

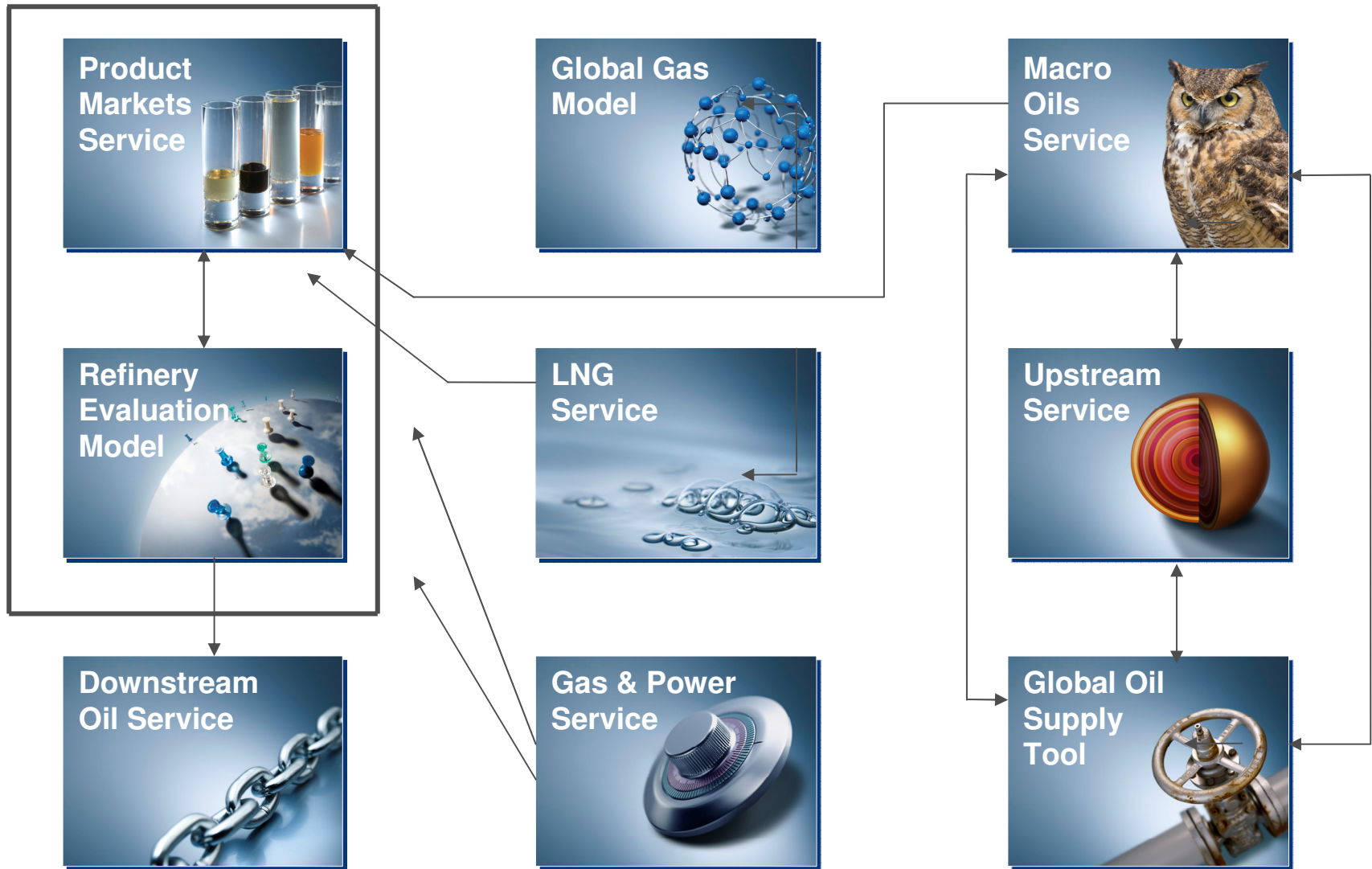
# North America Oil & Gas Market Outlook: Prospects for Recovery

