



Presentation Refining Forum, EC 12/04/2013
Sammy Six

Starting point

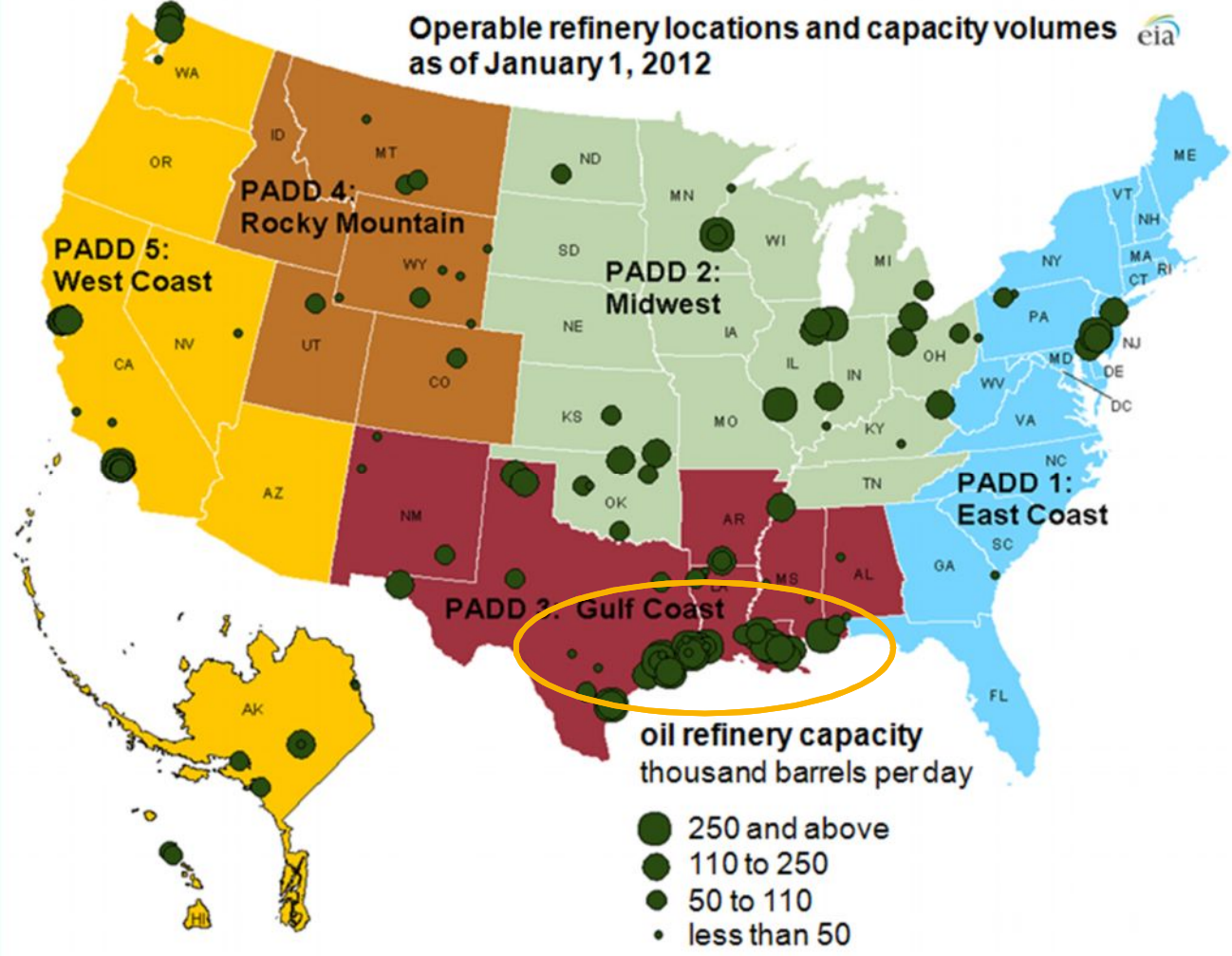
February 2012: US becomes net exporter of oil products for the first time since 1949

European refining industry not really concerned about competition with the US.
Threat perceived to come almost exclusively from large, modern and export oriented refineries in India and Middle East (e.g. Jubail, Al Zour, ...)



