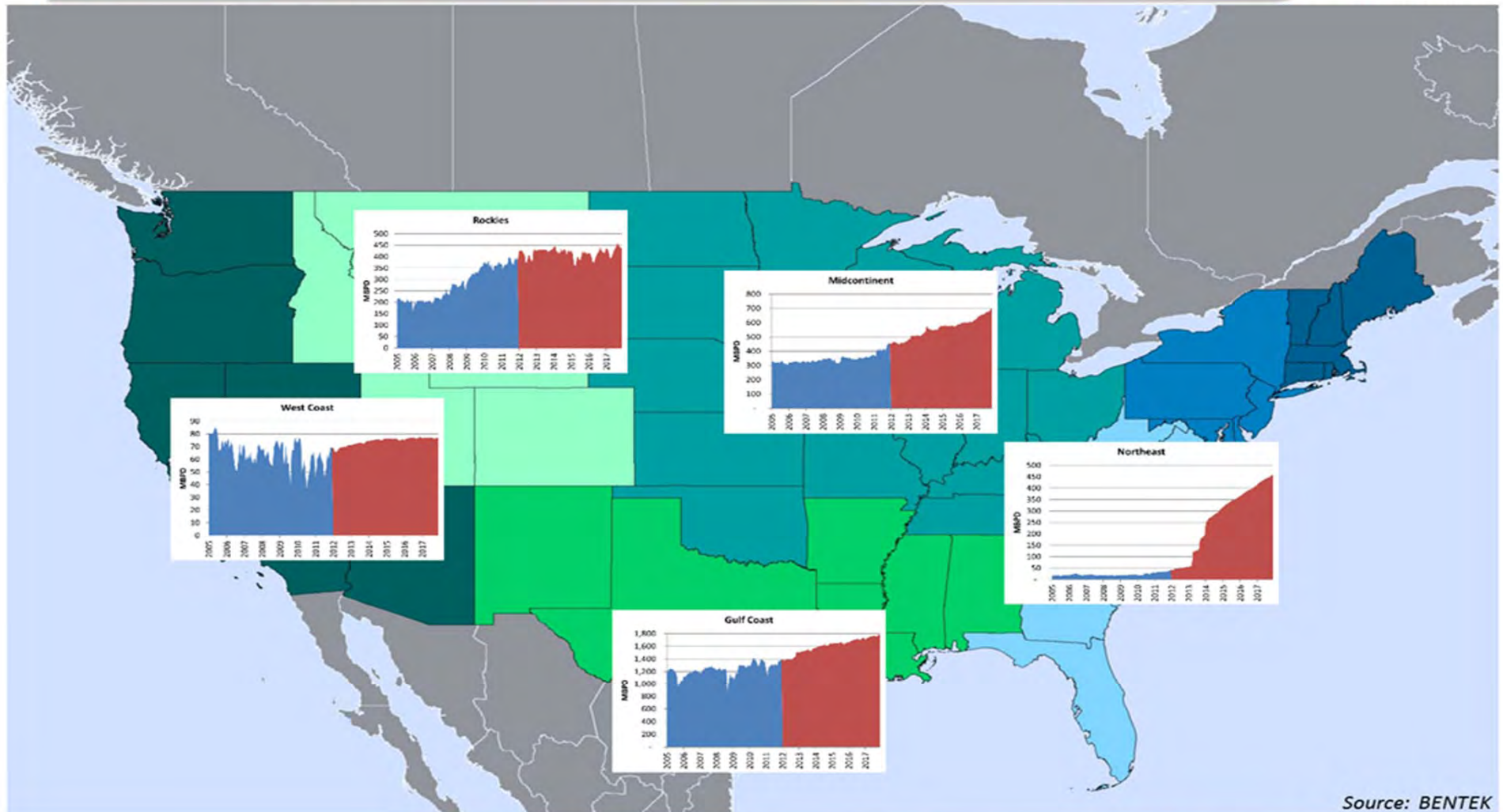
# NGL Production Forecast

## NGL Production Forecast to Increase by 950 Mb/d



Source: Bentek

# U.S. NGL Production by Region

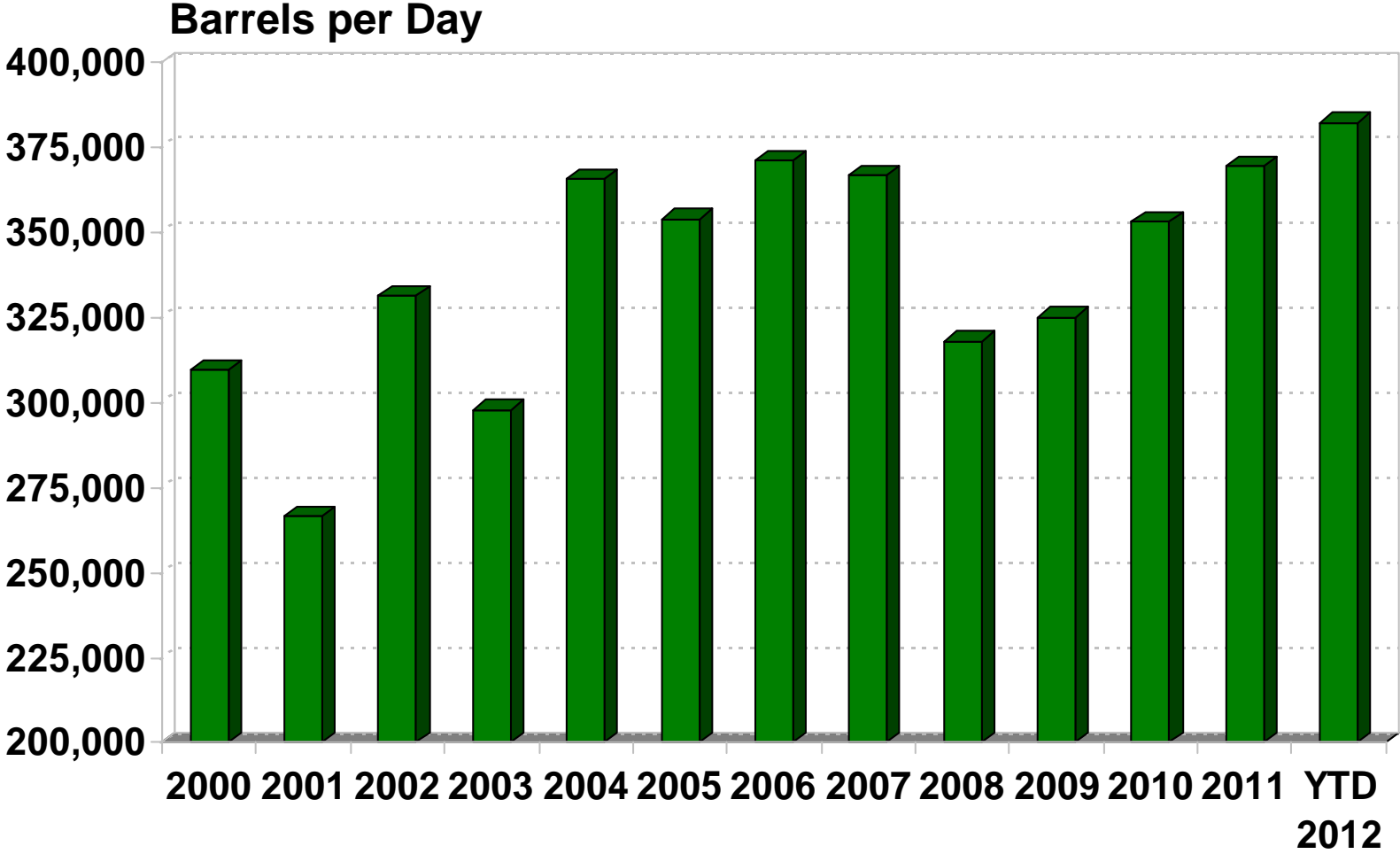


Source: BENTEK

## Where is the new supply going?

- Petrochemical Demand
- Export Demand
- US Demand – more conservative
  - » Home Owners and Businesses converting from Fuel Oil to Propane
  - » Internal Combustion Engines