The Houston Economics Club  
Houston, Texas  
May 13, 2010

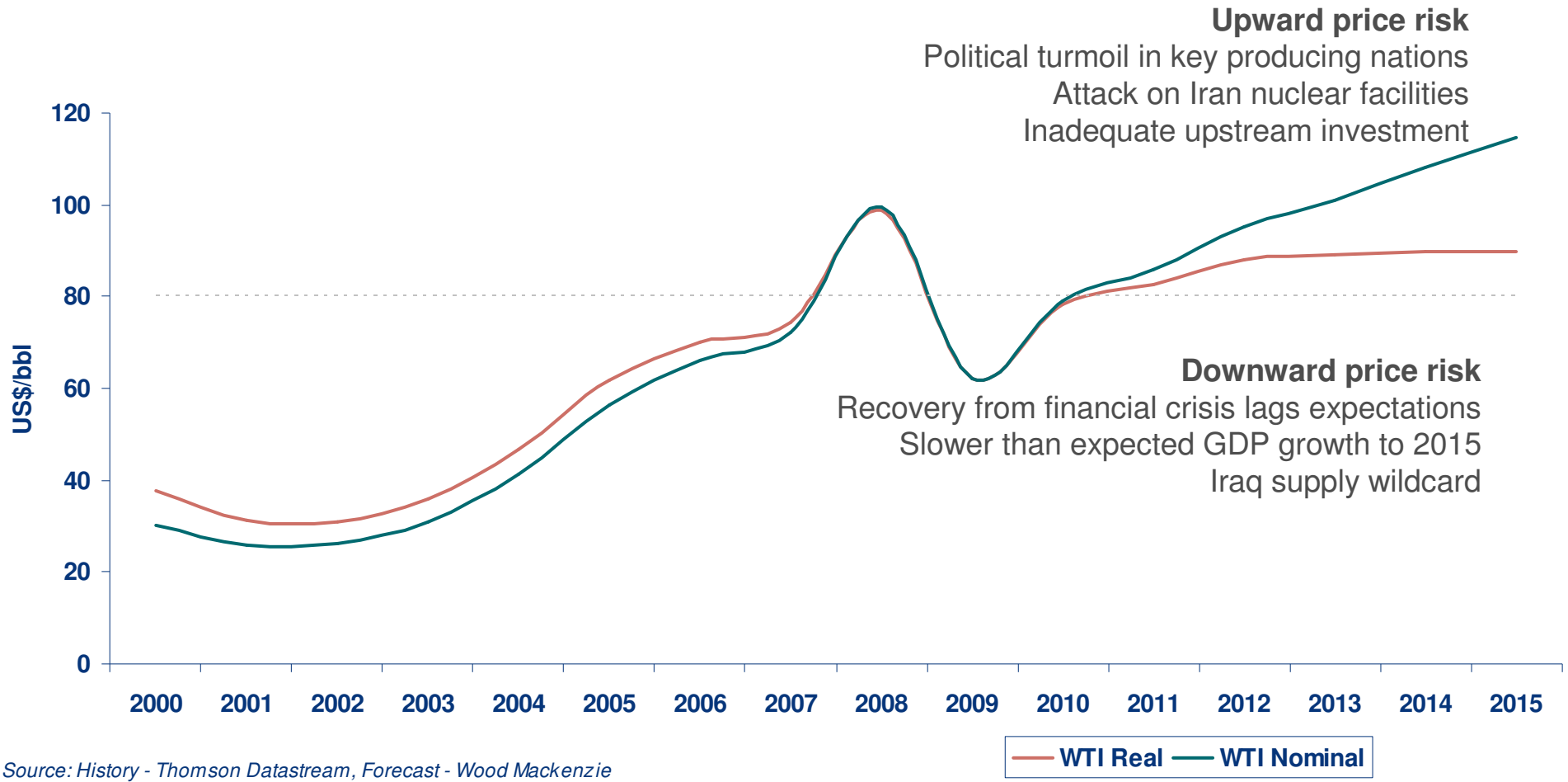
Wood Mackenzie  
energy consulting



# Our integrated research results in internal consistency

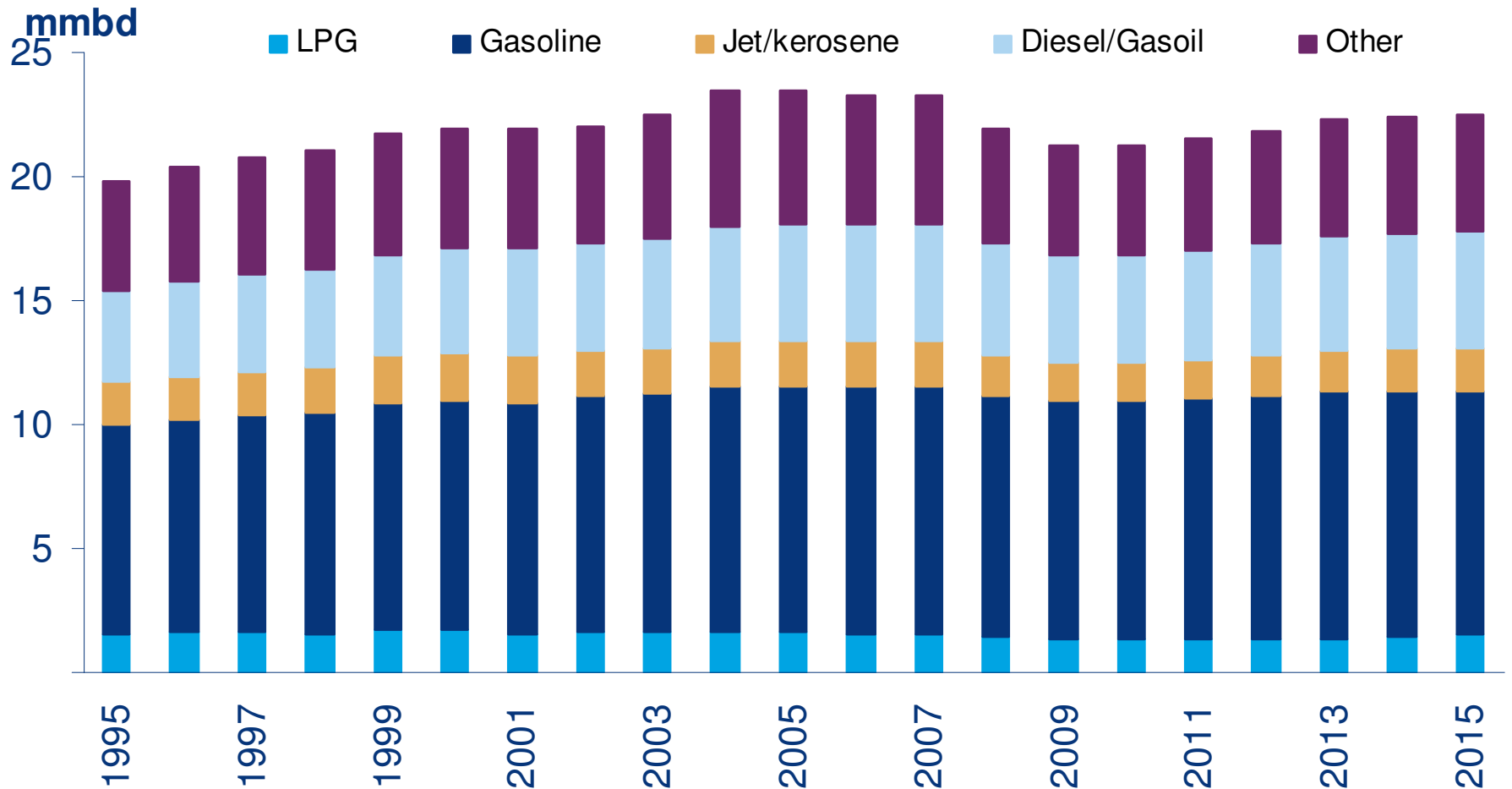