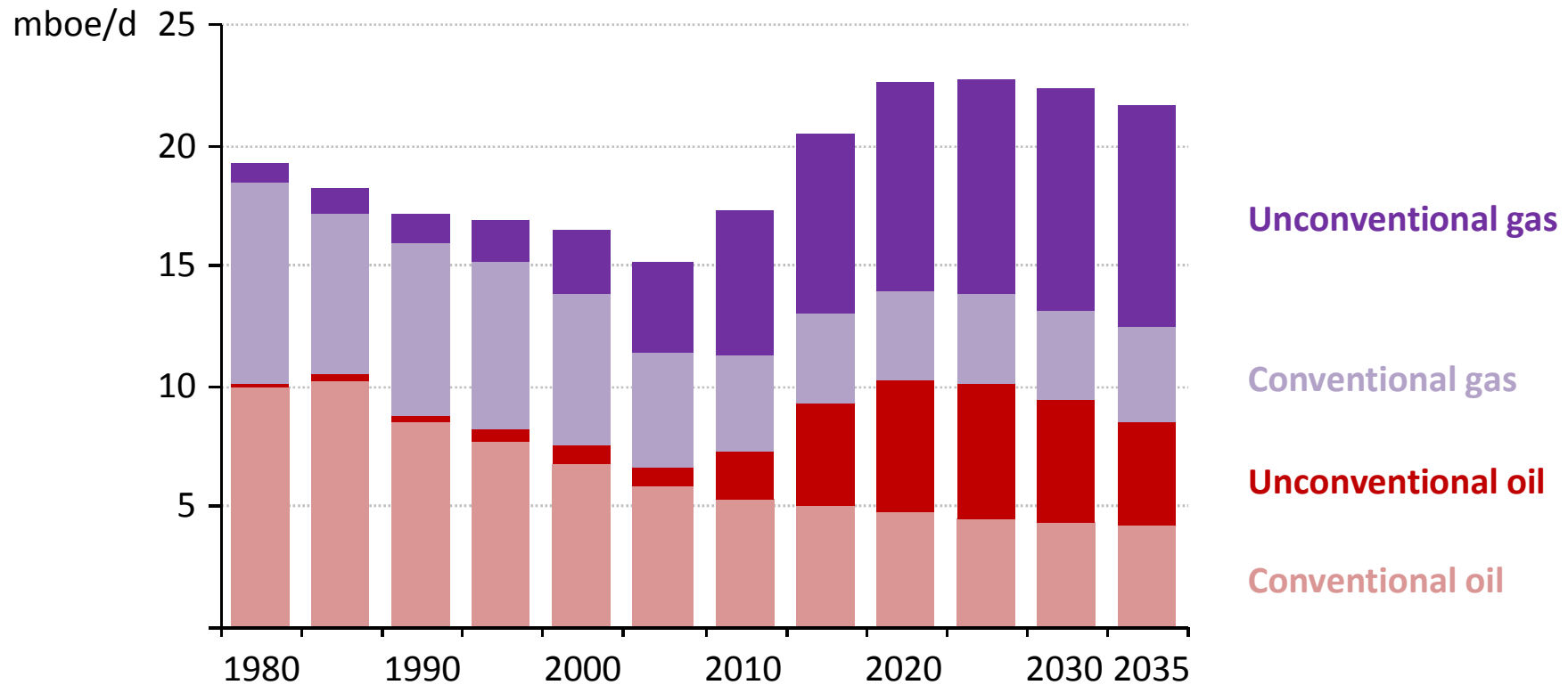
Downstream market characteristics		
Stagnating domestic demand	✓	✓
Overcapacity	✓	✓
Ownership changes	✓	✓
Regulatory burden*	✓	✓
Discounted feedstock crude	✓	✗
Low operating costs (gas)	✓	✗
Crude exports	✗	✓