# Propane Cracking Rates from Petrochemical Activity



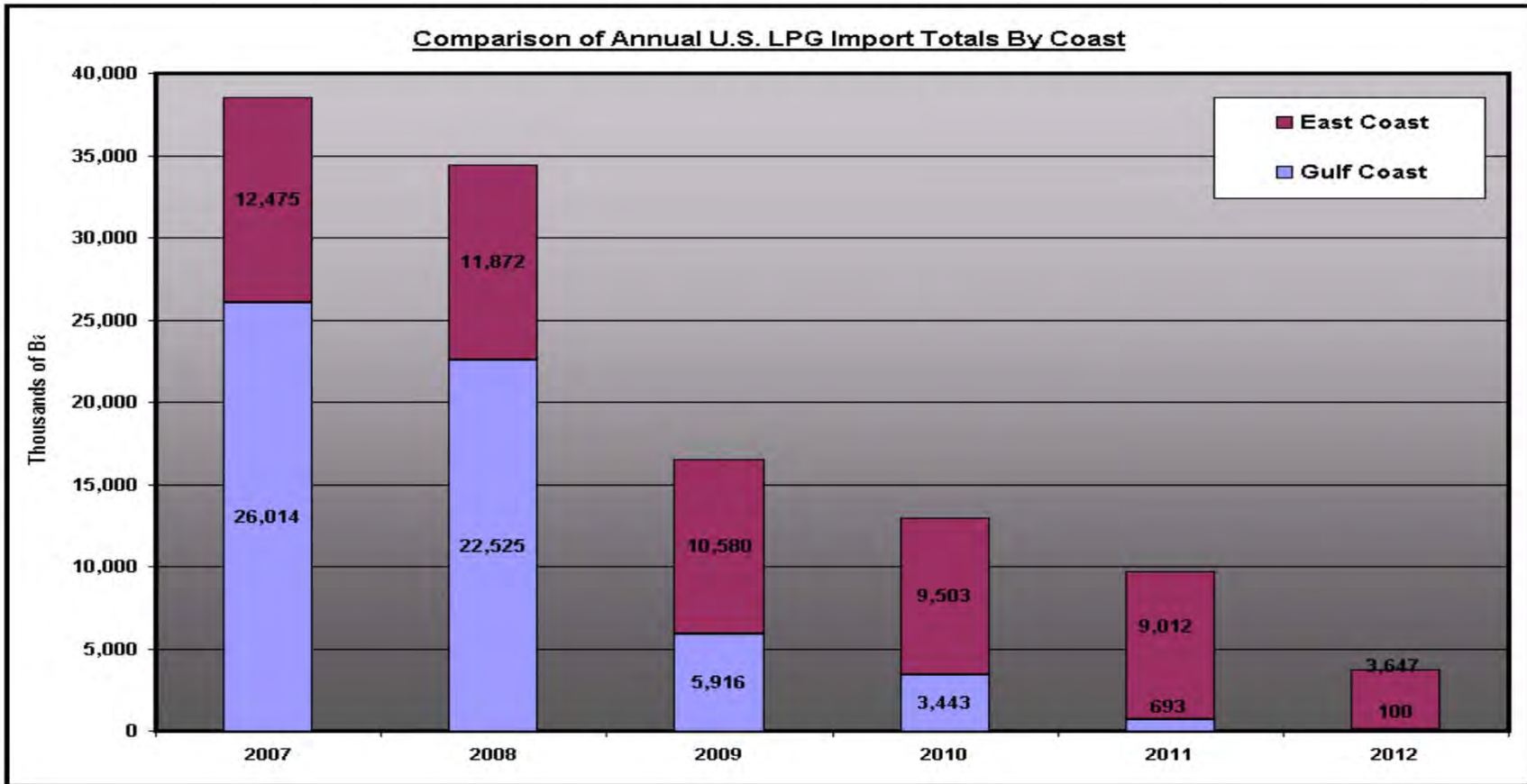
Source: IHS



## US Propane Prices

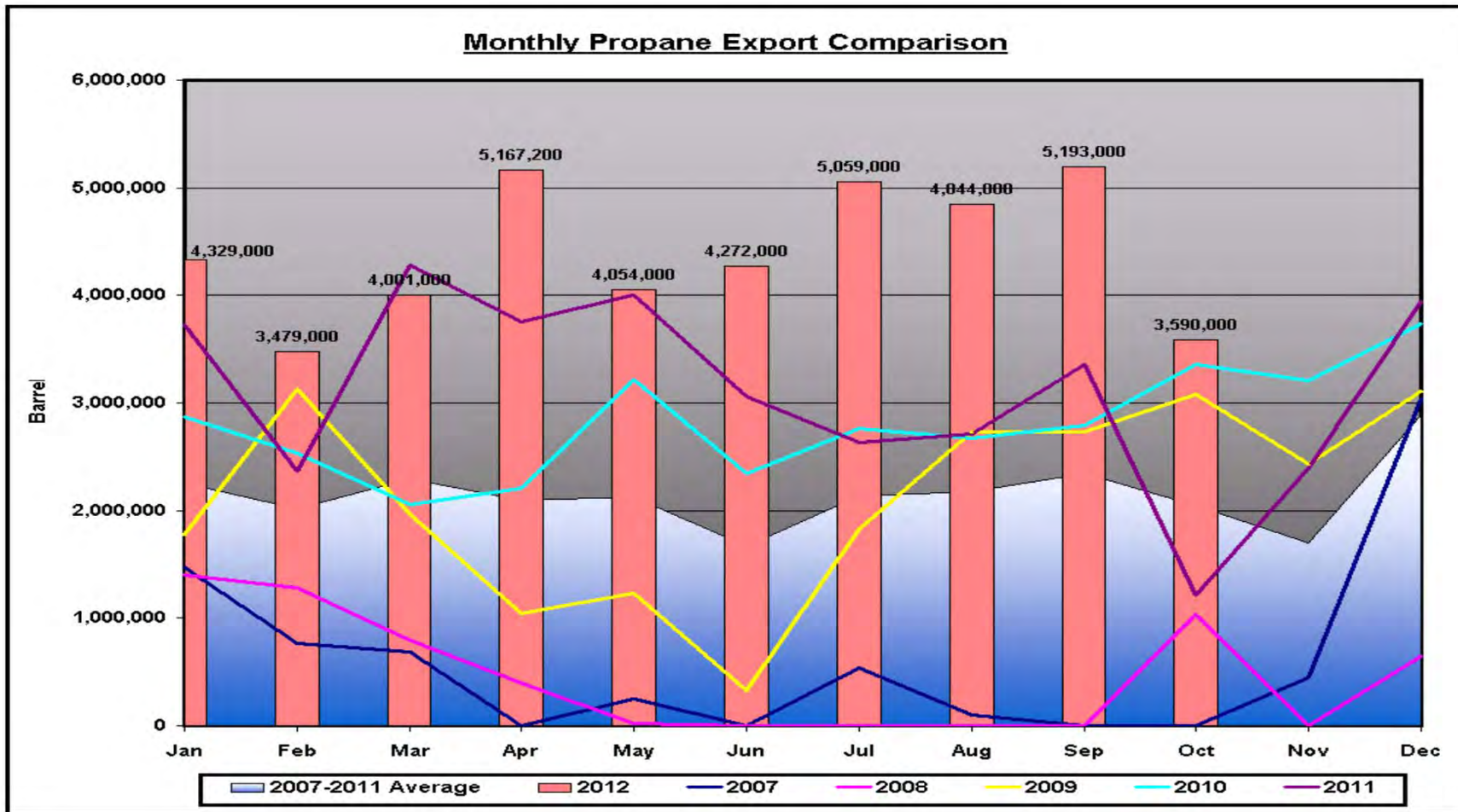
- US propane is currently the cheapest in the world and trading at historically low percentages to WTI crude prices.