# Beyond 2012 tightening of the supply/demand balance puts upward pressure on prices



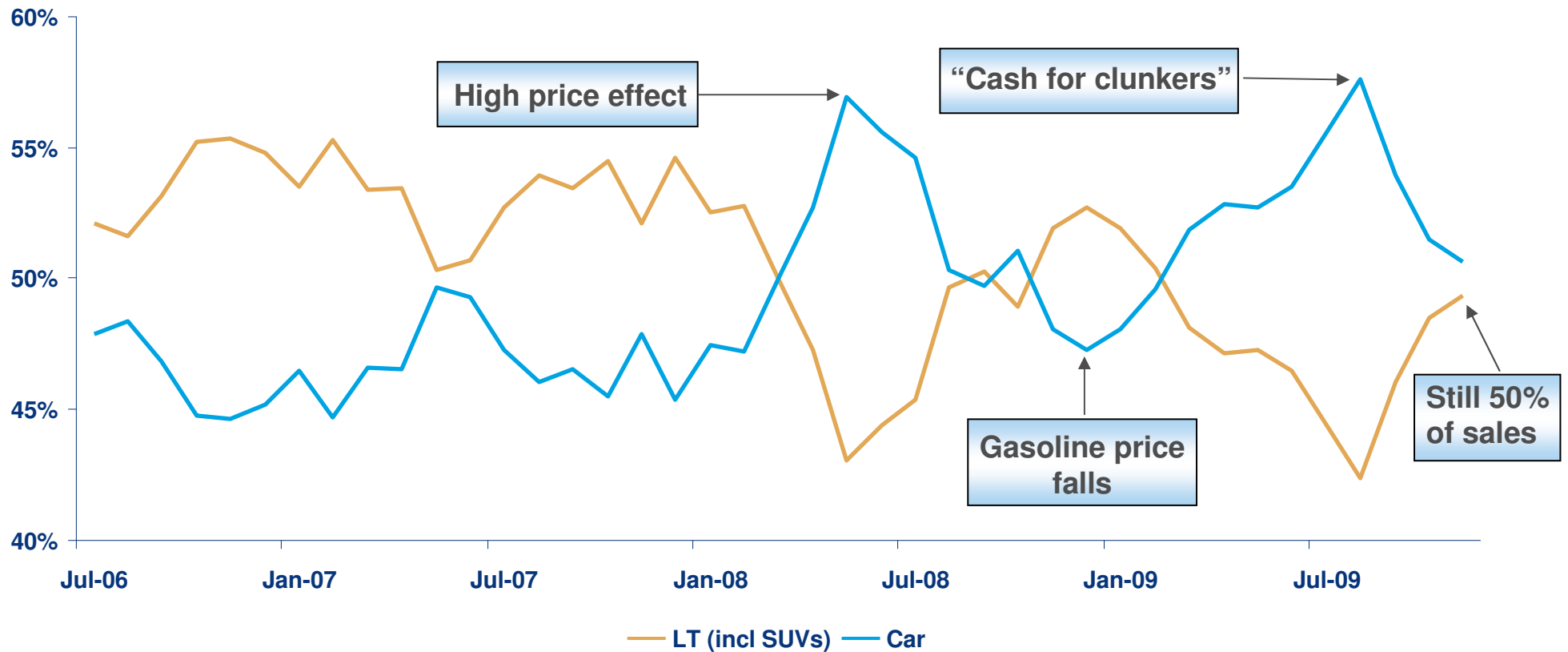
Source: History - Thomson Datastream, Forecast - Wood Mackenzie

