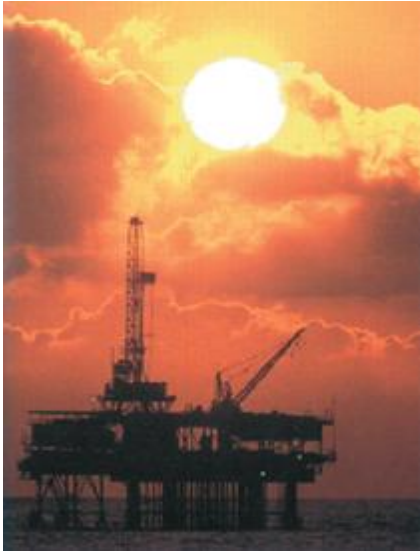


The U.S. Propane Market From “Famines” to Feast



presented at
DOE - NASEO
2009-2010 Winter Fuels Conference
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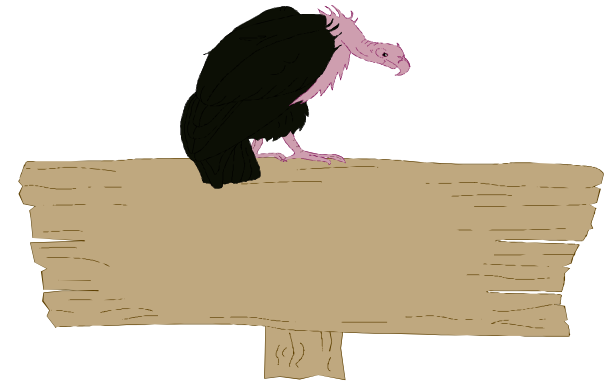
Last Year's Agenda: From Feast to Famine (Again)

The U.S. ended the 2007-2008 winter season with average amounts of propane in inventory

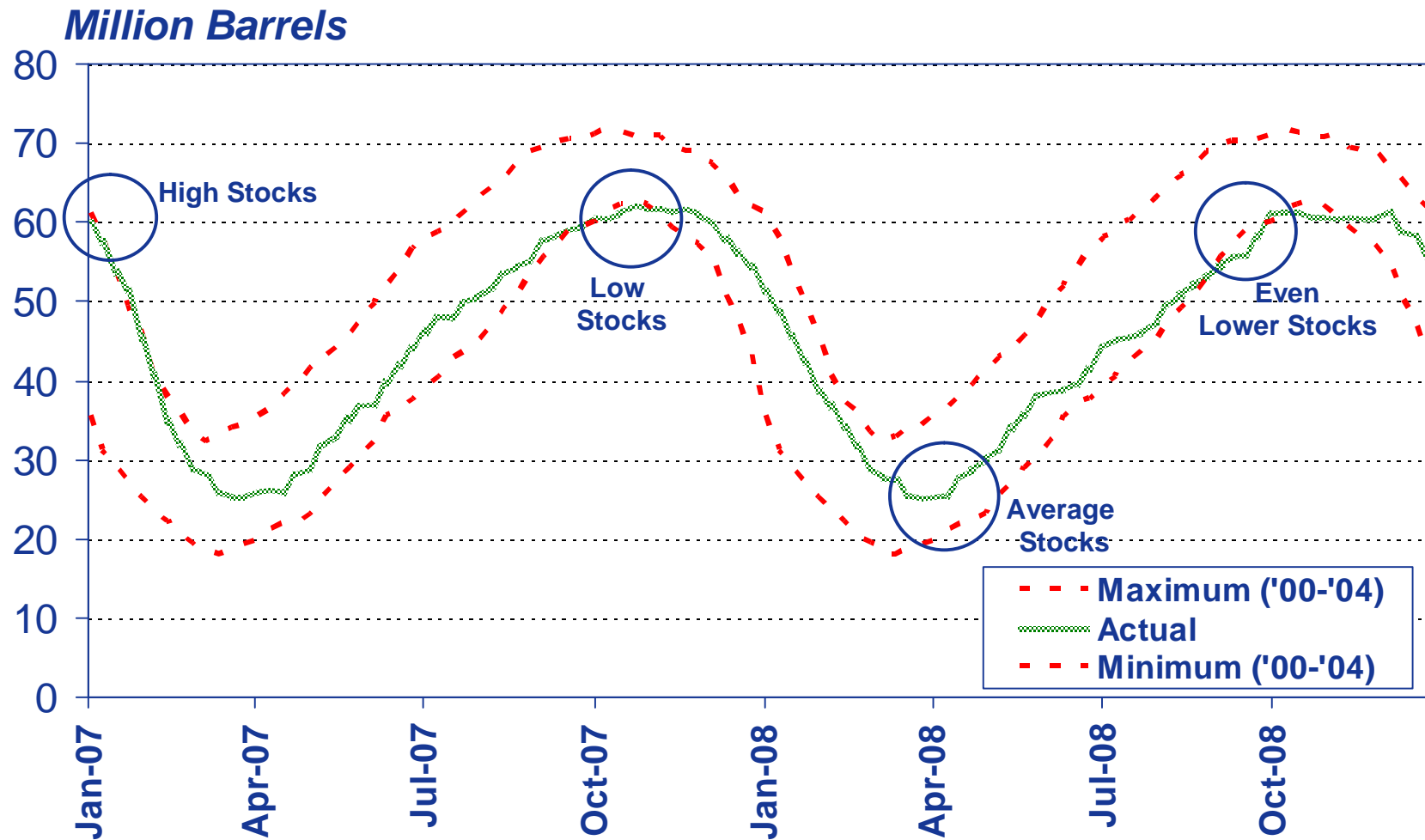


However, stocks then rose very slowly throughout the summer

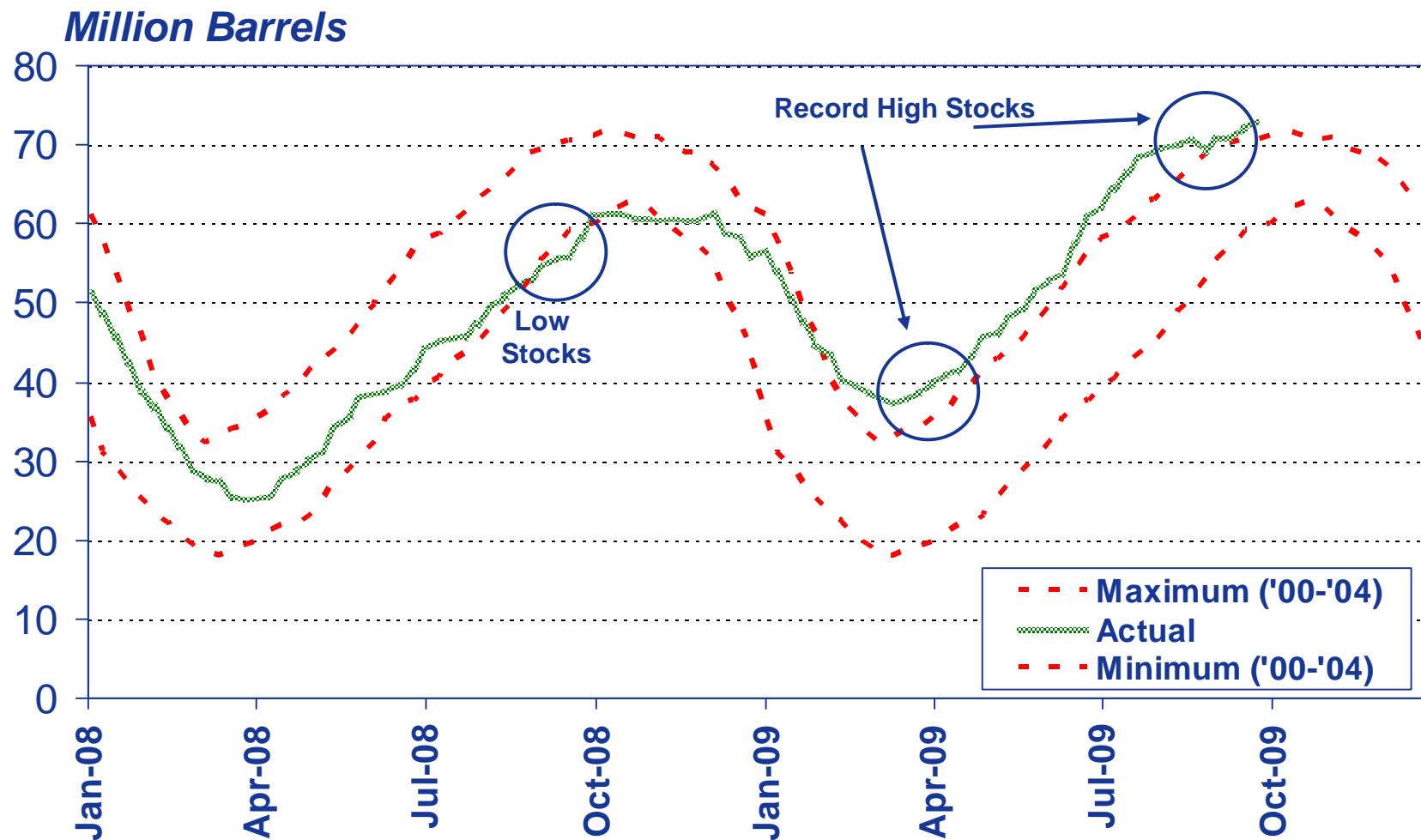
And U.S. inventories set new record lows in September and the future was vague due to two hurricanes



At this time last year, propane stocks were at new record low levels, again



This year, we're "swimming in the stuff" with propane stocks at record high levels



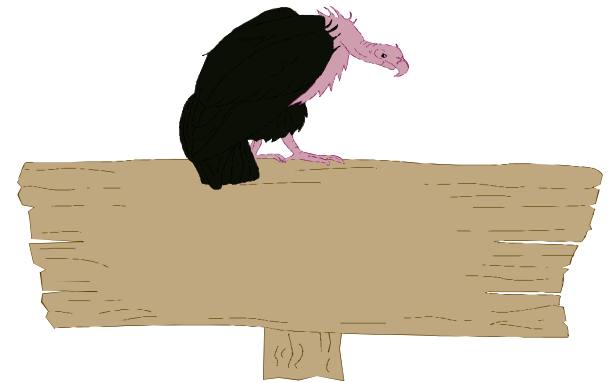
So this year's discussion concerns the shift from famines to feast