- This is due to surging production from the shale regions mentioned earlier and from the inventory overhang left after a record warm winter.

# Cheap U.S LPG = Declining Imports and...



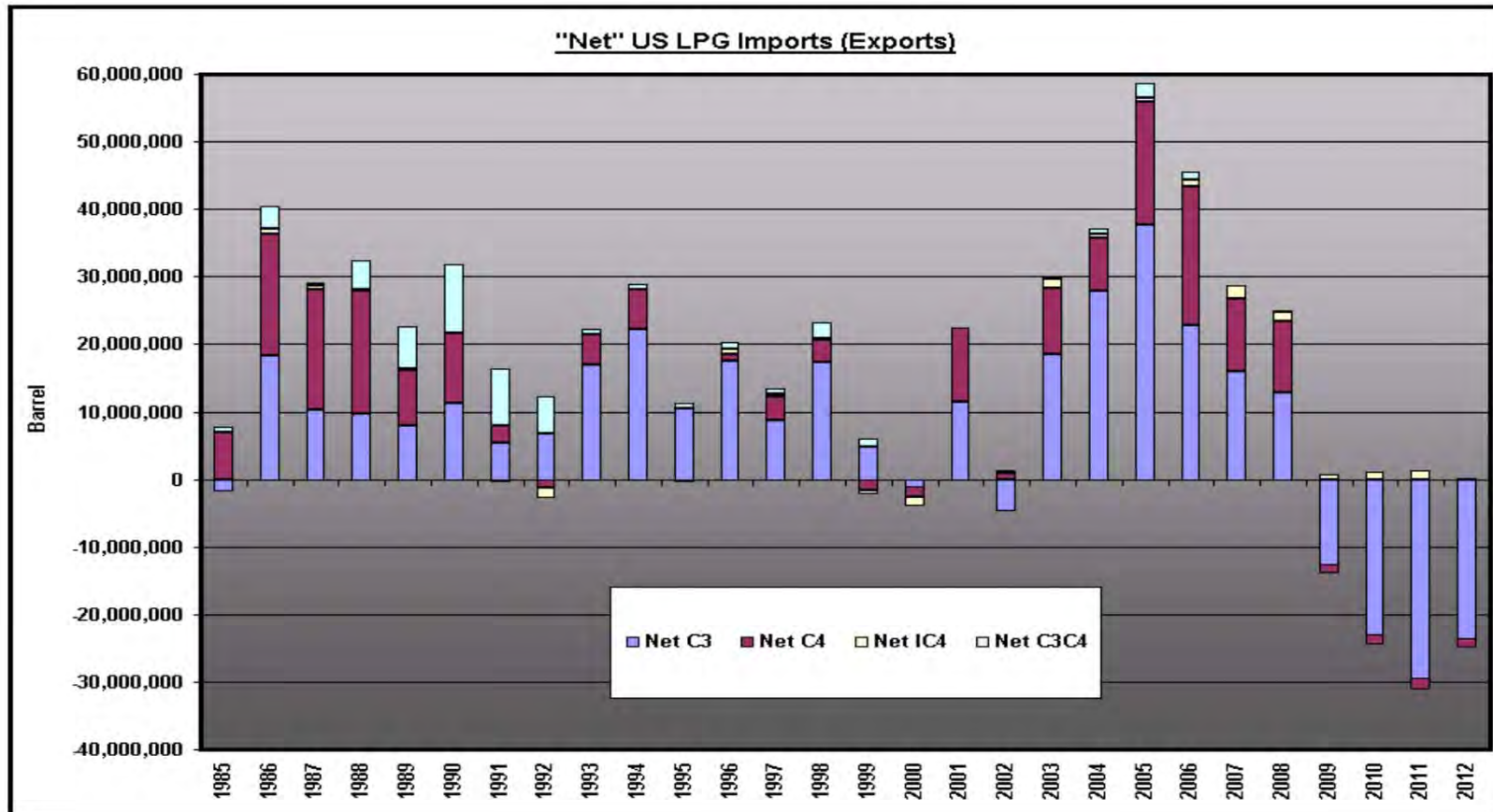
Source: Waterborne LPG Report – Sep 27th, 2012