# On an absolute basis, North America oil demand peaked in 2005



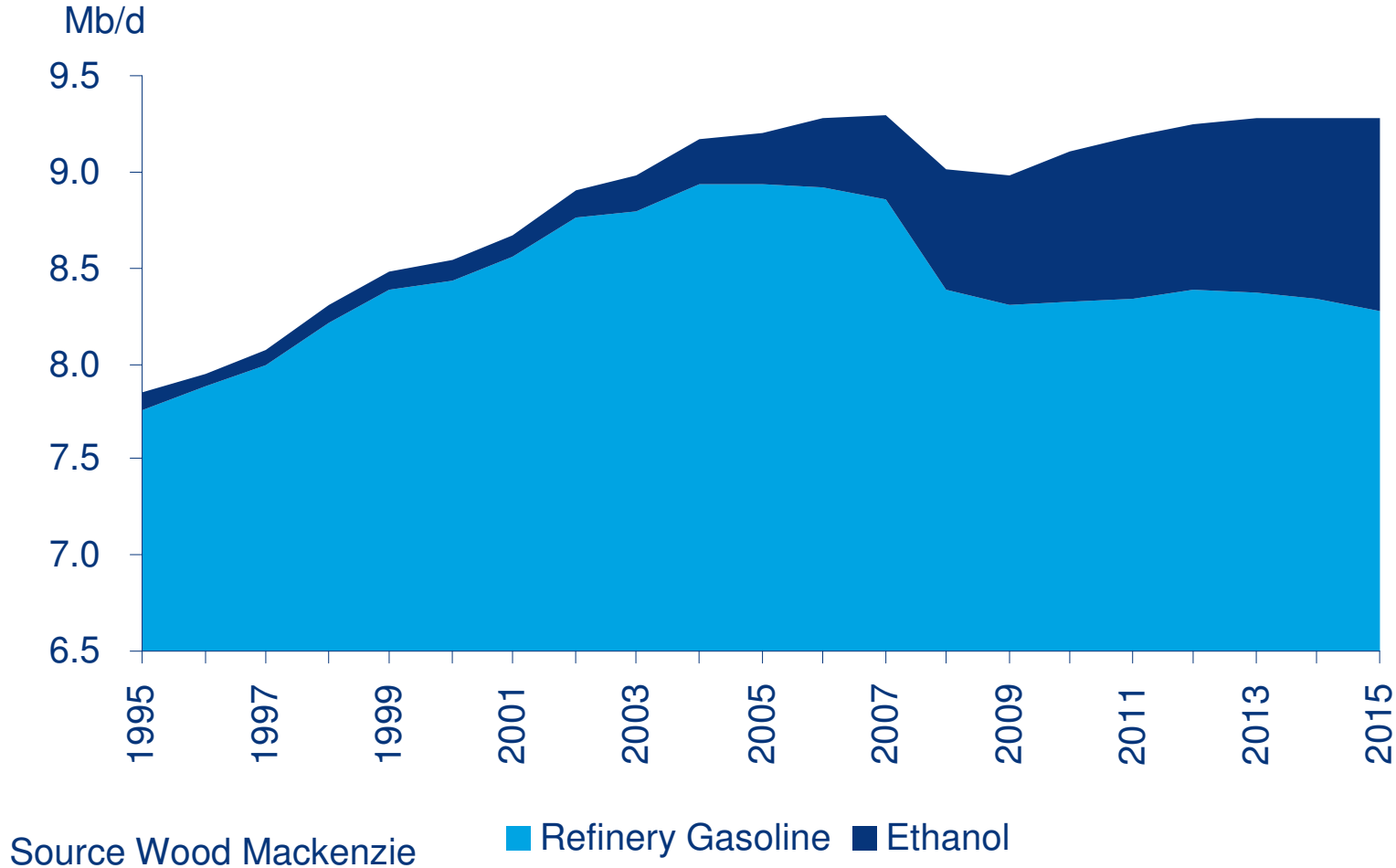
Source: Wood Mackenzie

# Is recent recovery of SUV share of US