U.S. propane stocks ended 2008 at record low levels

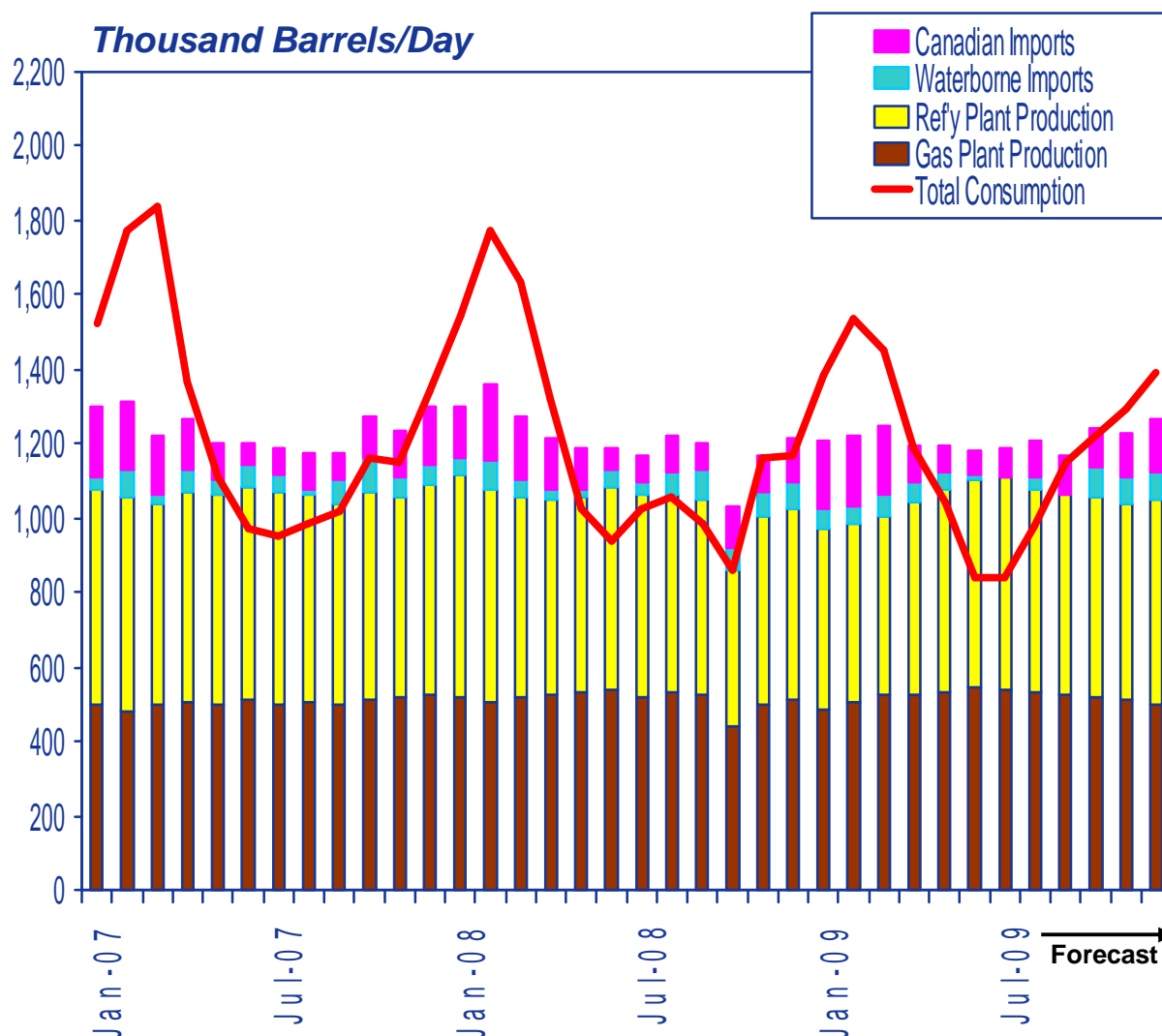
However, stocks then dropped very slowly in the spring and rose rapidly in the summer

Thus, U.S. propane inventories reached historical highs in September

HOW??

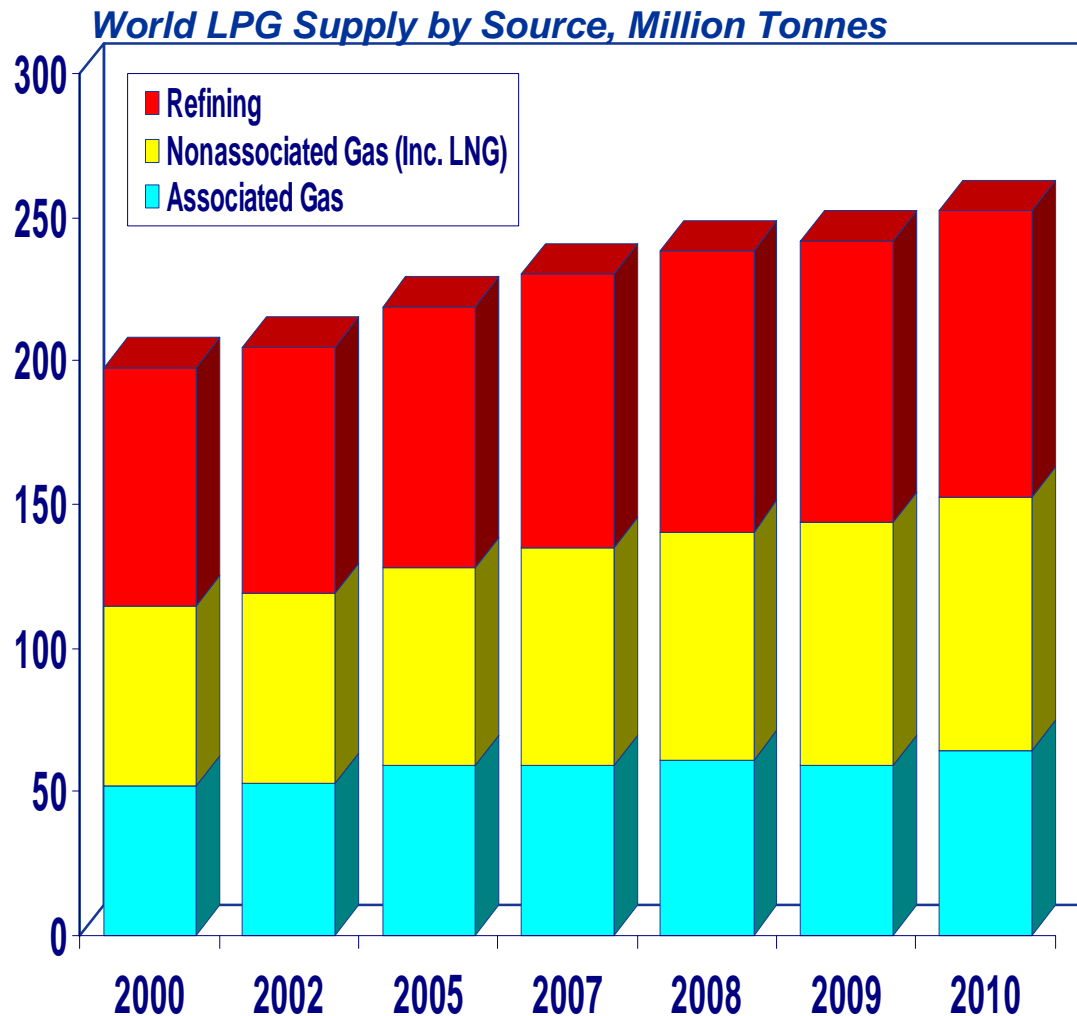


Stocks provide the balance between constant propane supplies and seasonal demand



- ∅ Propane imports have been lower in 2009
 - § Waterborne
 - § Canadian
- ∅ Conversely, domestic production of propane has been rising
 - § Gas processing
 - § Refineries
- ∅ More importantly, demand for propane was unusually low in early 2009
 - § Res/Comm
 - § Petrochemicals

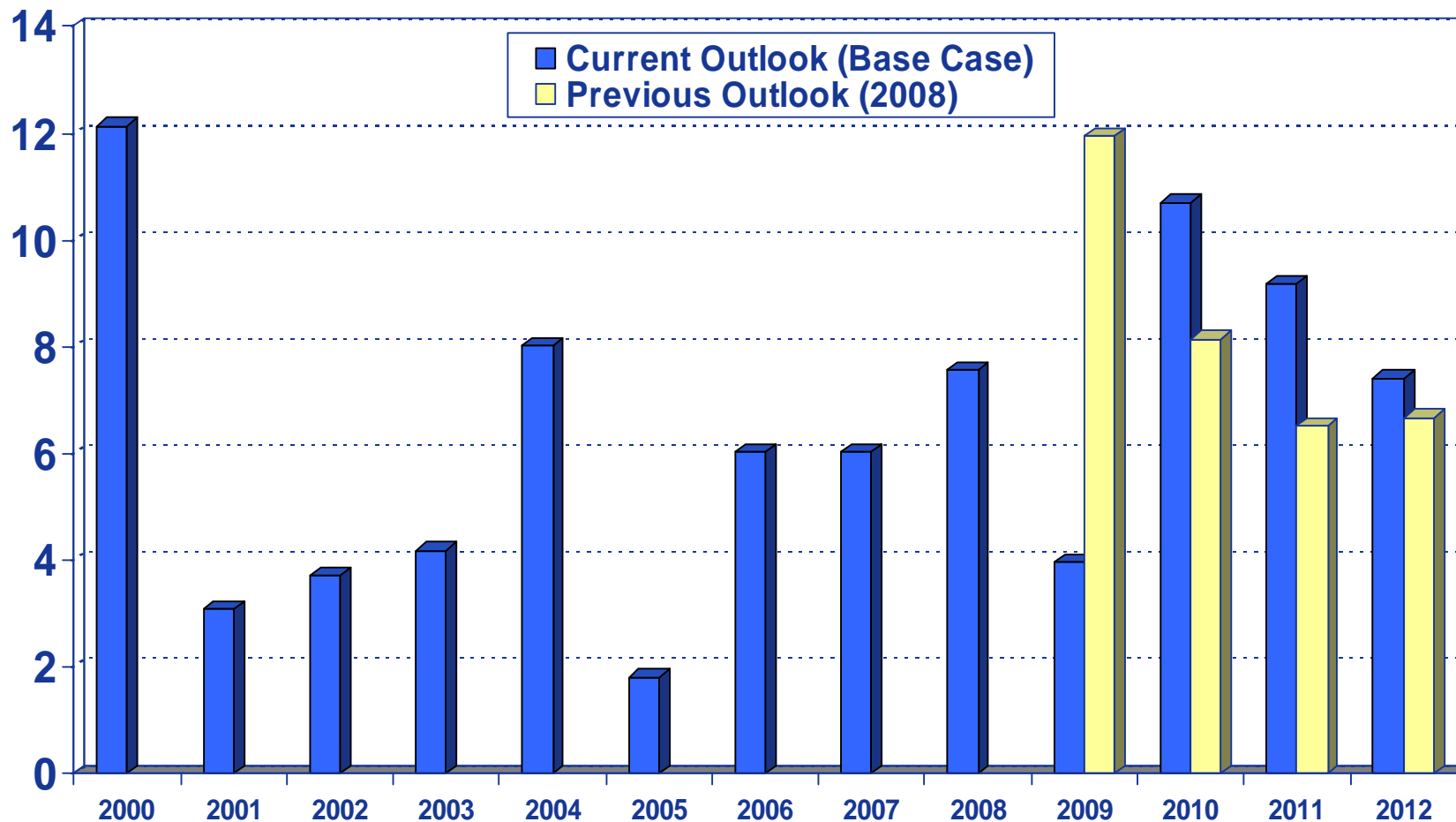
Global LPG production from all supply sources stalled in 2009