# .... Maxed Out Export Capacity



Source: Waterborne LPG Report – Sep 27<sup>th</sup>, 2012

# Net Importer To Net Exporter



Source: Waterborne LPG Report – June 28<sup>th</sup>, 2012

# Propane - Exports

- There are currently 2 terminals for propane export out of the United States – Enterprise's Houston terminal and Targa's Galena Park terminal.
- Current export capacity is about 4.5 - 5.0 million barrels per month.
- Expansions are due for Enterprise by 4<sup>th</sup> quarter of 2012 and with Targa by 3<sup>rd</sup> quarter of 2013.
- Conoco Phillips is moving forward with plans to build a terminal as well but won't be ready until 2015 or beyond.
- Export capacity is maxed out through 2013 and almost there for 2014 (even considering the expansion volume).
- Most exports from the USGC go to Central America and Northwest Europe.



# Panama Canal Expansion

- Expansion of the Panama Canal under a \$5.25 billion project to enable movement of larger vessels has fallen behind and is likely not to be operational until mid 2015. Original timeline called for end of 2014.
- Expansion will build a new lane of traffic along the Panama Canal through the construction of a new set of locks, which will double tonnage capacity and allow the transit of much longer, wider ships through the waterway.
- After the expansion is completed, very large vessels carrying propane from USGC to the Far East, for example, will be able to pass through the Panama Canal.
- This would also eliminate the route around South America and shaves six days off the Asia to US Gulf route. A shorter route makes the voyage cheaper and could make for more arbitrage opportunities.
- The Panama Canal Authority will offer special rates to those larger vessels, which aren't required to pay additional charges to pass around the Cape of Good Hope, in an effort to attract traffic to the canal.

