



Changes in U.S. Participation in Global Product Markets: Increases and Changes in Product Exports

2014 EIA Energy Conference

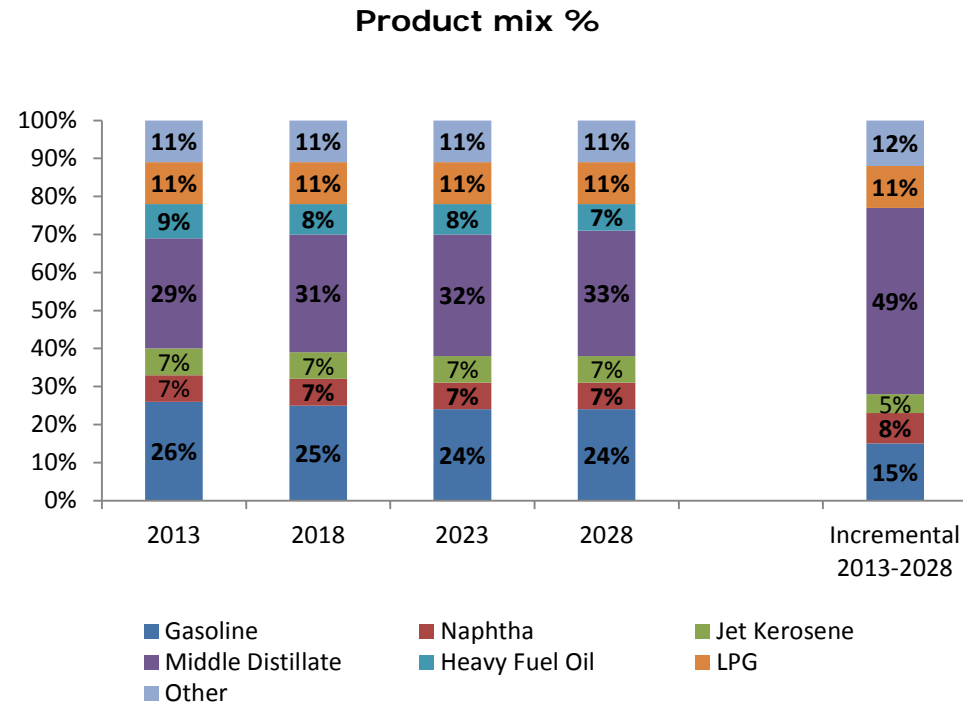
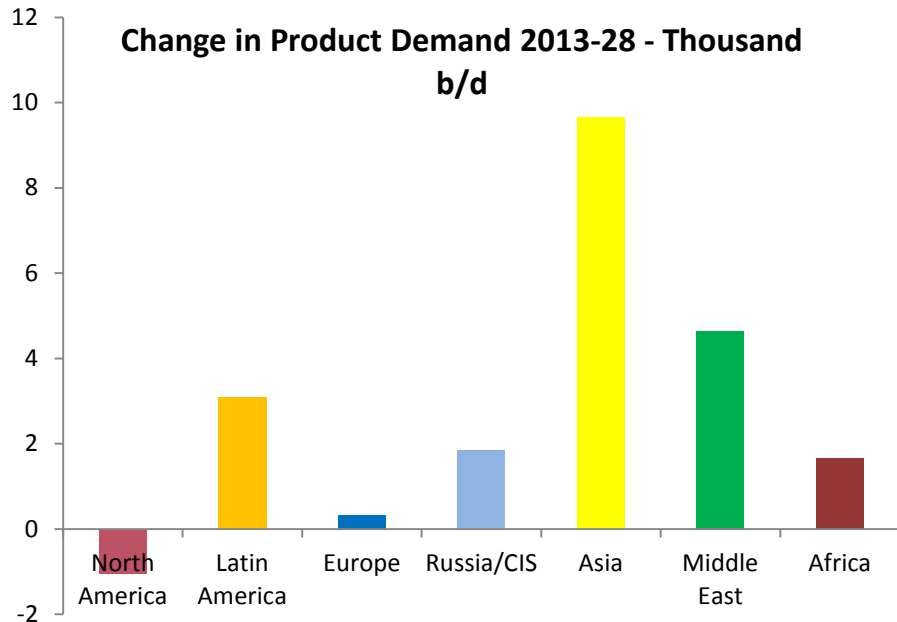
Hart Energy Research and Consulting

Washington DC

July 14, 2014

Emerging Characteristics of Global Petroleum Product Markets

Growth in Demand Focused in Pacific. Incremental demand oriented toward distillate