passenger vehicle percent share of sales sustainable?

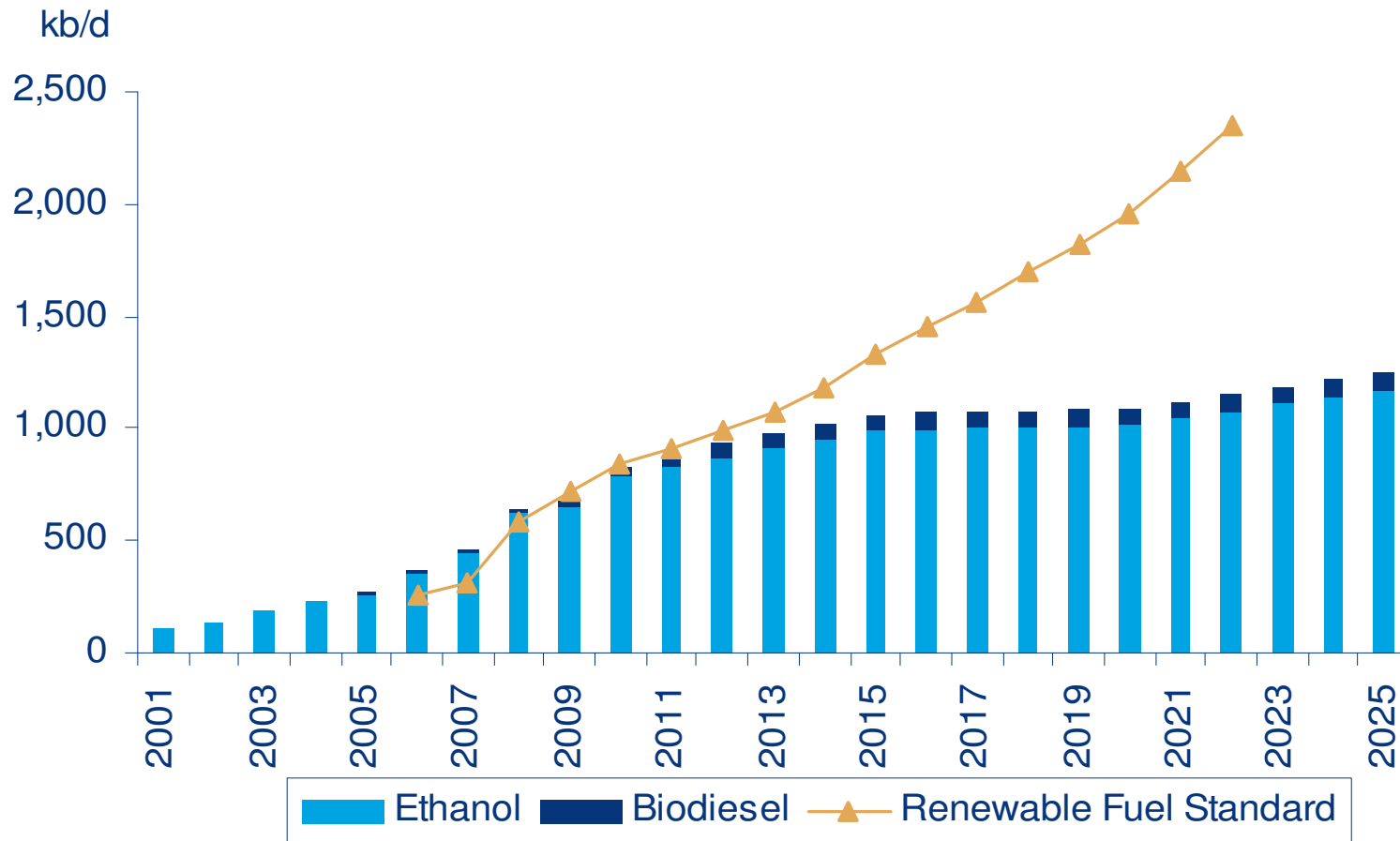


Source: Autodata; EIA

# Gasoline recovery in the US is not an “oil” story, as