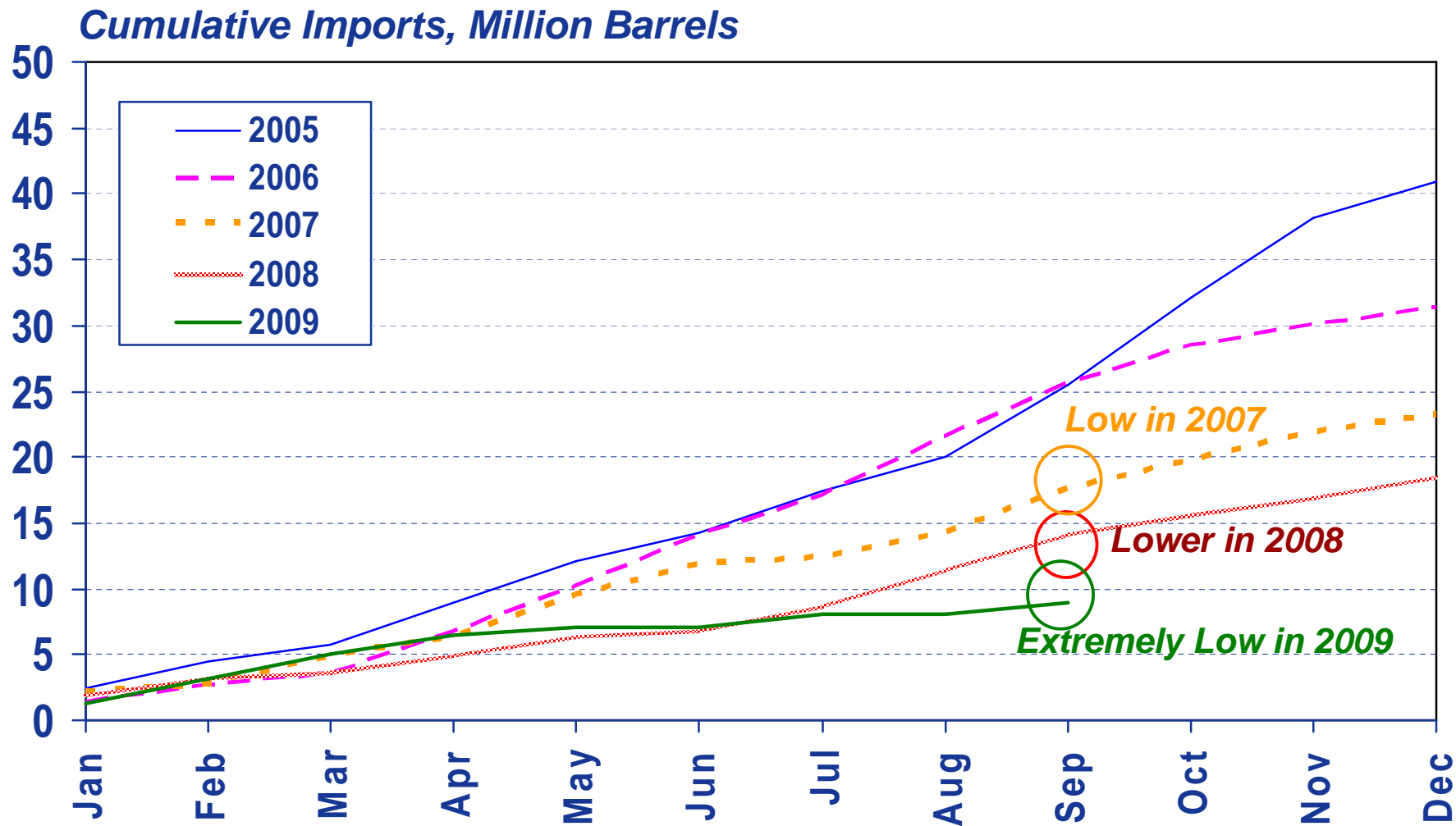
- Ø LPG production from refining is declining due to reductions in refinery throughput rates
- Ø LPG production from LNG projects slowed because of project delays
- Ø LPG production from associated gas dropped in 2009 due to OPEC crude oil cut-backs

The global build in LPG supply has been pushed back into 2010 and 2011

Annual Supply Growth, Million Tonnes



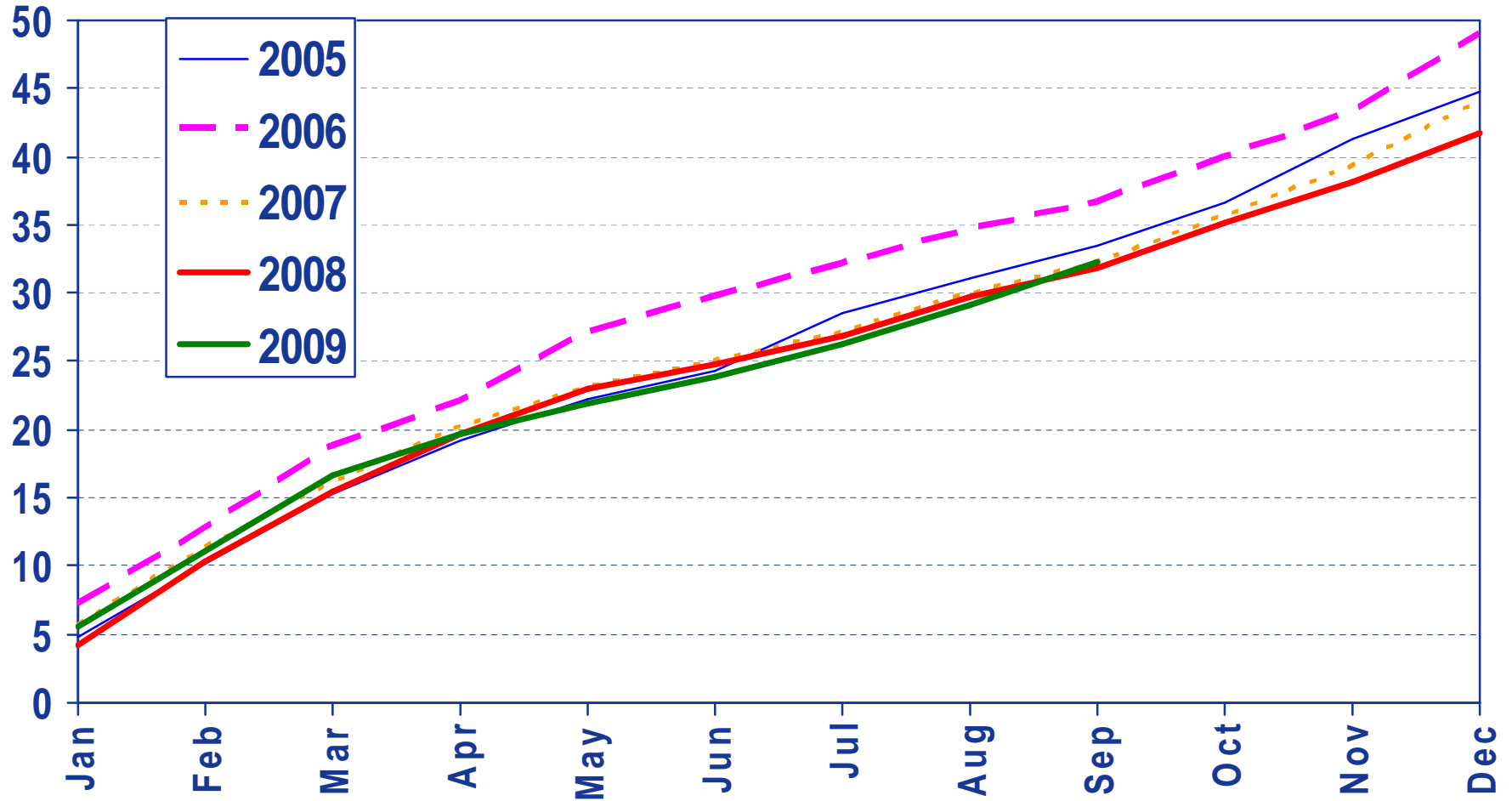
Year-to-date waterborne imports are far, far below average, again



Source: Waterborne Energy

Year-to-date imports from Canada are right on track

Cumulative Imports, Million Barrels



Why are propane inventories so high?

Ø Imports à No:

- Waterborne imports have been extremely low
- Canadian imports are about average

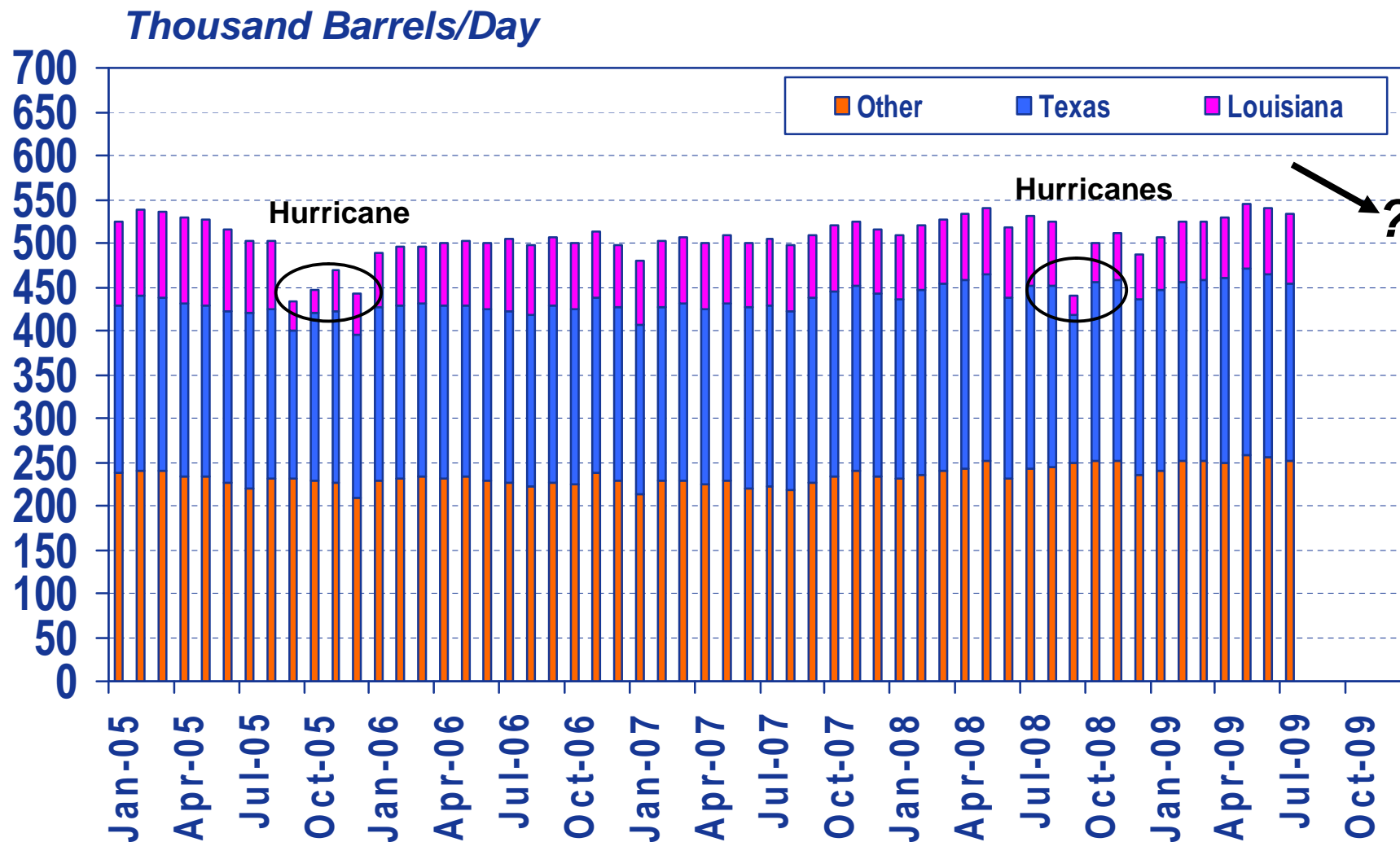
Ø Domestic production:

- Gas processing
- Refinery production

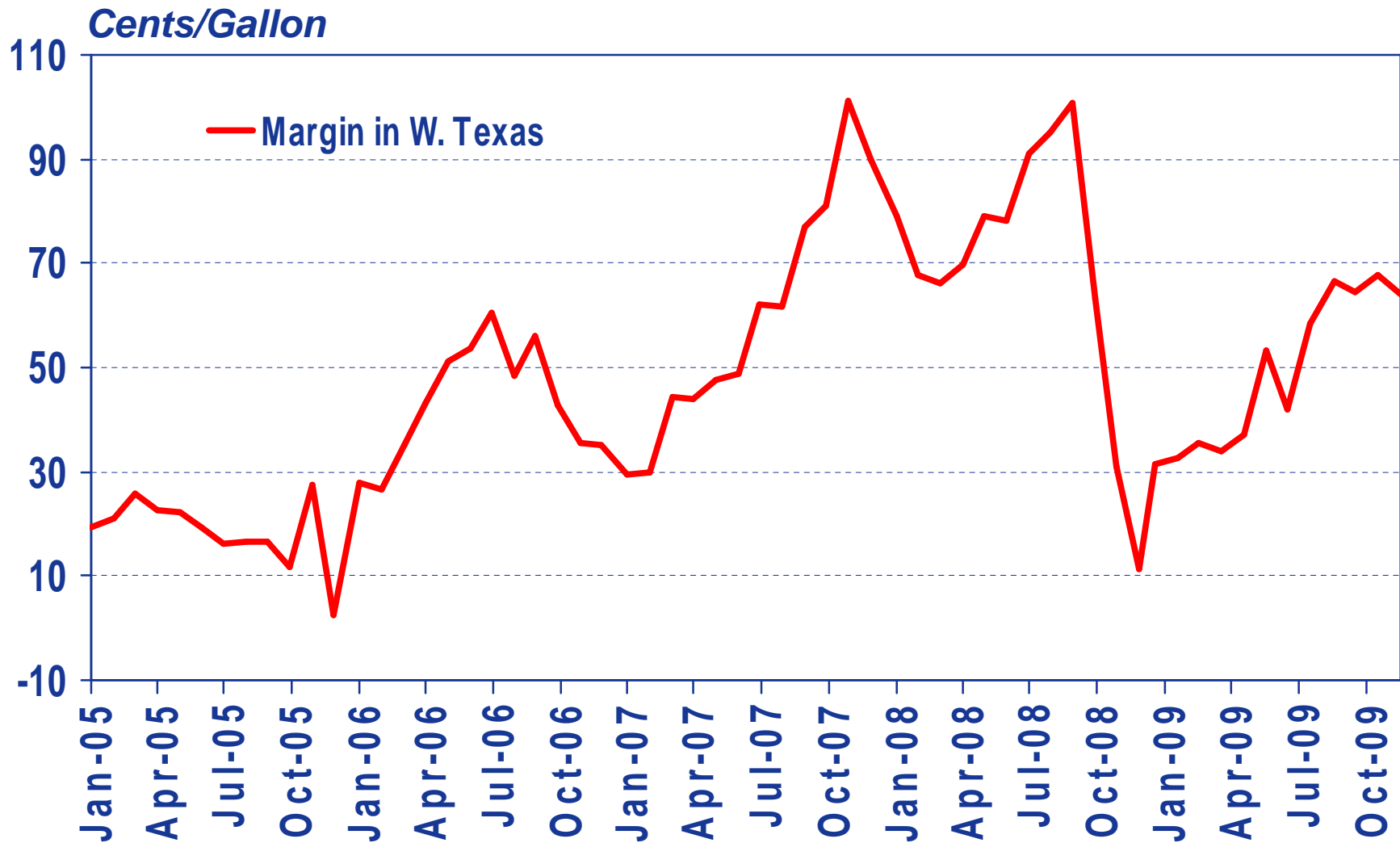
Ø Propane demand:

- Residential/commercial
- Ethylene production

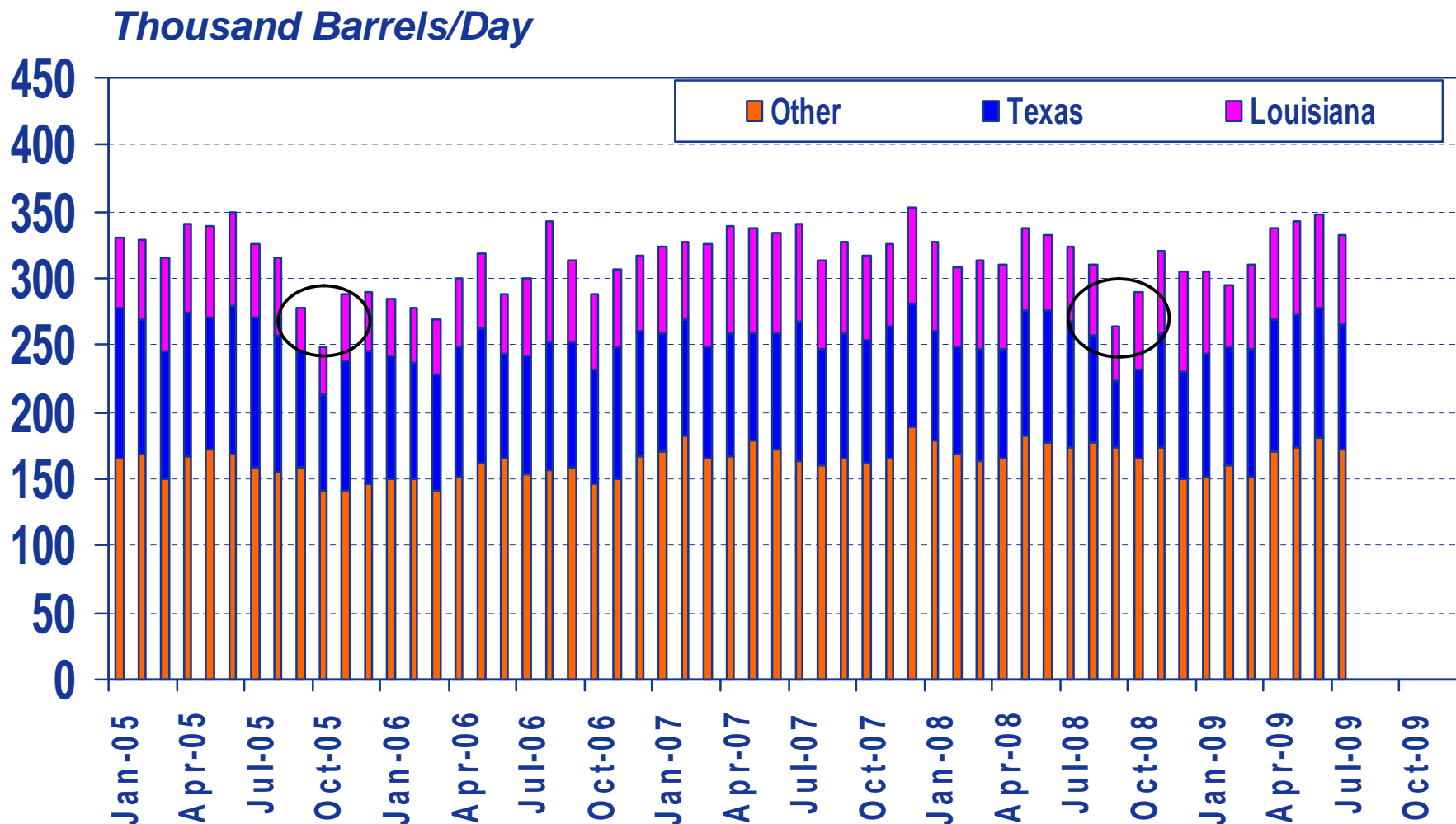
Gas plant production of propane has rebounded, but may decline



Gas processors are probably maximizing propane recovery



Propane production by U.S. refineries has also increased, and should rise further



Why are propane inventories so high?

Ø Imports à No:

- Waterborne imports have been extremely low
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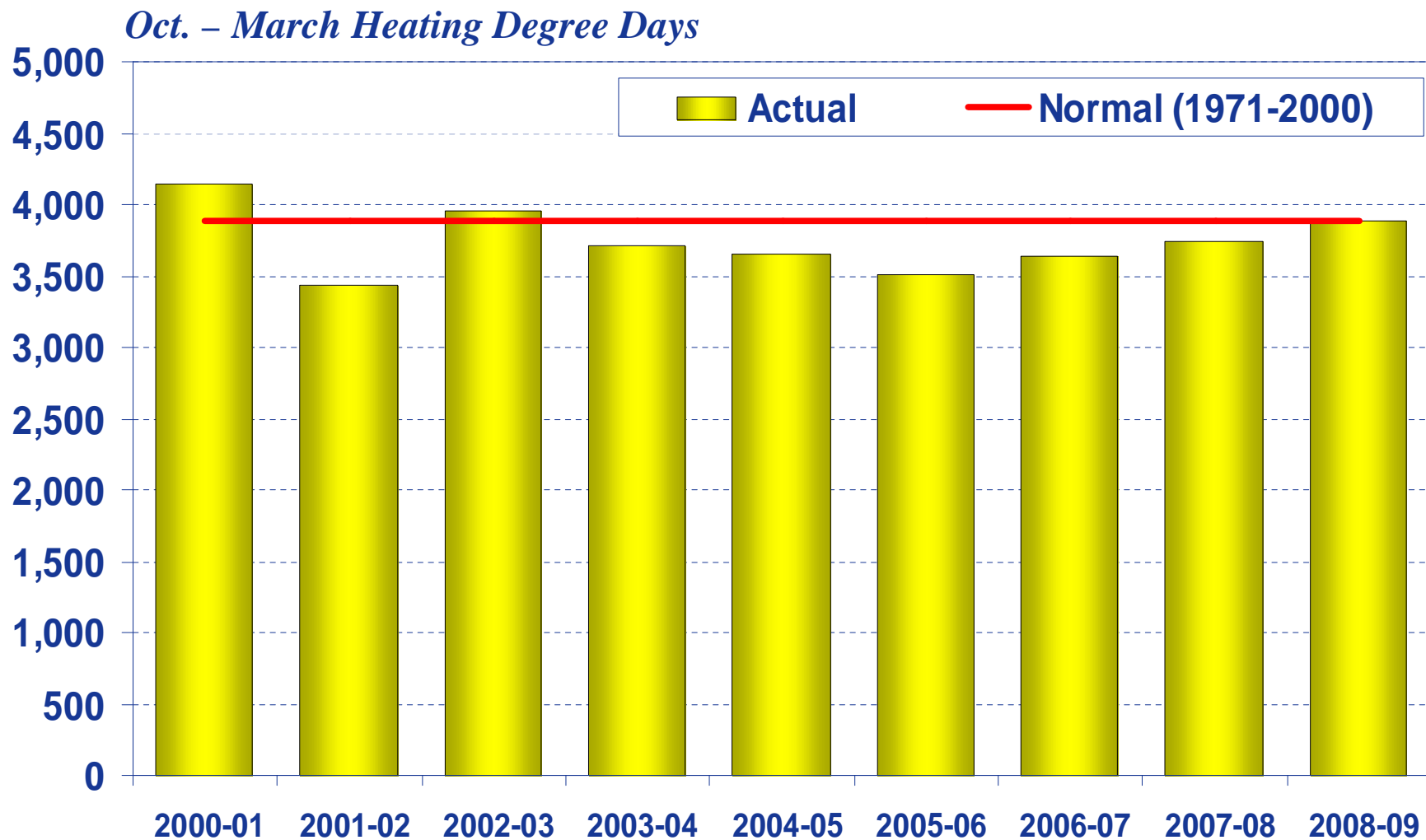
Ø Domestic production à Yes:

- Production from gas processing has rebounded
- Production from refineries has also increased

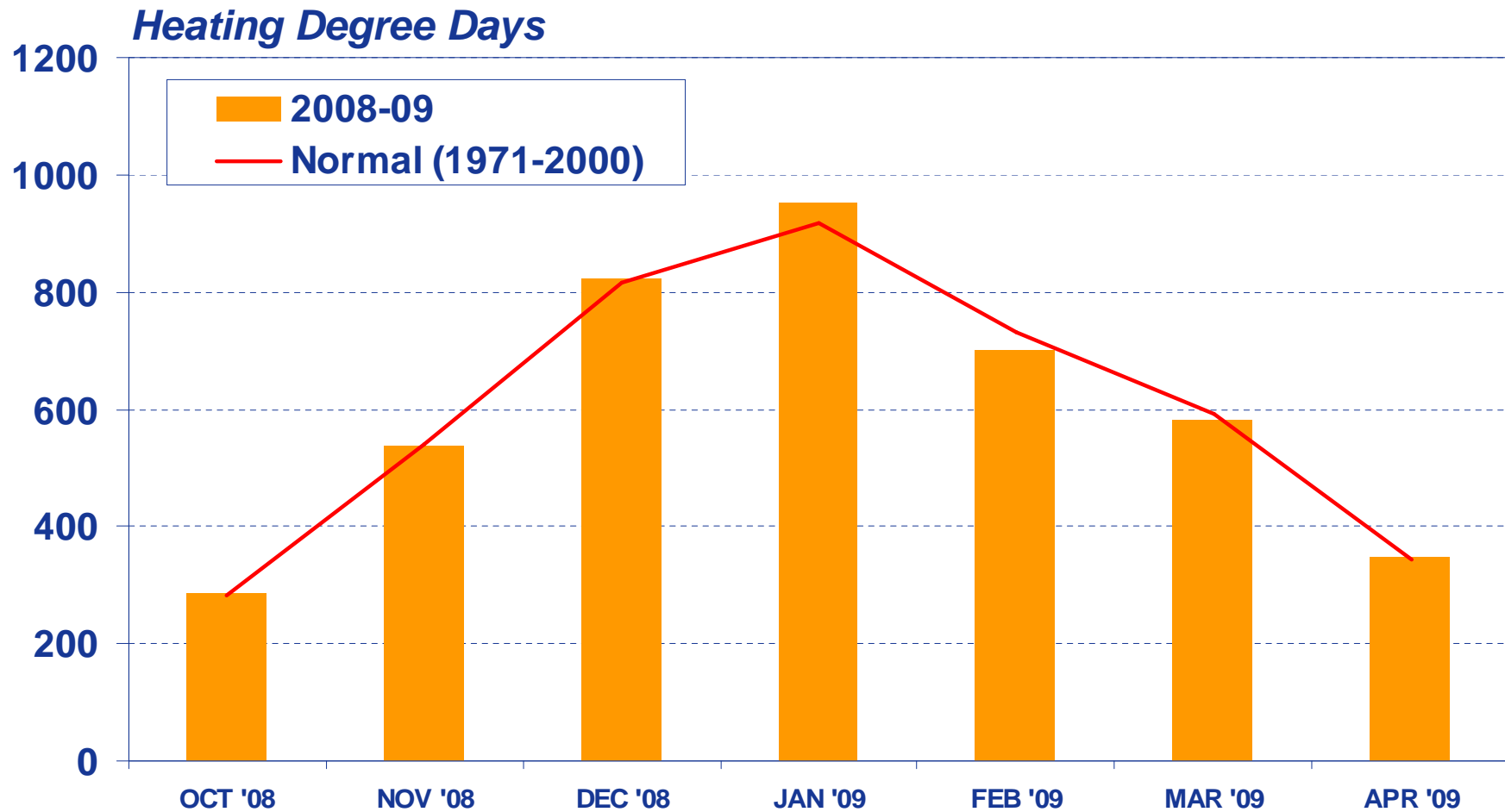
Ø Propane demand:

- Residential/commercial
- Ethylene production
- Exports

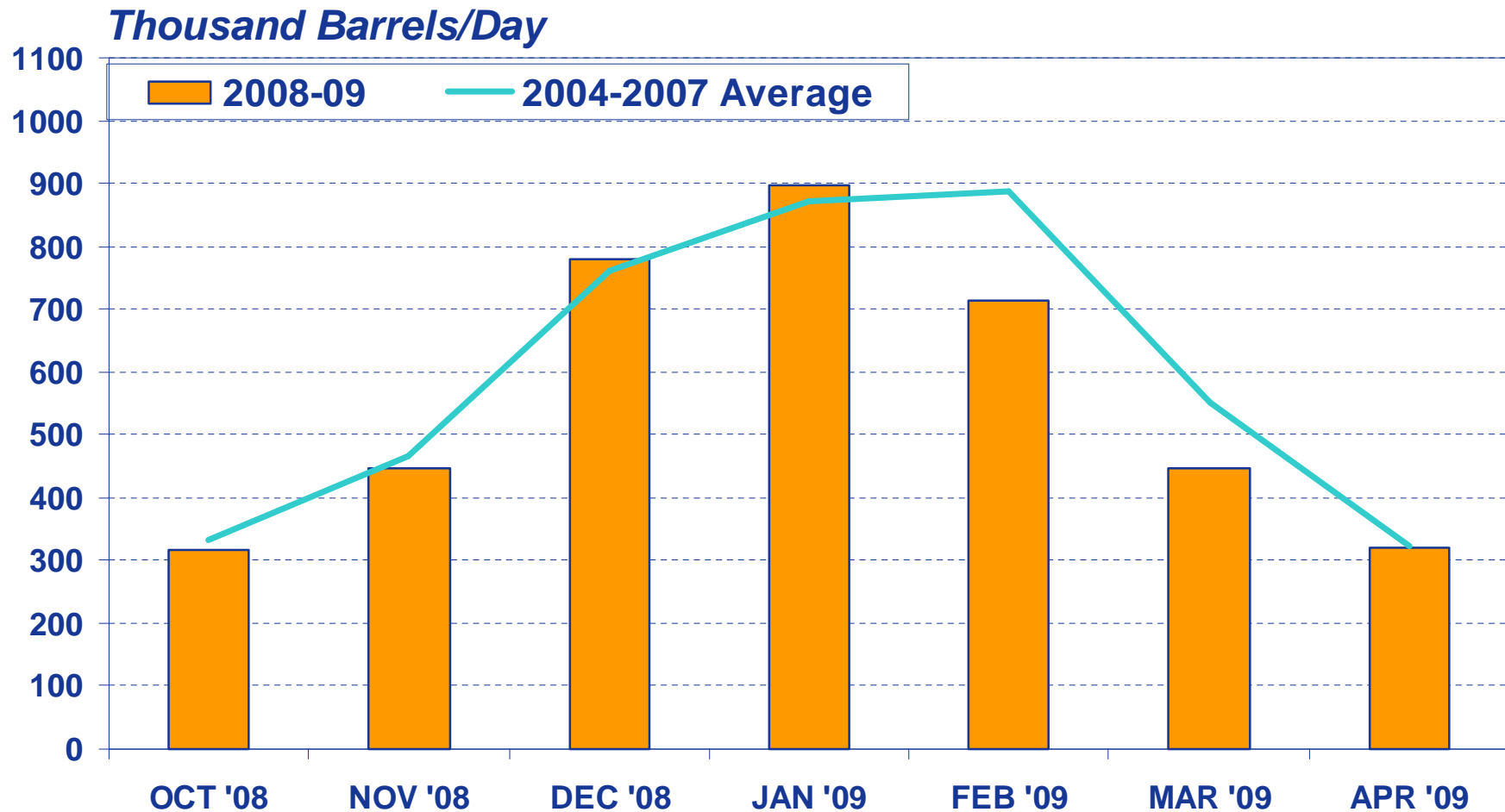
The U.S. had a normal winter after five warm winters



Total National weather was average, or colder, during the first half of last winter

