

Alternative Natural Gas Supply Panel

CIBO Annual Meeting
Ponte Vedra, FL
October 22, 2015

NATIONAL PROPANE GAS ASSOCIATION

- **Over 2,800 companies that produce, transport, and sell propane to millions of customers across America**
- **Broad Membership Base**
 - Retail Propane Marketers
 - Over 95% are small businesses
 - Producers, Wholesalers, Equipment Manufacturers, Distributors, Services
- **Major presence in rural America**

USED IN MANY DIVERSE APPLICATIONS

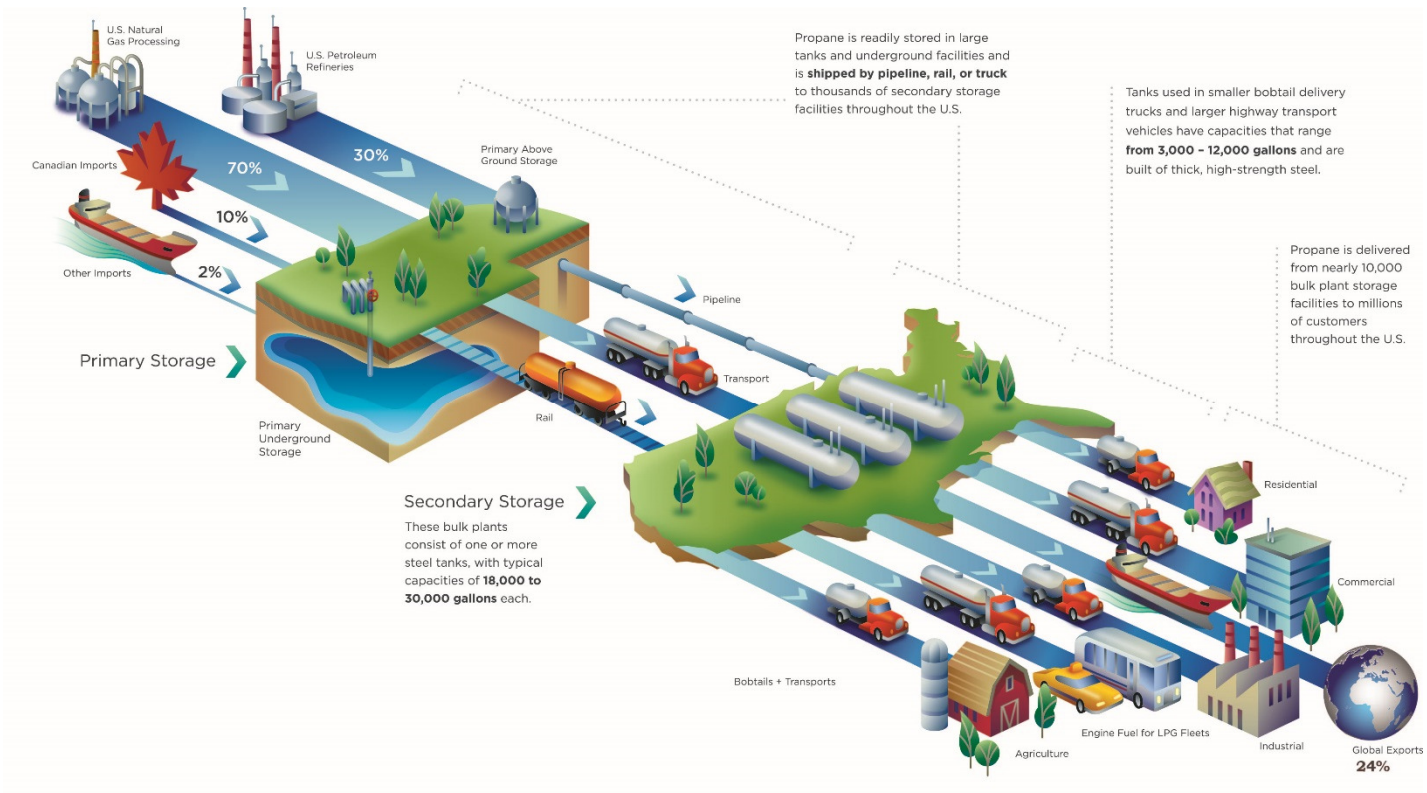
- **In 2013, 19.2 billion gallons of non-odorized propane sold***
 - Chemical – 54%
 - Residential – 25.1%
 - Commercial – 8.6%
 - Agriculture – 5.5%
 - Industrial – 2.5%**
 - Engine Fuel – 3.1%
 - Other – 1.2%