Petroleum Administration for Defense Districts



A United States oil & gas transformation

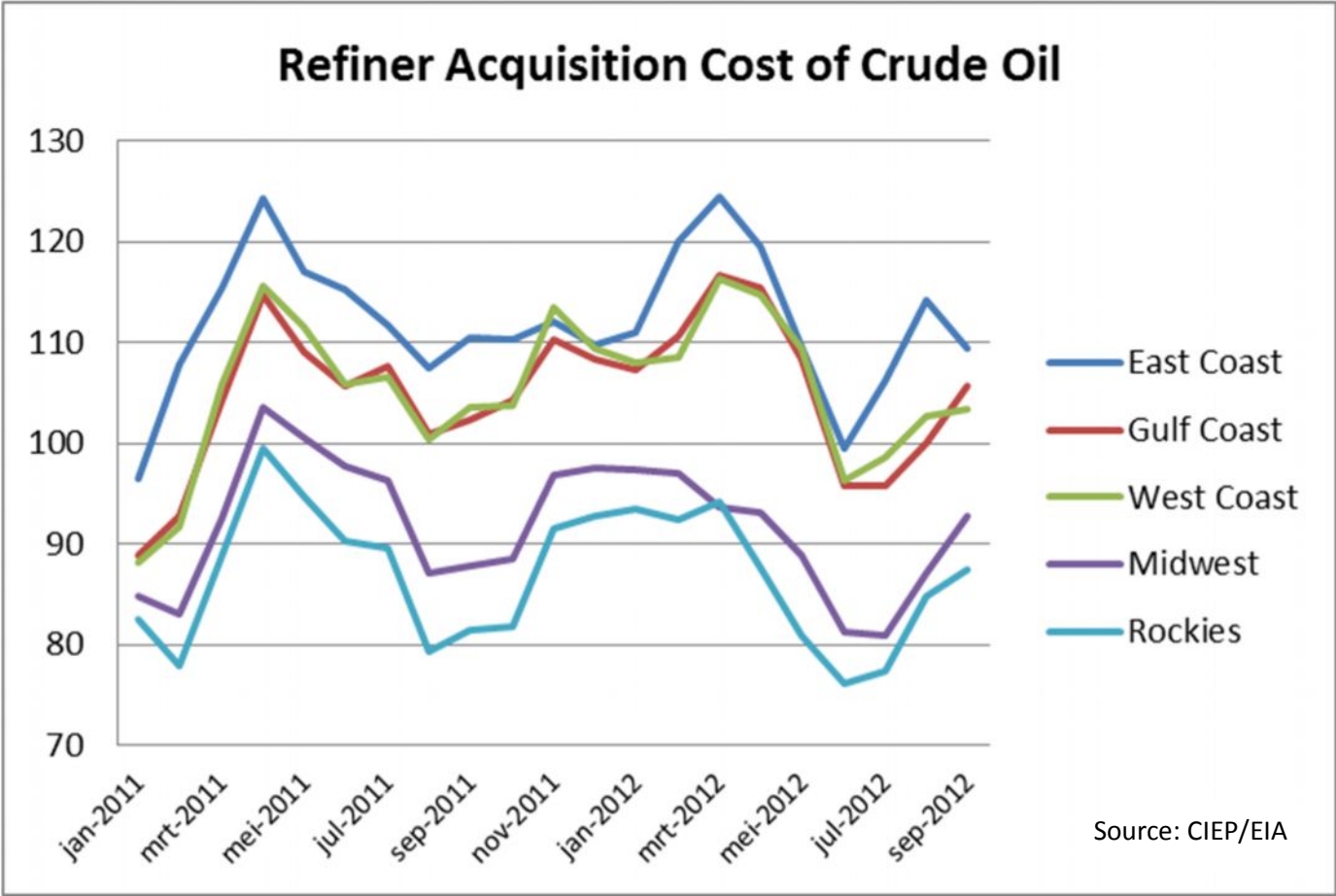
US oil and gas production



Source: IEA.: WEO, 2012

Midstream boom: unconventional solutions





PADD 1: East Coast

- Total (simple) refining capacity: 1.2 Mb/d
- Crude feedstock: light sweet, light medium sour
- Import sources: Nigeria, Canada, Saudi Arabia, Libya, Algeria, Angola
- Priced against Brent benchmark (premium over WTI)
- Accounts for over 85 percent of all gasoline imports

Decline in gasoline demand ...