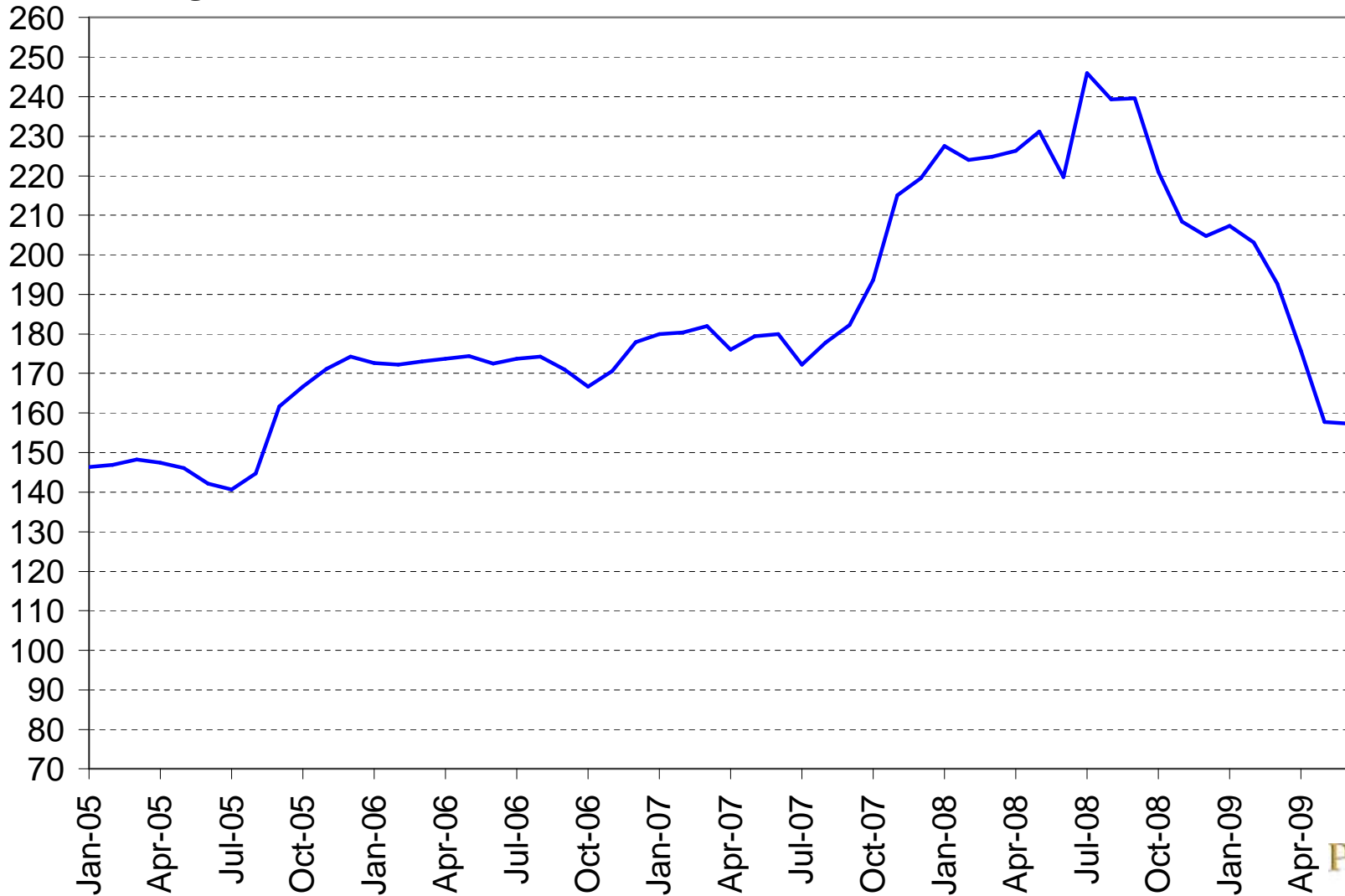


National propane demand for home heating jumped but then plunged

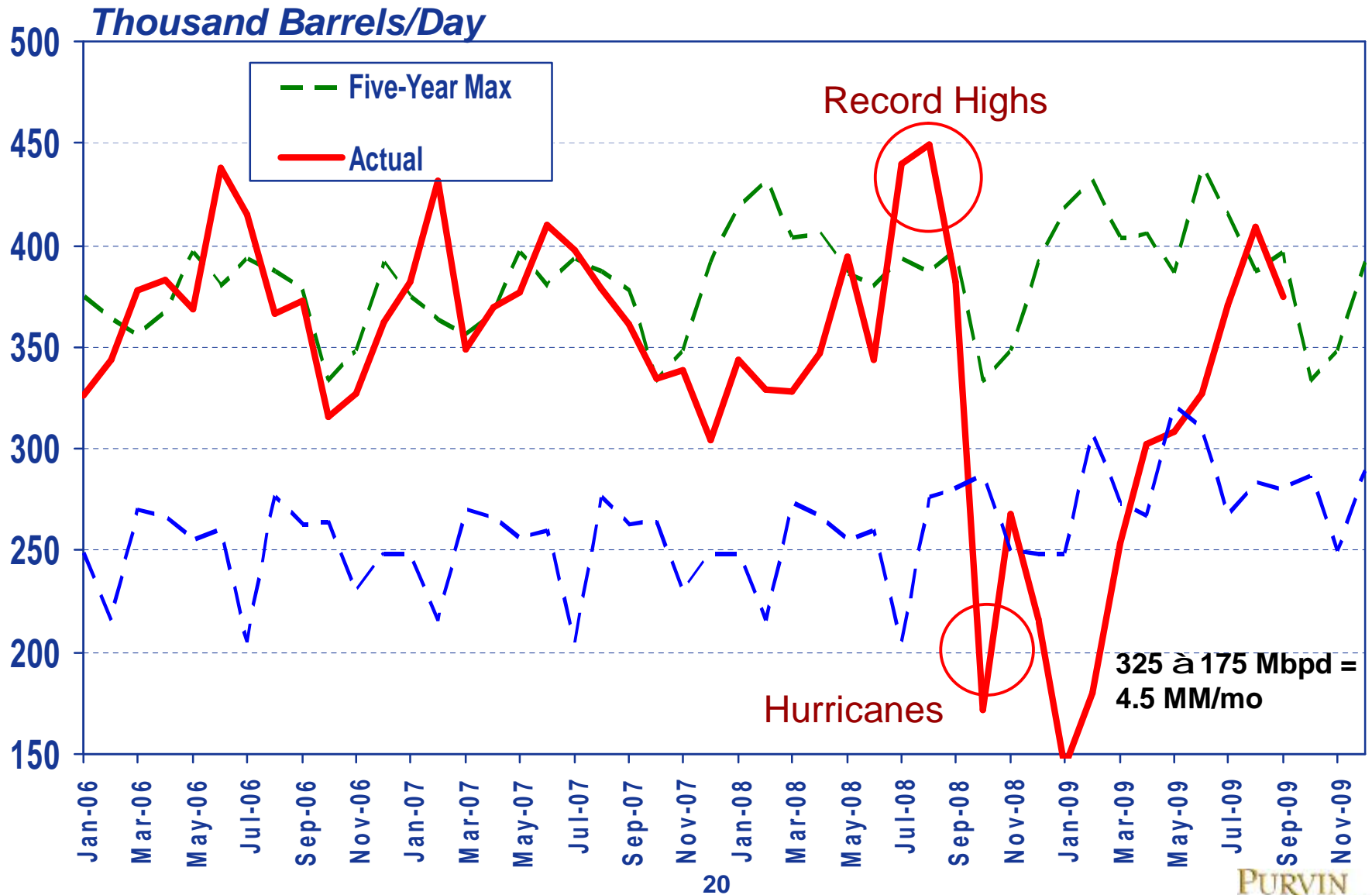


Consumer prices for propane have fallen, but so have consumers' income

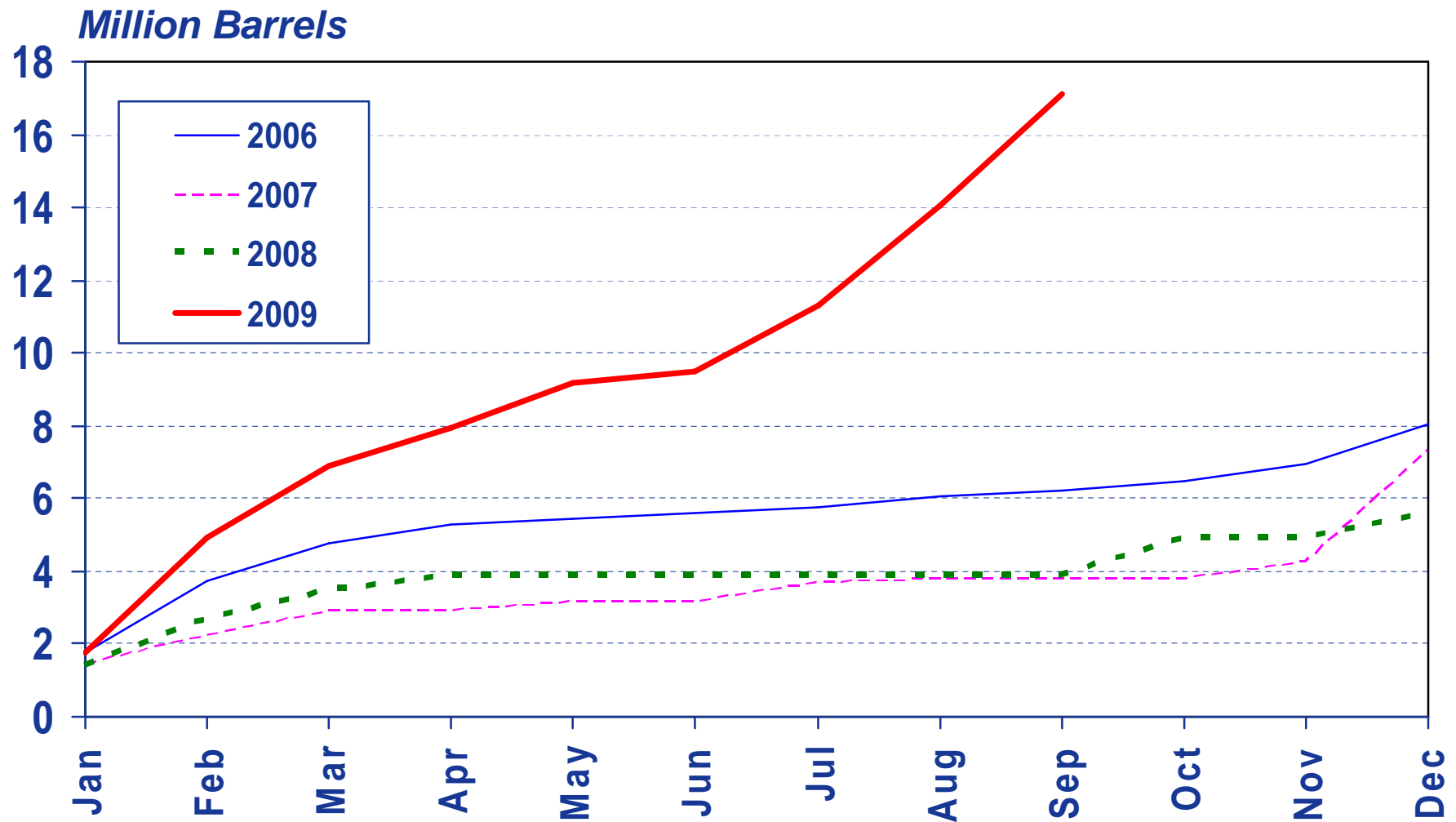
Average Price to End Users, Cents / Gallon



Ethylene plant consumption set record highs in the summer of 2009, and then...



Cumulative waterborne exports of propane from the U.S. soared in 2009



Source: Waterborne Energy

Why are propane inventories so high?

Ø Imports à No:

- Waterborne imports have been extremely low
- Canadian imports are about average

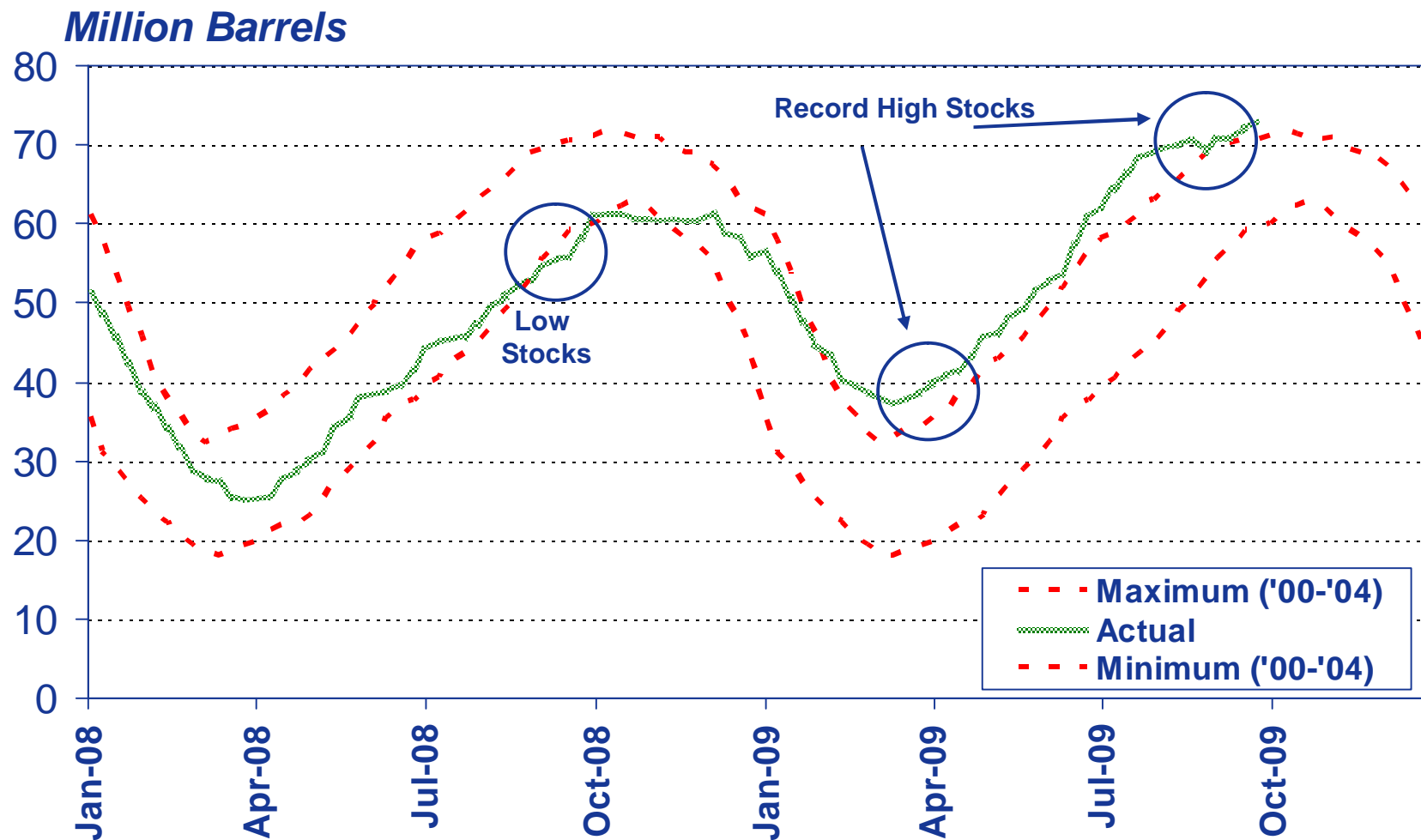
Ø Domestic production à Yes:

- Production from gas processing has increased
- Production from refineries has had to rebound

Ø Propane demand à Yes/No:

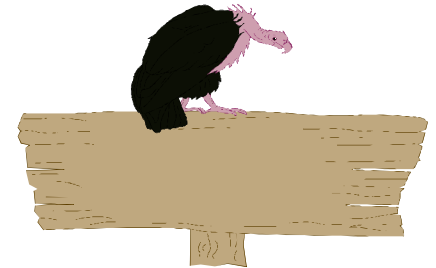
- Residential/commercial has been low
- Ethylene production was extremely low in early 2009
- Waterborne exports have been very high this year

Now we understand why we're "swimming in the stuff"



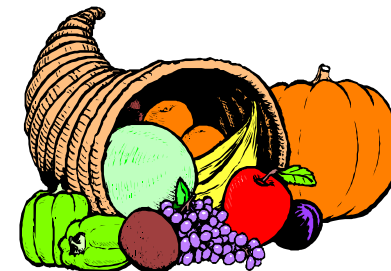
What about the upcoming winter?

Total propane stocks in the U.S. have gone from record low levels at the end of 2008



To record highs this fall, but

Regional propane inventories are not uniformly high



What is the outlook for this winter?