* 2013 API Sales of Natural Gas Liquids and Liquefied Refinery Gases, December 2014

** Industrial – sold to mfr plants for standby fuel, space heating, flame cutting, etc.

PROPANE (C₃H₈)

- **Produced from both natural gas and crude oil.**
 - Today, about 70% comes from natural gas due to shale plays
 - Exists as a gas at ambient pressures
 - Transported as a liquid under modest pressure
- **Primarily produced domestically**
- **Listed as a clean, alternative fuel by DOE/EPA**
 - Non-toxic
 - No global warming potential
- **Heating value: 91,500 Btu/gallon**



FACTORS TO CONSIDER FOR A PROPANE CONVERSION

- **Amount of Fuel Needed**
- **Onsite Considerations**
- **Delivery Infrastructure**
- **Supply/Demand Issues**
- **Economic Considerations**

AMOUNT OF FUEL NEEDED

- **Key Assumptions:**
 - Boiler with 100 MMBtu/hr input rating
 - Operates 24/hr day, 365 day/yr
 - Propane: 91,500 Btu/gal
- **Amount of fuel needed:**
 - \approx 26,250 gallons/day
 - \approx 9.6 million gallons/yr
- **For a 7-day supply \approx 184,000 gallons onsite**

ONSITE CONSIDERATIONS

- **Equipment Requirements**
 - Storage Tanks
 - Sizes range from 12k, 18k, 30k, 60k gallons
 - Vaporizers
 - Appurtenances – piping, valves, regulators, etc.
 - Propane gas-air mixers (for standby systems)
- **Space/Land Requirements**
 - For 30,000 gallon tank - 85' x 15'
 - For typical vaporizer – 15' x 15'

ONSITE CONSIDERATIONS

- **Code Requirements**
 - NFPA 58 - *LP-Gas Code*

Scope: Storage, handling, transportation and use of LPG

 - Specifies requirements for LP-Gas installations such as:
 - Container separation distances
 - Fire safety analysis
 - Required for all >4,000 gallons
- **Approval by local Authority Having Jurisdiction (AHJ)**

DELIVERY INFRASTRUCTURE

- **Mode of Delivery Options**
 - Railcar
 - Carry approximately 30,000 gallons
 - Rail terminal nearby?
 - Transport Truck
 - Carry approximately 11,000- 13,500 gallons
 - Pipeline
 - Option only if boiler facility is located near pipeline terminal

SUPPLY/DEMAND ISSUES

- **Total U.S. propane supply – 101.6 million barrels (MMbbls)**
 - ≈ 25% higher compared to last year at this time
- **Supply stocks well above 5-year average**
 - 20% higher than top of 5-yr range
- **Period of October thru March typically represents biggest drawdown**
- **More data available at www.eia.gov/petroleum**

SUPPLY/DEMAND ISSUES

Influences on Propane Demand

- **Retail Propane Marketers**
 - Weather
 - Crop drying
- **Petrochemical Companies**
- **U.S. Exports**

ECONOMIC CONSIDERATIONS

- **Current Residential Propane Prices**
 - \$1.896/gallon (compare to \$2.387/gal a year ago)
- **Current Wholesale Propane Prices**
 - Average – 54.3 cents/gal (compared to \$1.075/gal last yr)
 - Spot – 42 cpg (as of close 10/20/15)
- **Fuel Supplier Arrangements**
 - Likely want to contract with a large marketer or wholesaler
 - Longer contracts more favorable









THANK YOU

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