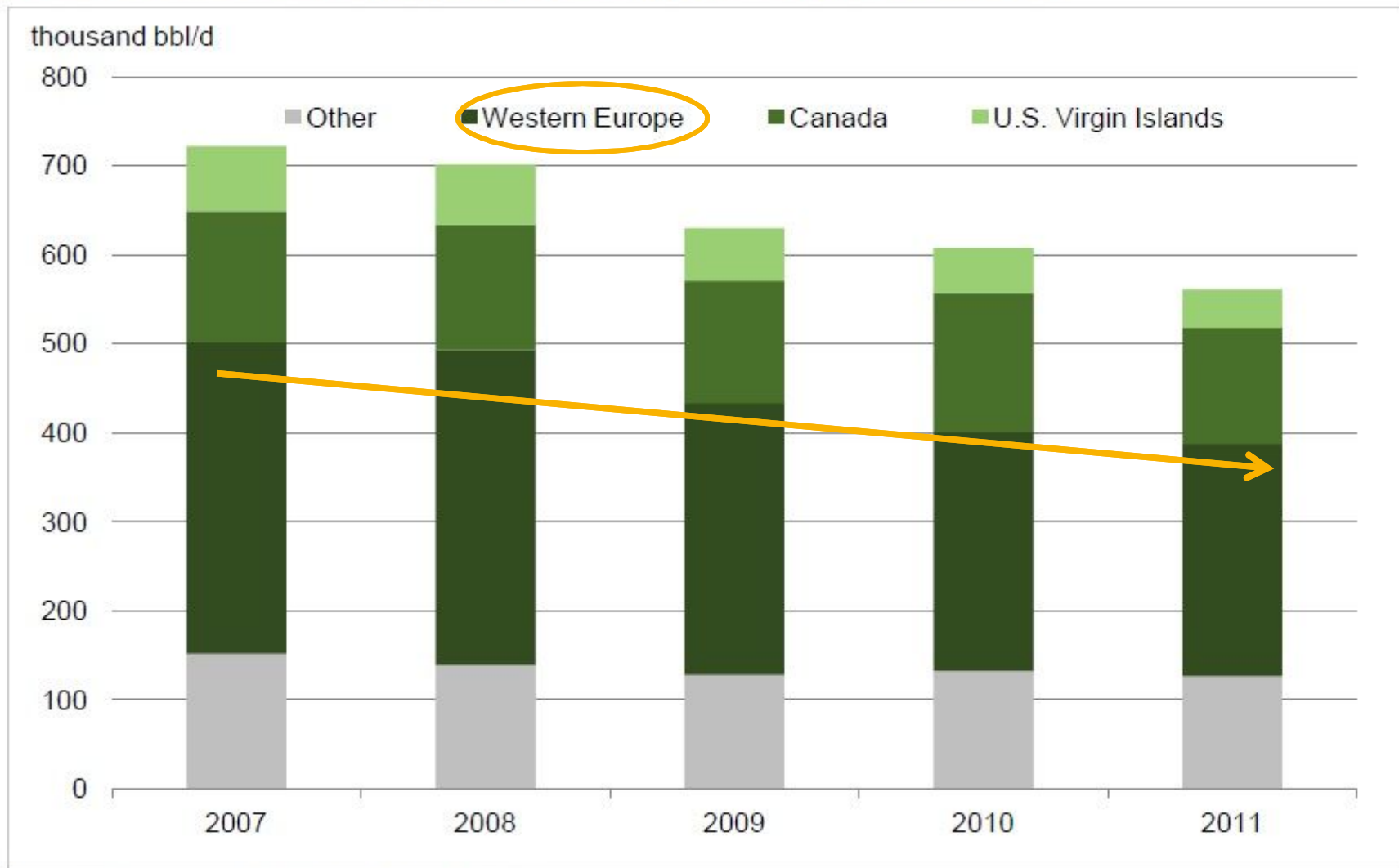
1. Changing consumer behavior – crisis & high prices
2. Increased vehicle fuel efficiency – CAFE standards
3. Ethanol blending – E10

... leads to a reduction of imports from mainly Western Europe

PADD I



Figure 7. Northeast Gasoline Imports by Origin, Annual Average 2007-2011



Source: U.S. Energy Information Administration.

US East Coast refining = European refining?

Overcapacity, falling demand and high Brent prices

2011-2012: Closures lead to trimming of capacity by 25 %

- Security of supply worries
- Opportunity for European refiners to fill the gap?

Bakken crude, rail and Marcellus gas to the rescue

1. Philadelphia refinery Sunoco: 330,000 bpd
2. Marcus Hook refinery Sunoco: 178,000 bpd
3. Trainer refinery Phillips66: 185,000 bpd

Imminent closure of half of East Coast refining capacity reversed

PADDs 2 & 4: Midwest and Rockies

- Total refining capacity 4.2 Mb/d
 - Feedstock traditionally Canadian oil, now increasingly also tar sands, Bakken light
 - Bottlenecks (Cushing) leading to heavily discounted feedstock (Bakken & WCS)
 - ... **record profits for refiners, but consumers unable to profit!**
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- Tremendous logistical challenges to connect supply and demand: rail, truck, barge, ...
 - **Long term: pipeline only efficient option?**
 - Medium / long term? Domestic crude & gas price outlook?

PADD II



PADD IV



Pipeline race to haul crude from Canada and Bakken to GC refiners, relieve bottlenecks