every drop will be met by increased ethanol consumption

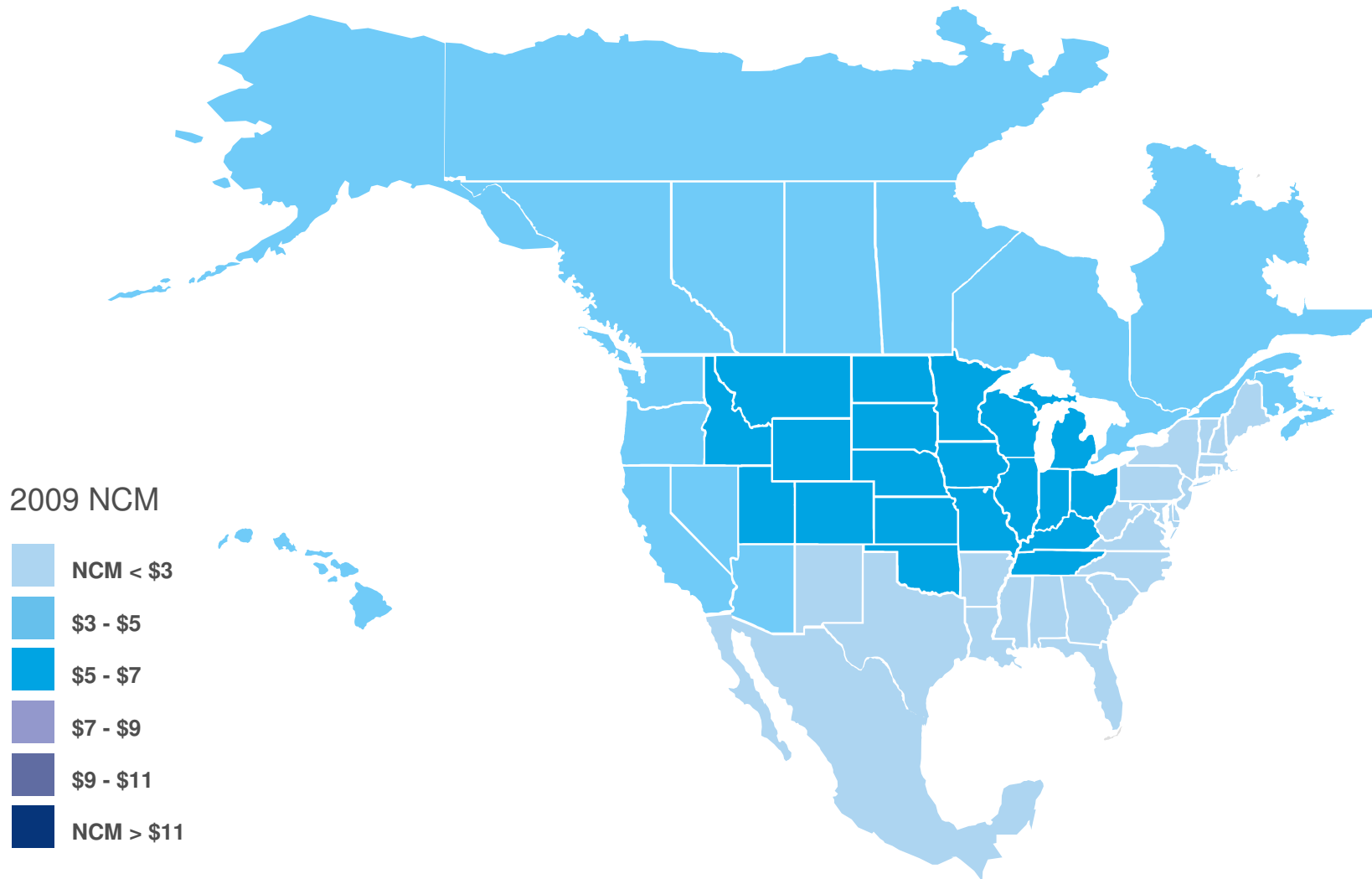


## However, we do not expect the US Renewable Fuel Standard to be met