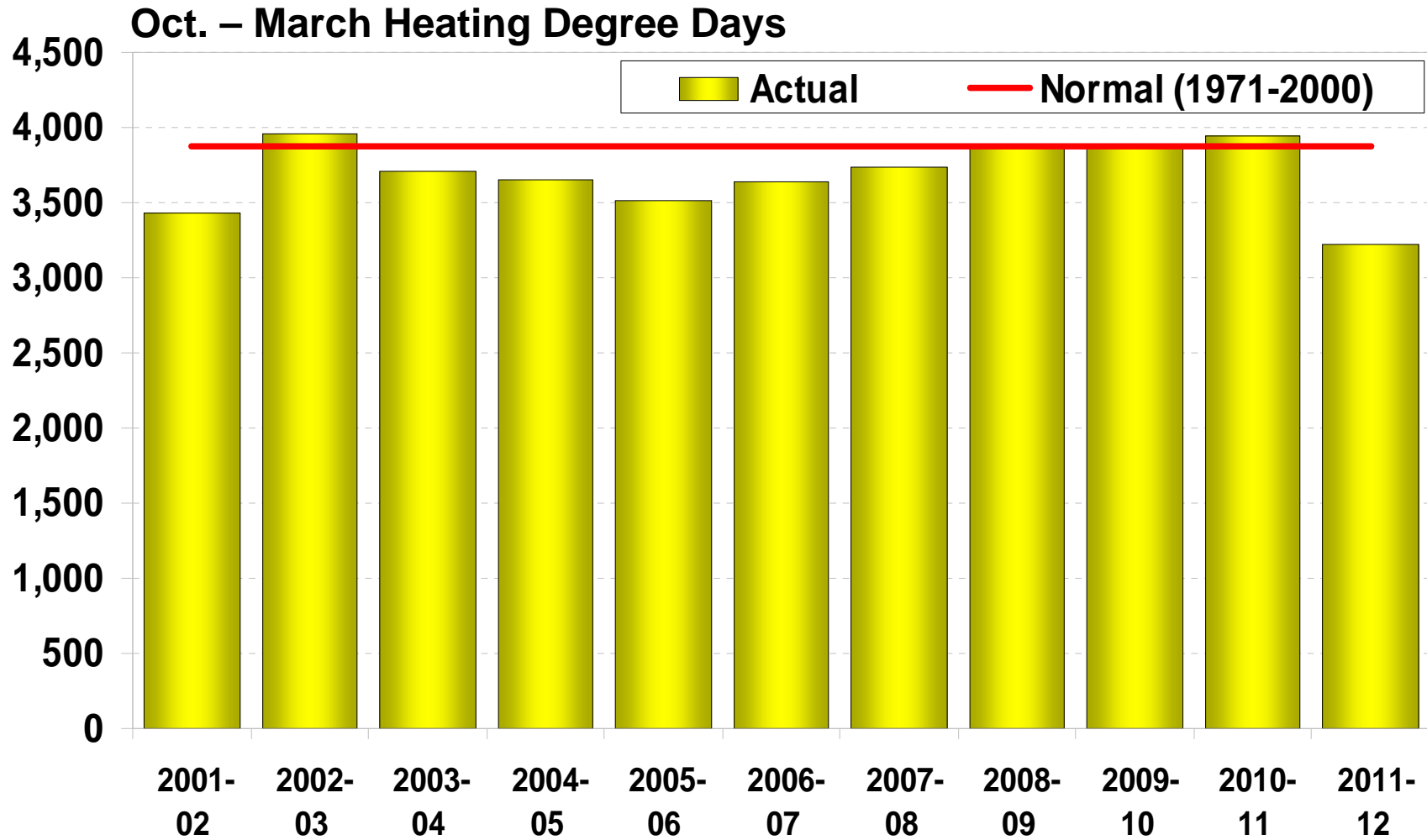


Source: [www.shipandbunker.com](http://www.shipandbunker.com)

# Propane Inventories

- Where are we now?