Seaway



Keystone XL



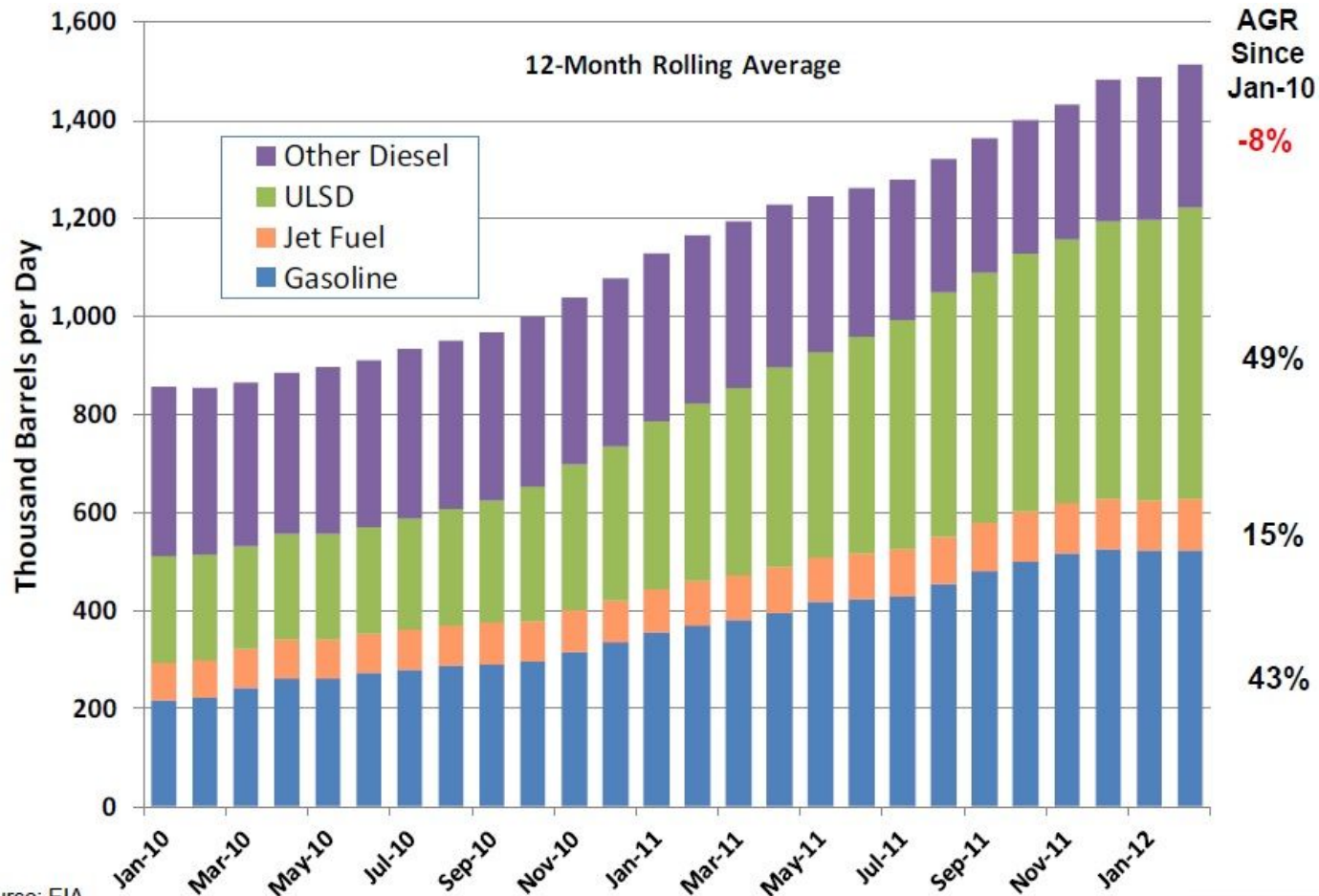
PADD 3: Gulf Coast

- **Deep conversion capacity, heavy crude imports**
- **Bakken, Eagle Ford substituting light, sweet imports from predominantly West Africa**
 - Nigeria imports down 30 percent since 2005
 - Angola \searrow 27 percent
 - Algeria \searrow 25 percent
 - Imports to zero in 1 – 3 years?
 - Europe substitute destination? Cheaper feedstock?
- **Product export boom to Latin America**
 - Taking over traditional export markets European refiners?
 - Latin American refining plans insecure

PADD III



US Oil Product Exports 2010 - 2012



Source: EIA



PADD 5: West Coast

- **The “odd one out”:** isolation
- Refining capacity of 3.2 Mb/d
- Feedstock crude from California, Alaska and imports from Iraq, Canada, Ecuador, KSA and Colombia
- Oil sands & Bakken via rail and truck, barge
- Monterey Shale? /Arctic? – ventures delayed
- Oligopolistic market structure due to specific product specifications reducing potential supplier pool



Conclusion

- Cheap natural gas, cheap feedstock crude give clear competitive advantages
- East Coast imports less gasoline from Europe
- More diesel exports from US to Europe
- Increased competition from Gulf Coast refiners in crucial export markets (Lat Am, W Africa)
- Crude export ban intensifies product competition in international markets
- *European refining negatively impacted by shale gas and tight oil boom in US*



Thank you.

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