in full

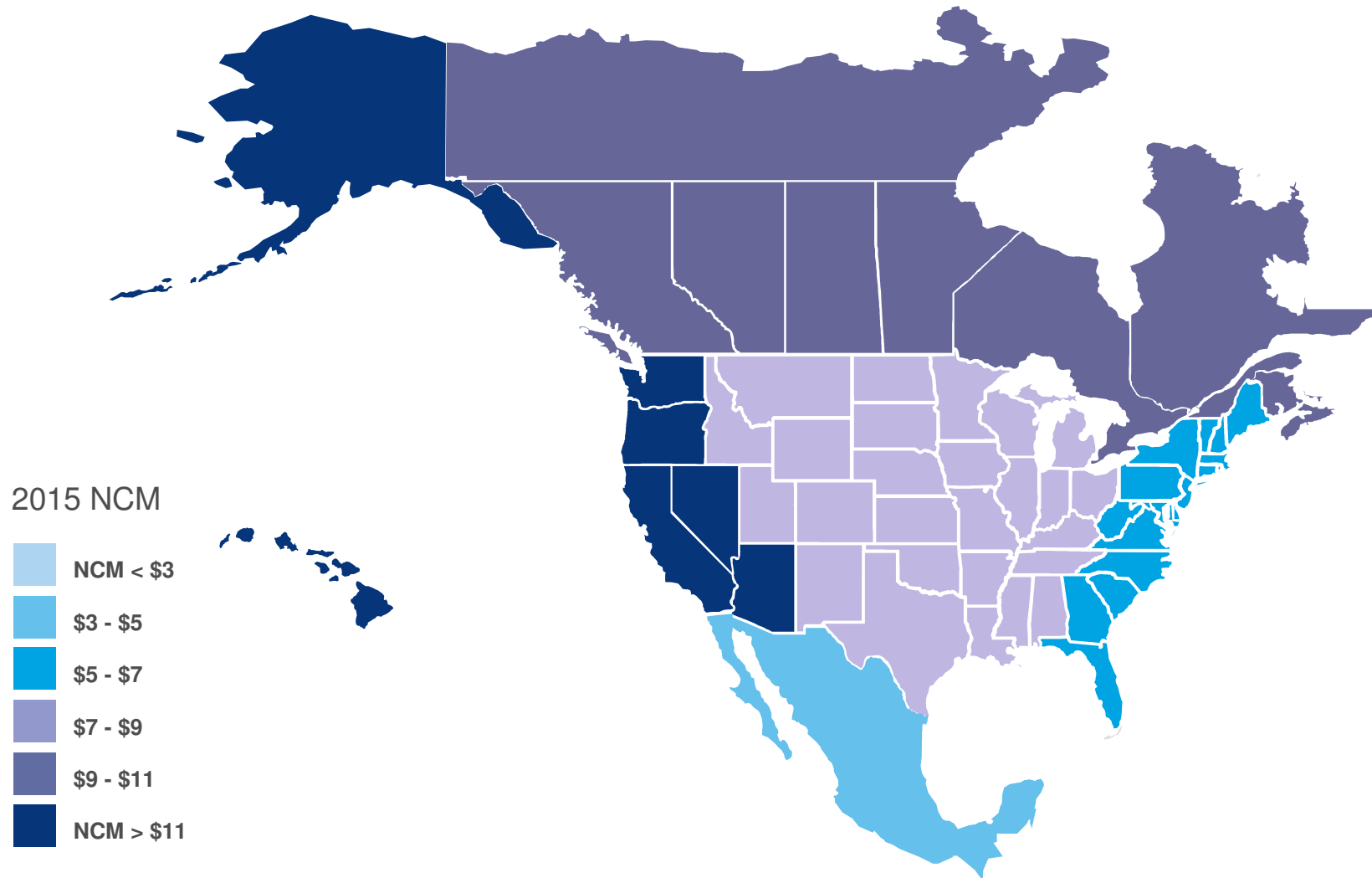


Source: Wood Mackenzie

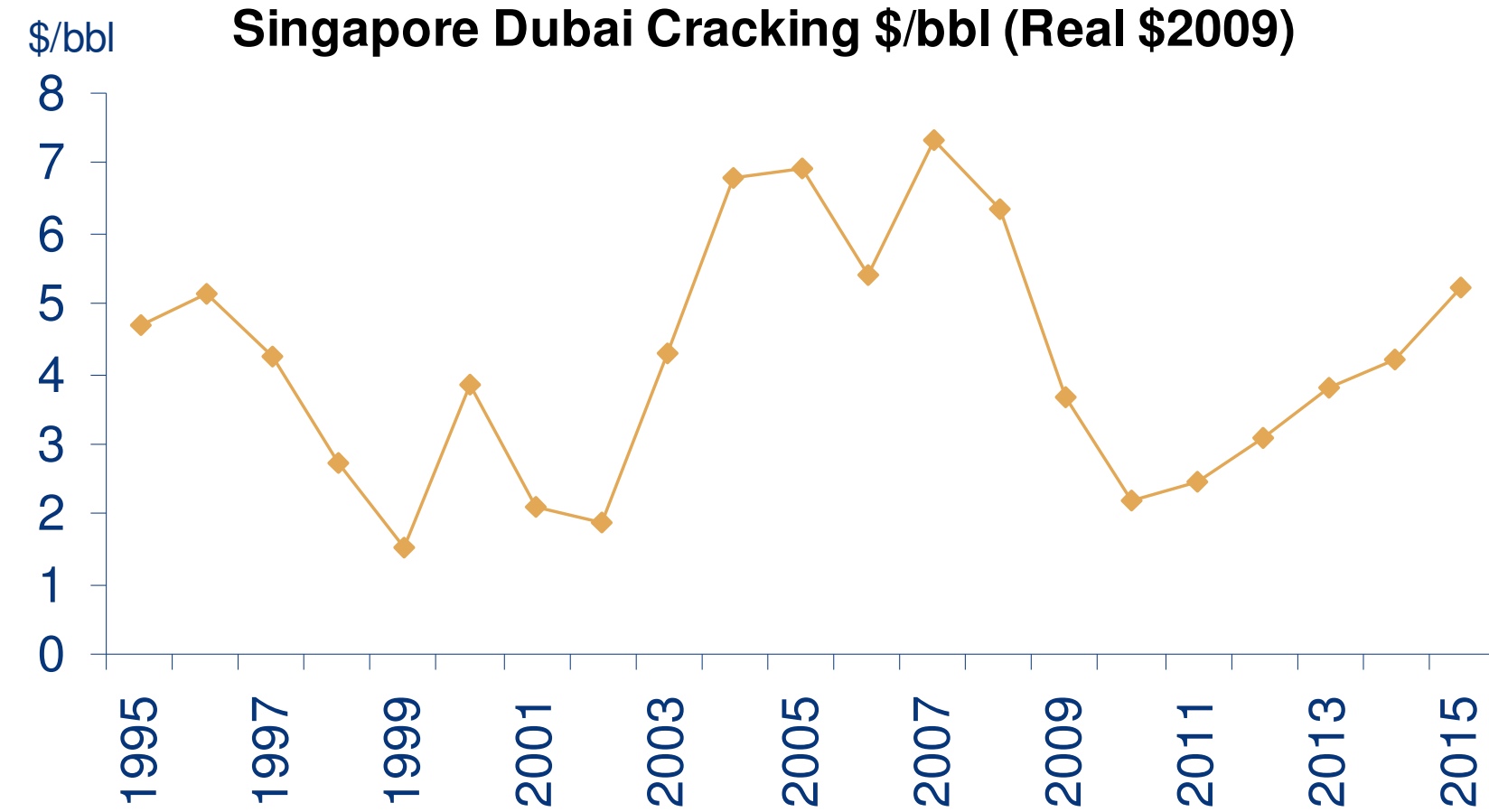
## Refining margins in 2009 were downright frigid...