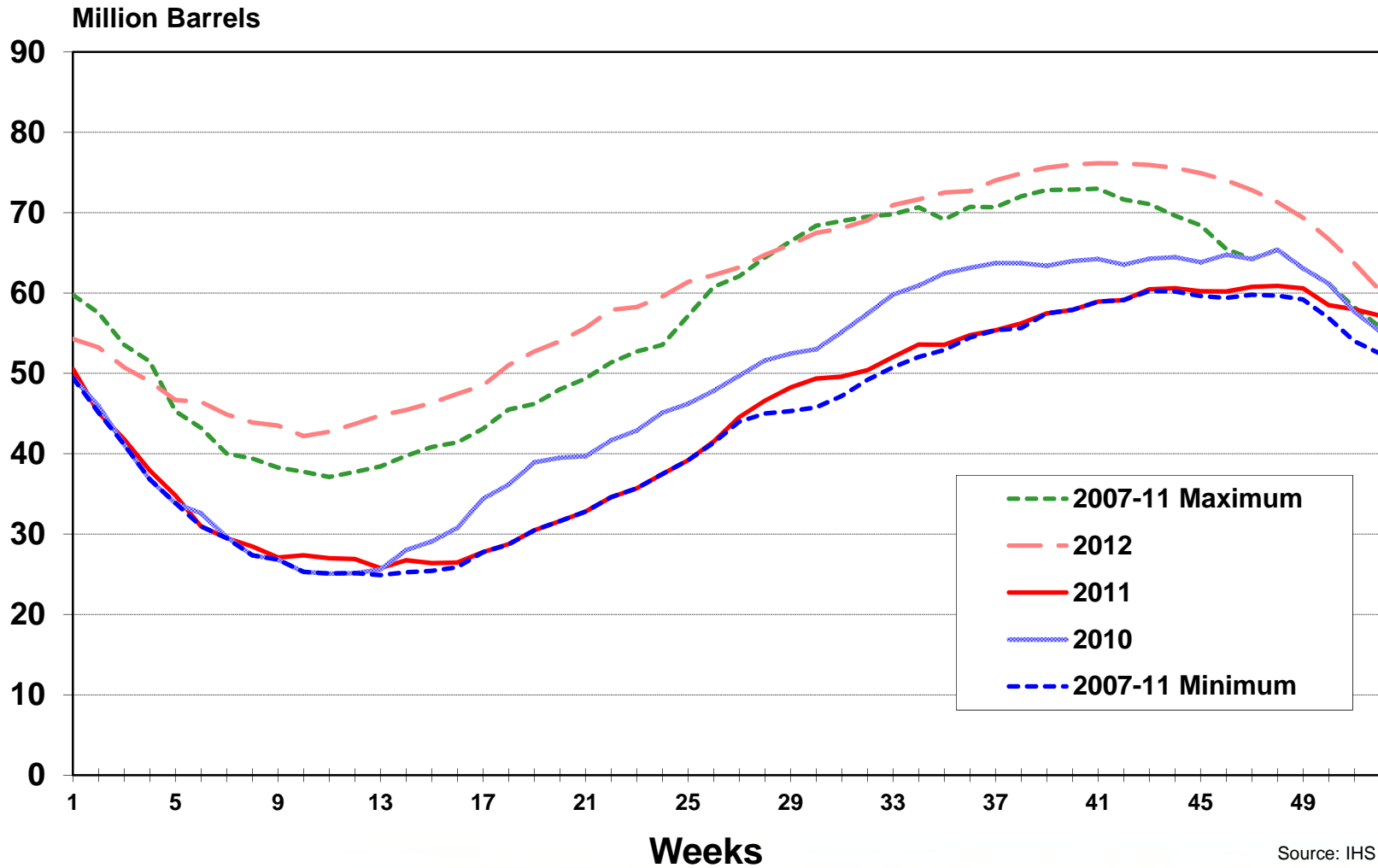
# Record Warm Winter 2011-12



Source: IHS

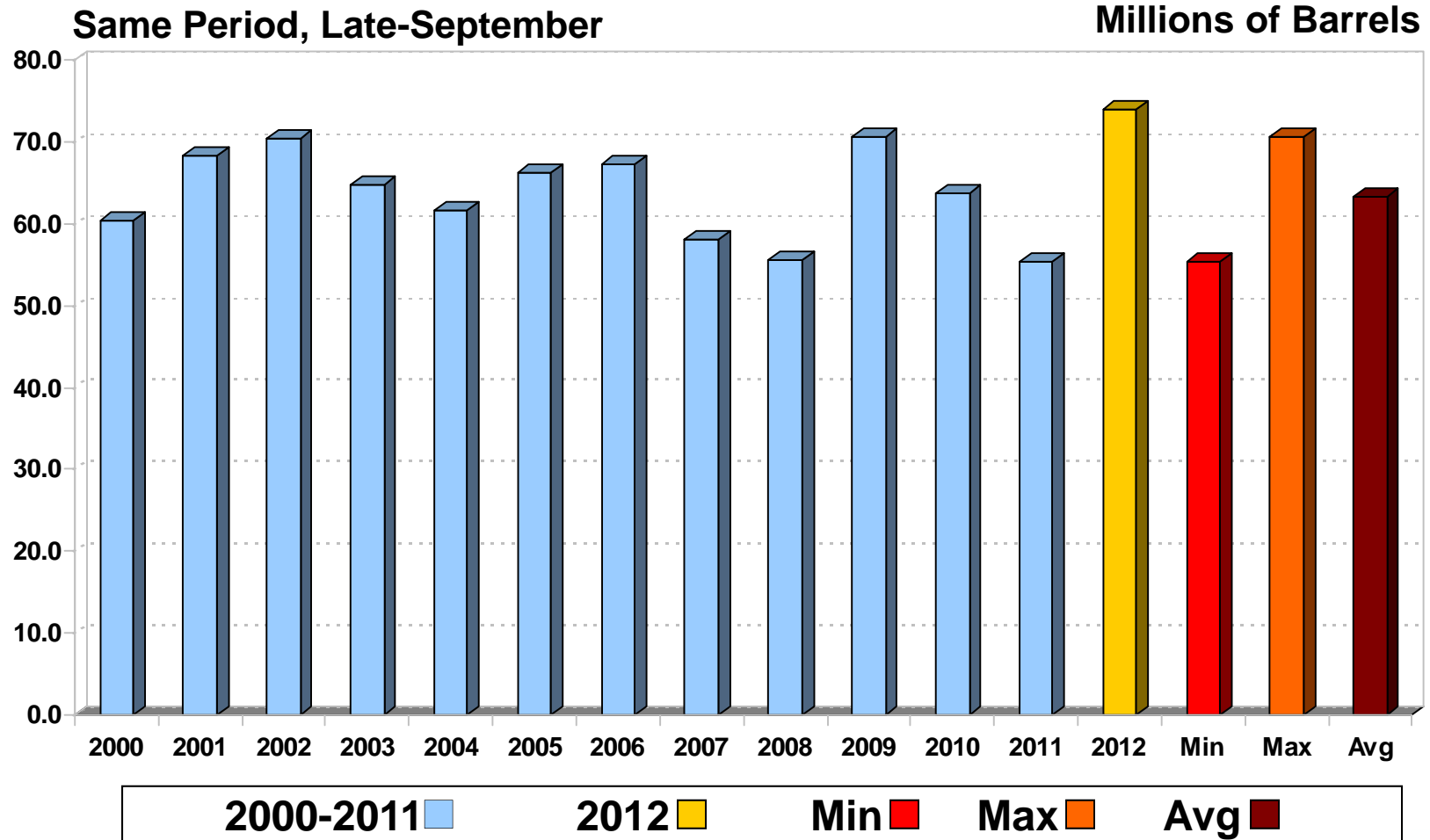


# Propane Stocks in U.S. Should Remain at High Levels



# Total U.S. Propane Stock

Inventories are 17% **Above** Average



Source: IHS and EIA

# Propane Demand Trend and Forecast

- Total U.S. Propane Retail Demand expected to increase slightly through 2020
- Traditional U.S. Propane Demand will continue to feel challenges from energy efficiency improvements and other energy sources
- Future Growth Opportunities
  - Conversion of Fuel Oil to Propane primarily in Northeast
  - Engine Fuels
    - Propane Autogas
    - Lawnmowers
    - Construction Equipment

Source: ICF International

# Propane Autogas Vehicles



# Propane Autogas Fleets



# Testimonials

- The West Virginia Board of Education on Oct. 4 approved a request from the state Department of Education to allow it to include propane as an alternative fuel in the specifications for school buses.
- U.S. Army at Fort Knox uses Propane powered lawn mowers – Sep 11 LPGas Magazine
- GA Police Department converts 25 police cars to Propane Autogas – Aug 12 NGT News
- School bus services provider First Student is receiving 86 Blue Bird propane-autogas Vision model school buses for use in Oregon's Portland Public Schools. Jun 12 School Transportation News
- Propane-autogas-powered taxicabs will soon be seen on the streets of Pittsburgh. In an effort to help clean up the city's air, Yellow Cab of Pittsburgh is converting 55 vehicles in its fleet to run on the fuel. May 12 PR Newswire