Our outlook regarding supply factors that will affect the propane market are:

- Ø **Propane imports will probably not increase appreciably**
 - Ø Crude oil production and refining are recovering only slowly
 - Ø Propane demand will increase in other regions during the winter

- Ø **Domestic production of propane could decline slightly**
 - Ø Natural gas production will likely decline due to less drilling
 - Ø However, gas processing margins should remain very attractive

Our outlook regarding demand factors that will affect the propane market are:

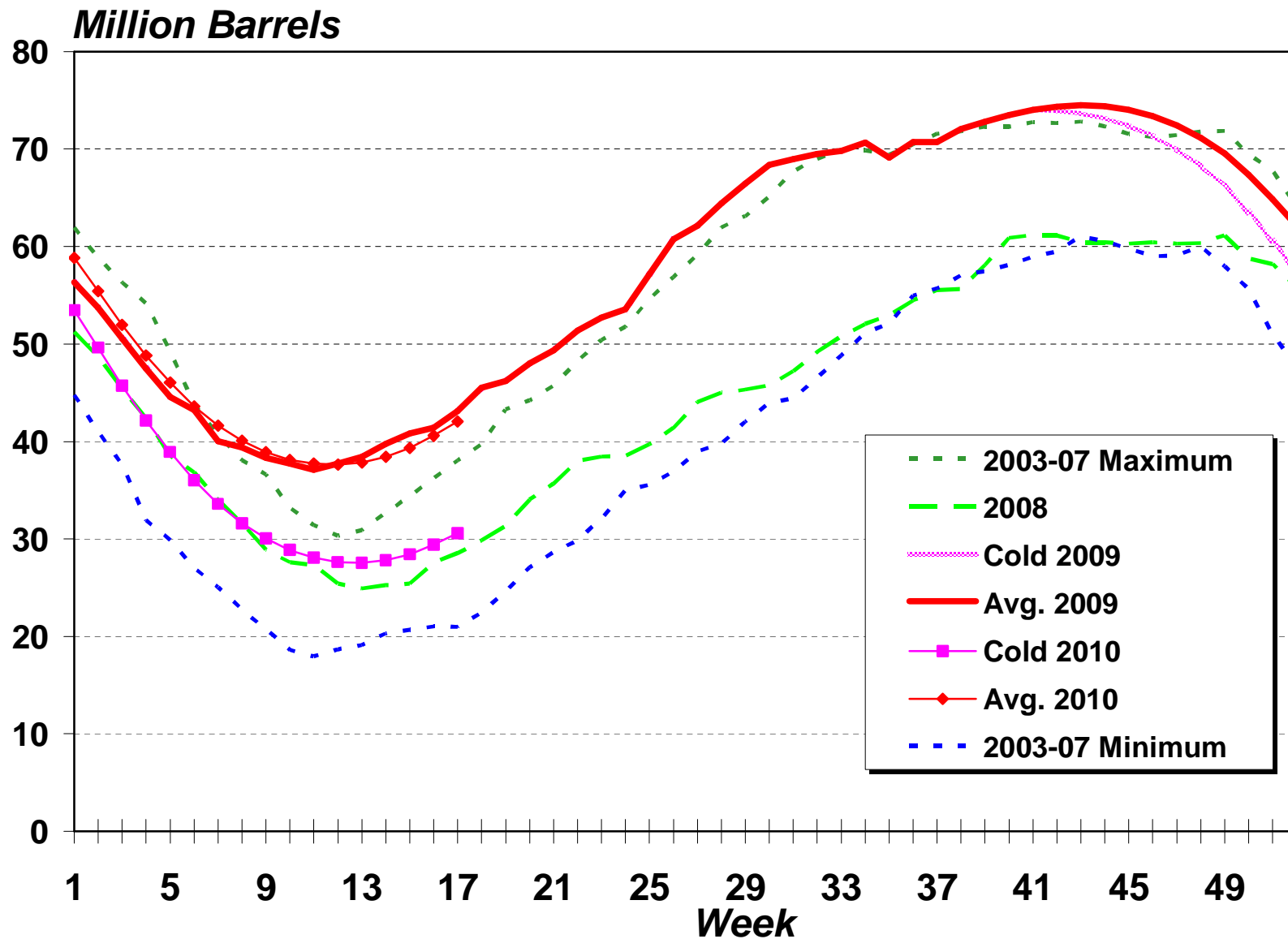
- Ø Ethylene plants in the U.S. will probably not raise propane cracking rates
 - Ø The global economy is recovering only slowly (low demand)
 - Ø New ethylene plants are starting up in the Middle East and Asia

- Ø Propane demand for crop drying could be high
 - Ø Late planting this spring – wetter crops at harvest
 - Ø Large corn crop

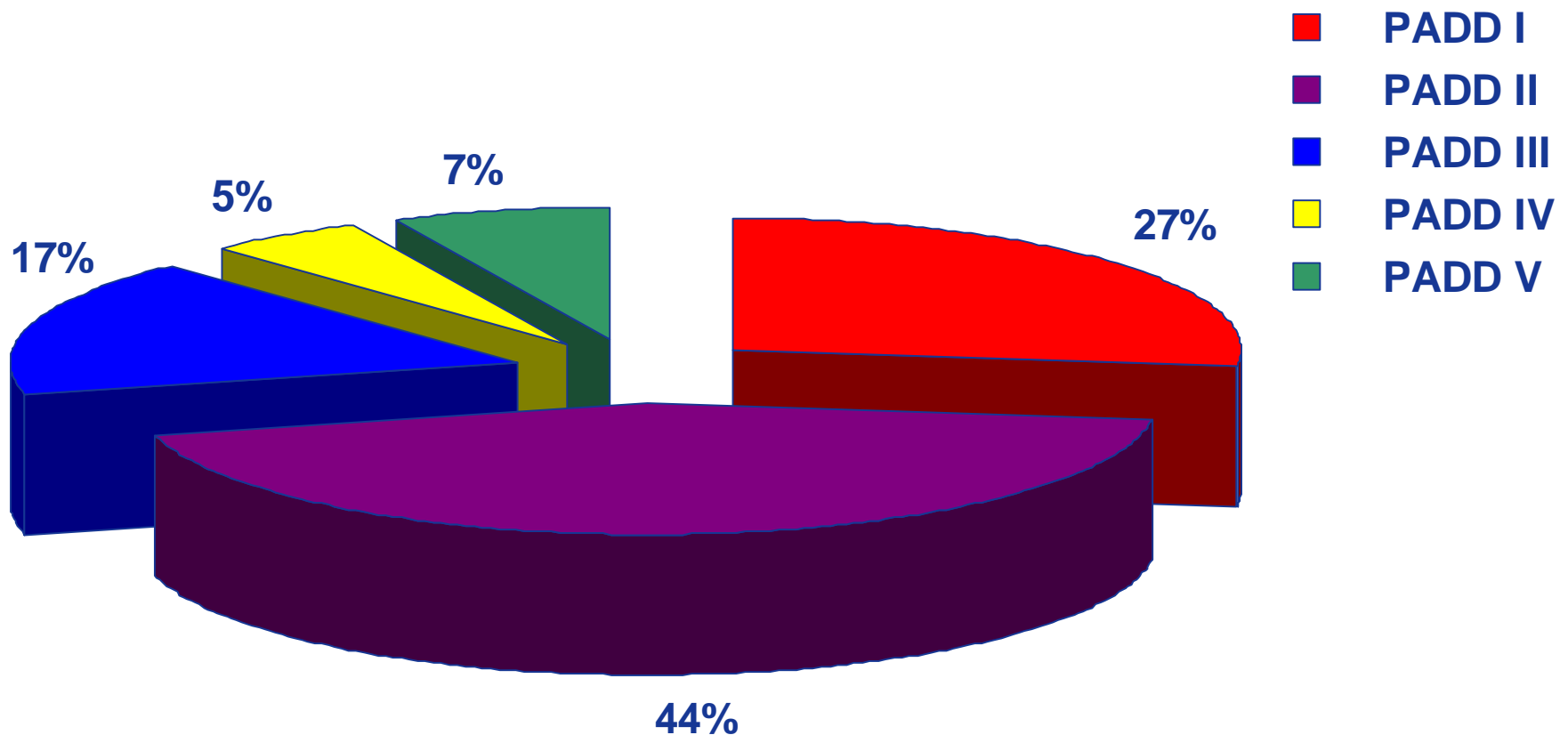
- Ø Propane exports could remain high

- Ø Residential demand for propane will depend on:
 - Ø Consumers' buying power (unemployment versus propane prices)
 - Ø The winter weather – thus we have two forecasts

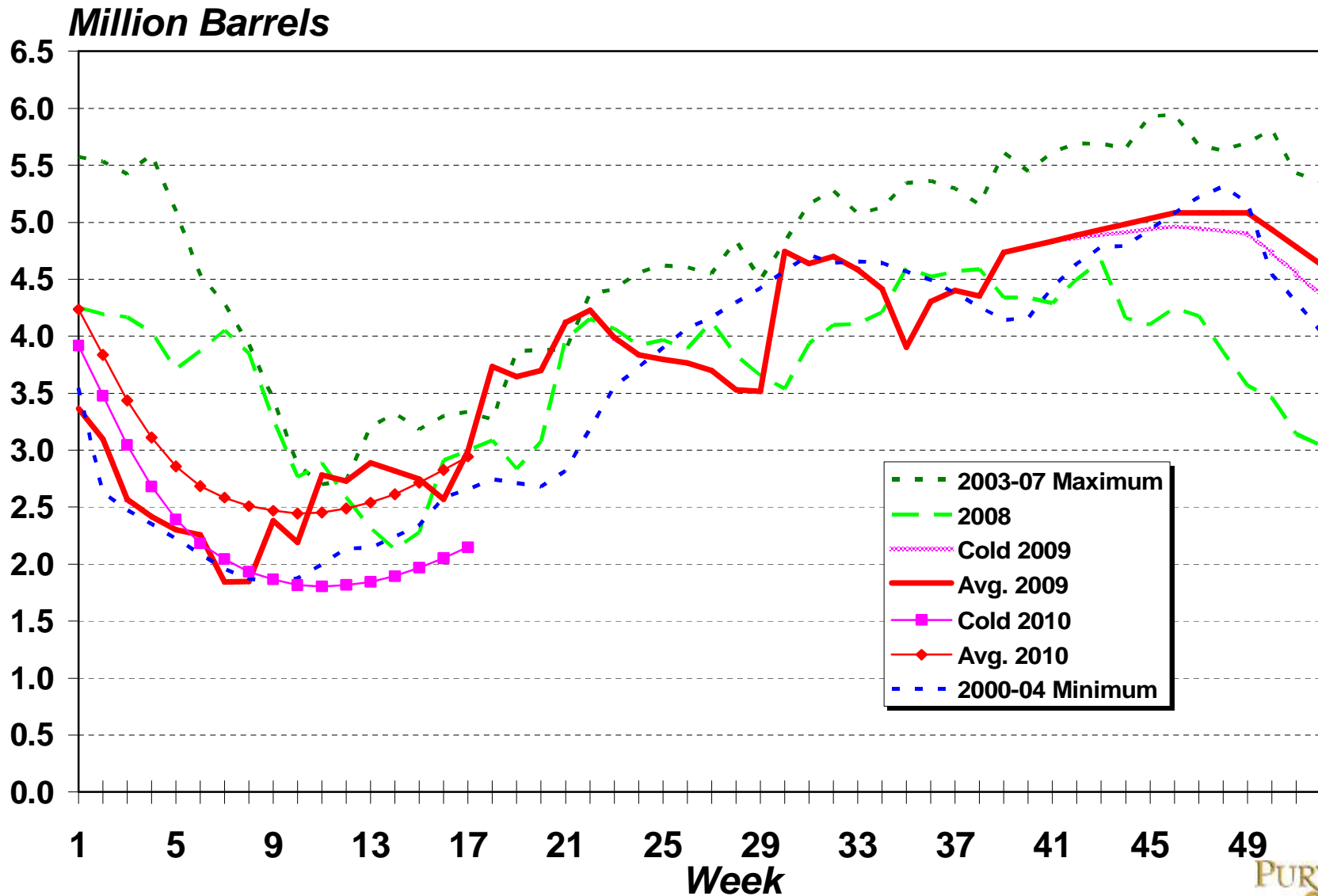
Propane stocks in the total U.S. should remain within the historical range