## ...but margins recover in the medium term



# Recovery of refining margins (and oil demand) depends on Asia

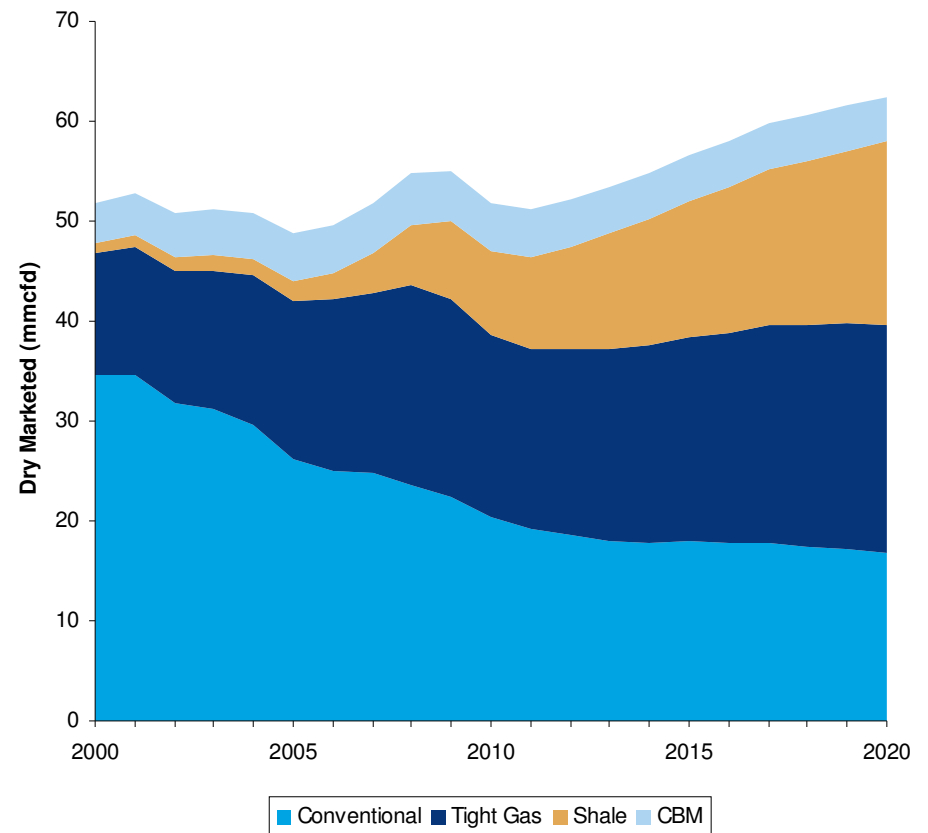


Source Wood Mackenzie

## Shale gas growth represents a paradigm shift

- › Wide spread resource base accessed with established technologies
- › Bank of prospective plays set to keep price upside in check, but price volatility and cycles look likely
- › Emerging issue is richness of gas shale
  - NGL content can vary dramatically across a play
  - Broadly not as wet as conventional gas
  - Likely slows demise rather than saves North American NGL feedstock assets

### L48 Production by Type

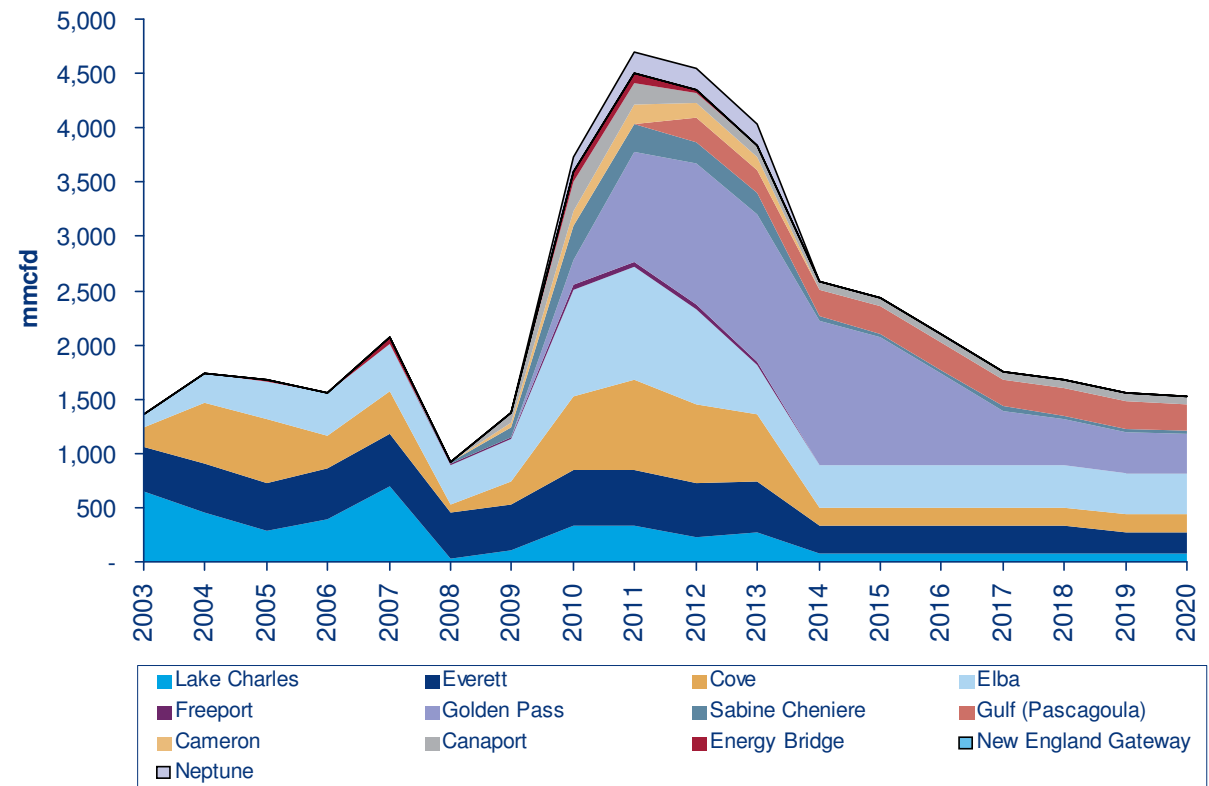


Source: Wood Mackenzie

## LNG imports rise through 2012 then decline as global demand recovers

- › Through 2012, North America offers competitive netbacks compared with Europe
- › Thereafter liquid US market used as a sink to support higher prices elsewhere
- › Cove Point, Golden Pass and Gulf LNG Energy attract disproportionate volumes due to their earmarked supply

### Annual Average LNG Volumes into North America



Source: Wood Mackenzie North American Gas Service

## What Might It All Mean?

### Observations

- › Some recovery in gasoline demand
- › Downward pressure on utilization rates as global capacity additions outpace demand growth
- › Carbon legislation impacts:
  - Decrease in hydrocarbon-based energy volumes – universal
  - Increase in operating costs – potentially selective

### Questions

- › How likely is it alternatives (e.g., imports, ethanol) fill not only incremental demand, but also displace existing NA refinery gasoline supply?
- › What are the signposts for when and where refinery closures might occur?
- › Will geography, rather than complexity, be the key margin driver?
- › How sensitive is your operation's cost structure to the price of carbon, relative to competition?
- › Which refiners can export surplus production?
- › How much of the carbon cost ultimately is borne by consumers?

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