- The Indianapolis Department of Public Works has retrofitted eight trucks and converted 11 sheriff's vans to cleaner-burning fuel systems (Propane Autogas) as part of efforts covered by a federal grant from the state Office of Energy Development and the Department of Energy's Clean Cities program. Dec 11 Indianapolis Star
- The Houston Independent School District has been recognized as the top school-district green fleet in the U.S. by *Government Fleet* magazine. Rankings for the top 40 Green Fleets are based on documentation of key performance measurements, such as fleet composition of conventional versus alternative-fuel vehicles using propane or biodiesel. Oct 11 School Transportation News
- The California Energy Commission has approved the state's third-year funding plan for the commission's Alternative and Renewable Fuel and Vehicle Technology Program, allocating \$100 million toward the expansion of various alternative fuels and vehicles throughout the state. Natural gas- and propane-powered vehicles, and the fueling stations to support them, are targeted to receive \$24 million in funds. Sep 11 Ethanol Producer Magazine

# Summary

## » The Propane Market in 2012

- Wet shale gas production continues to increase, driving growth in propane from natural gas plants
- Low winter heating demand resulted in high inventories and low prices
- Increasing exports and petrochemical demand kept propane inventories from being even higher

## » 2013 and Beyond

- Gas plant propane production will continue to rise
- Export Capacity to increase providing outlet for surplus
- The Northeast propane market has challenges
- Propane Autogas in U.S. expected to increase



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**North America**



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