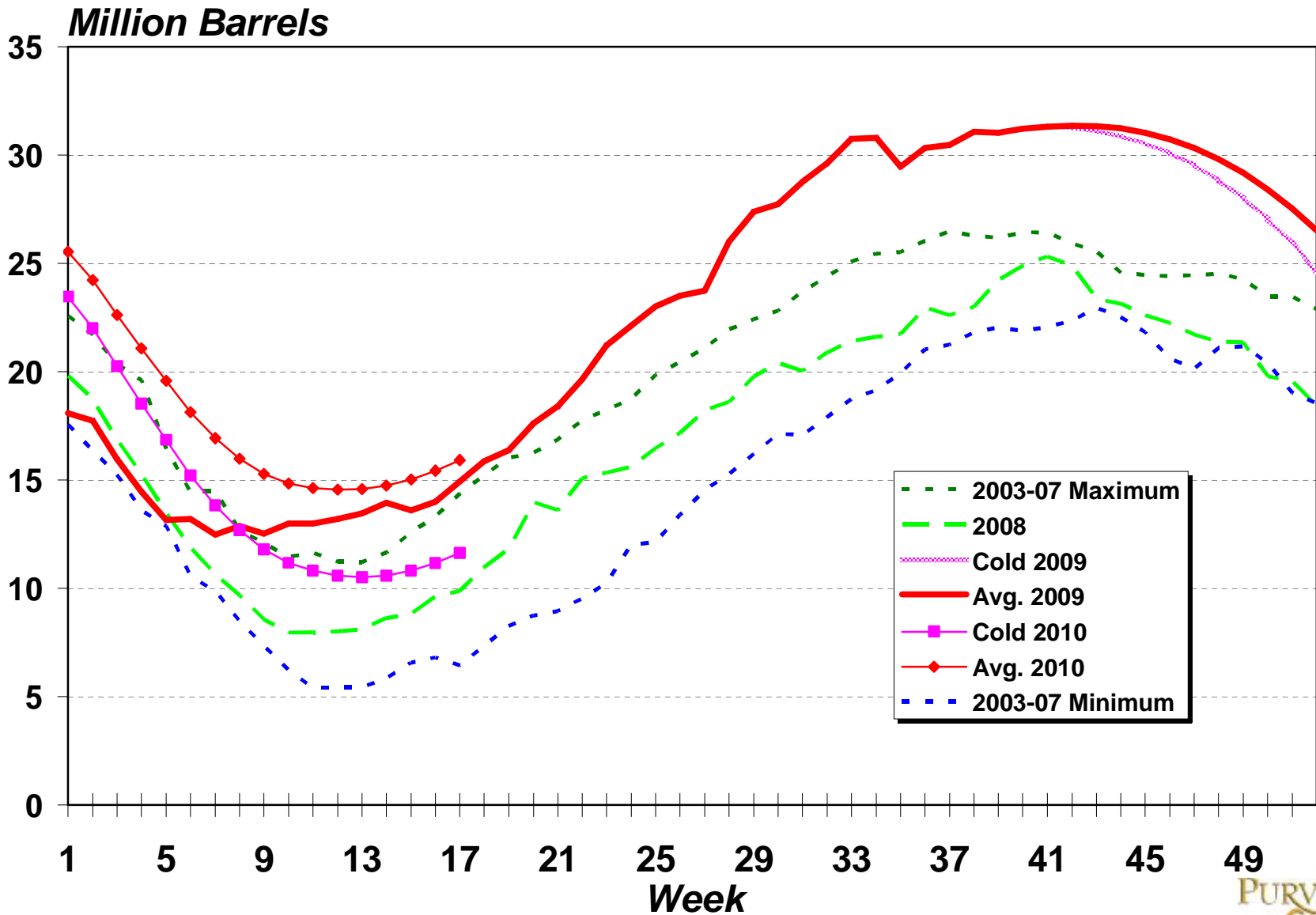
Residential/Commercial propane demand is highest in the Midwest



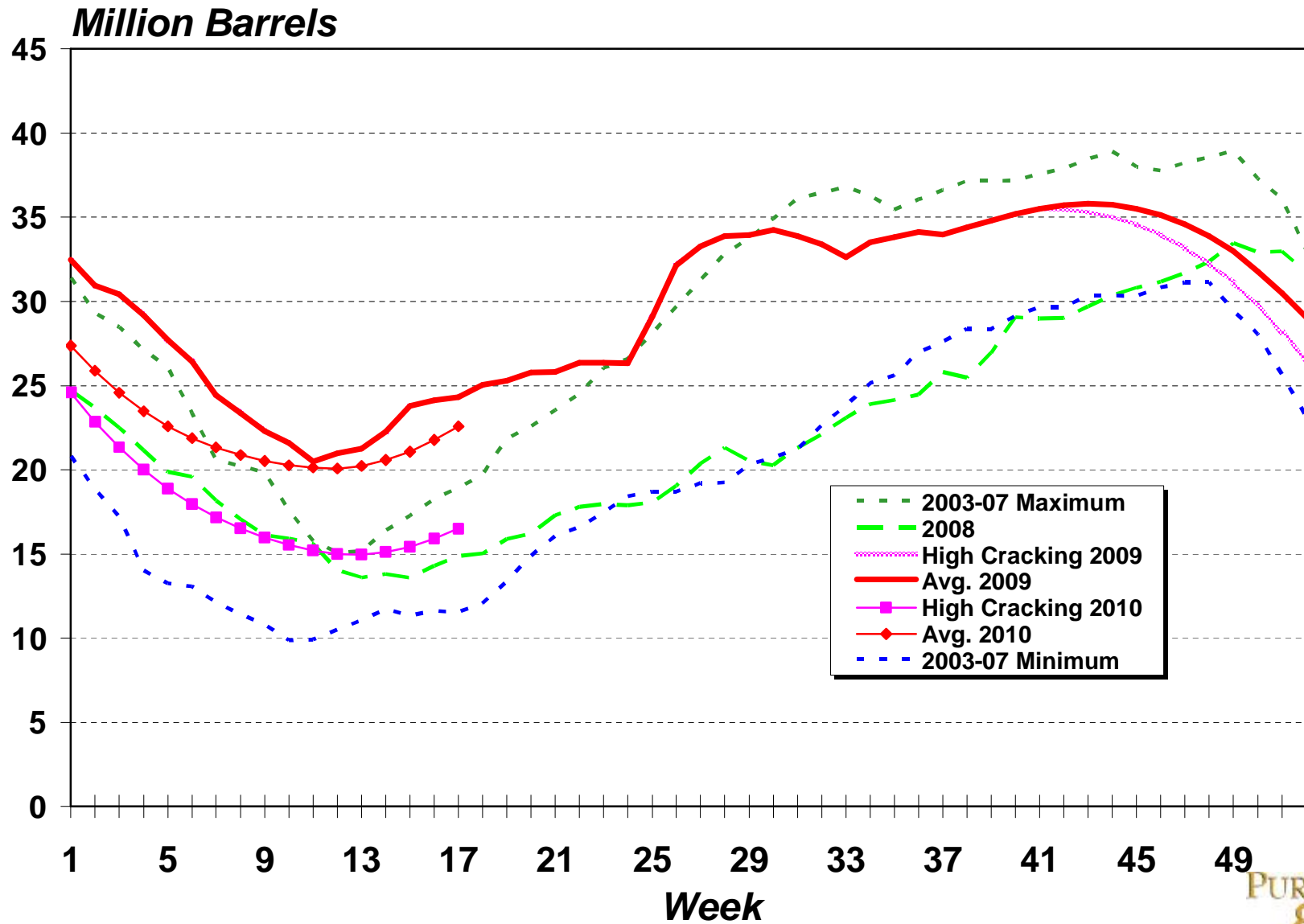
East Coast propane stocks should remain near the middle of the typical range, unless...



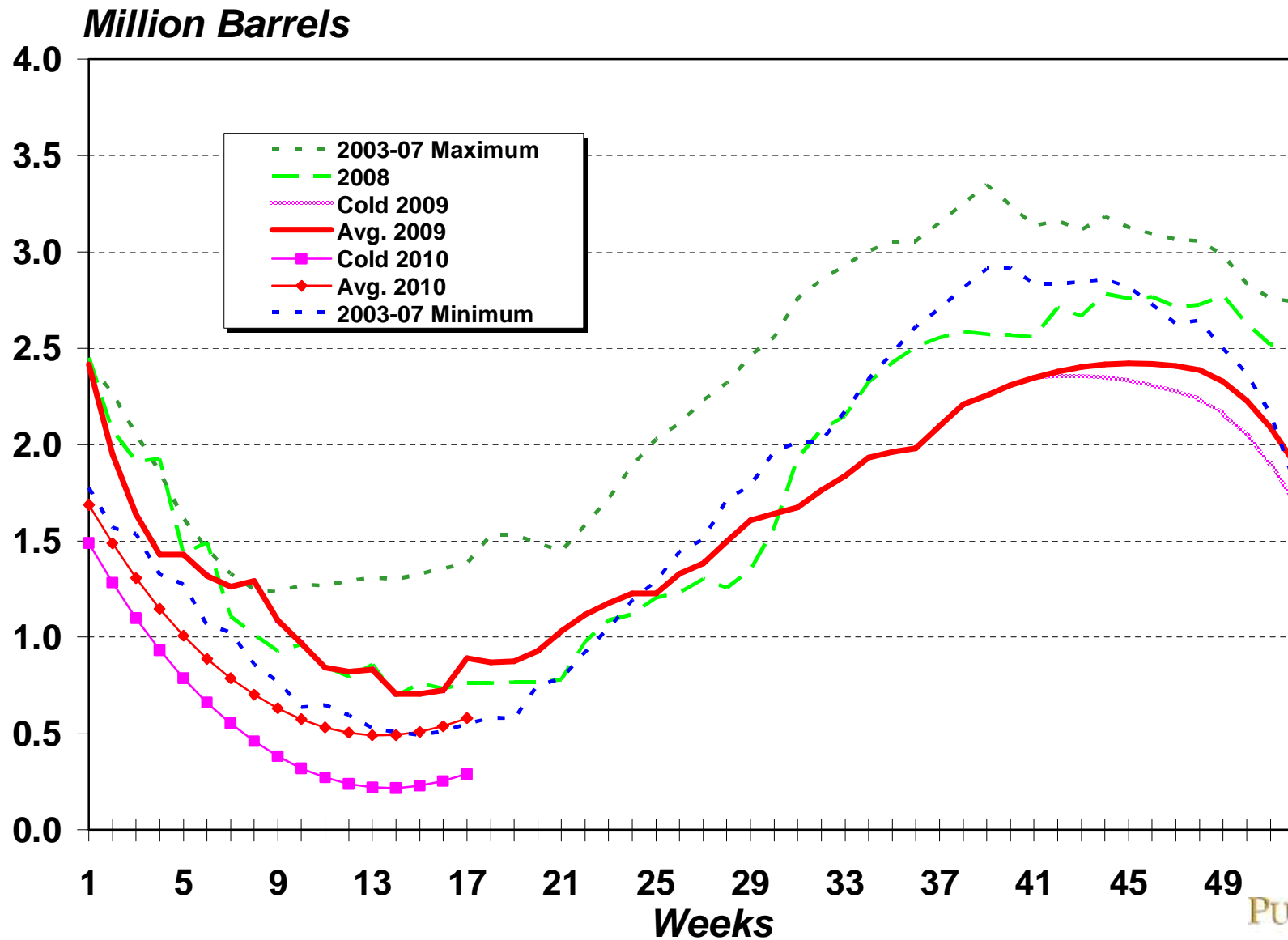
Mid-Continent stocks will probably remain at very high levels



U.S. Gulf Coast propane stocks should remain within the typical range



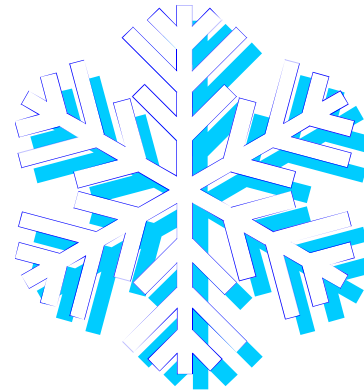
Propane stocks in the western U.S. might need to be replenished from other regions



WATCH THE MARKET

- **Weather**

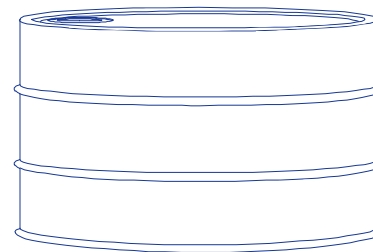
- How cold ?
- Where ?
- How Quickly ?



- **Prices**

- Affect consumers' buying power
- Affect imports/exports

- **Weekly Inventories in EIA's "TWIP" Reports**



Thank you for your attention

Questions ?

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