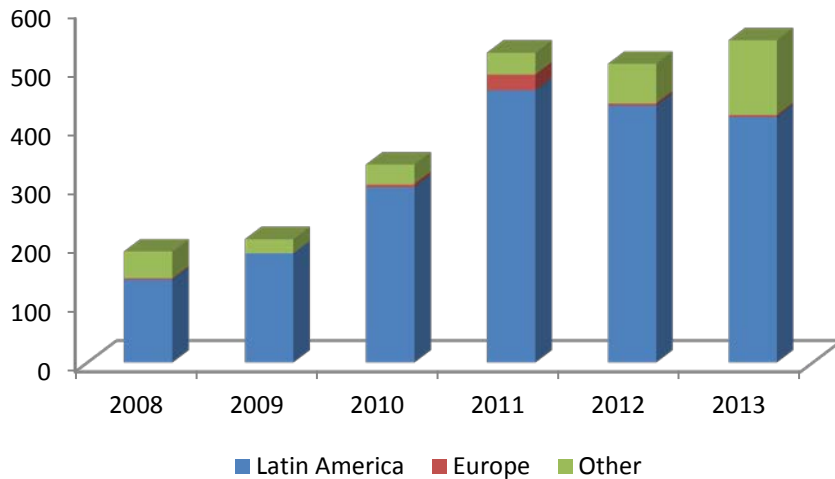


Source: Hart Energy Research & Consulting, 2014

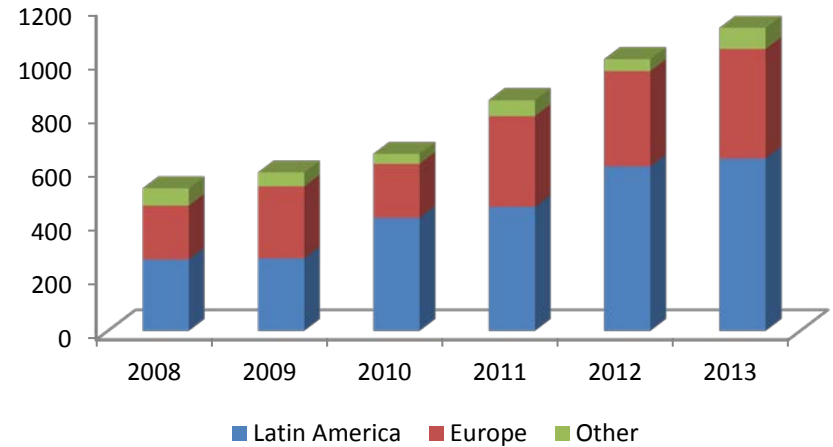
Growth in U.S. Gasoline and Distillate Exports

Exports driven by favorable competitive position of U.S. refineries (shale/tight oil and gas related) and capacity constraints in receiving markets

Gasoline Thousand b/d



Distillate Thousand b/d

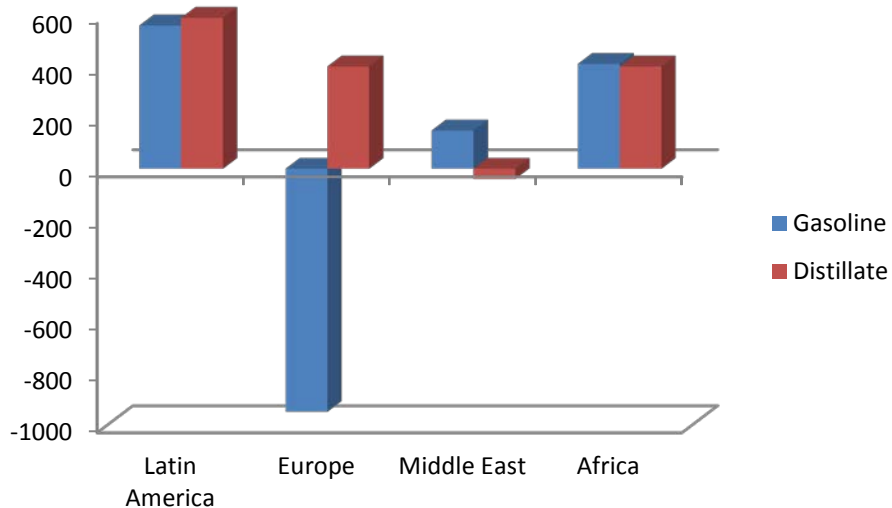


Source: EIA

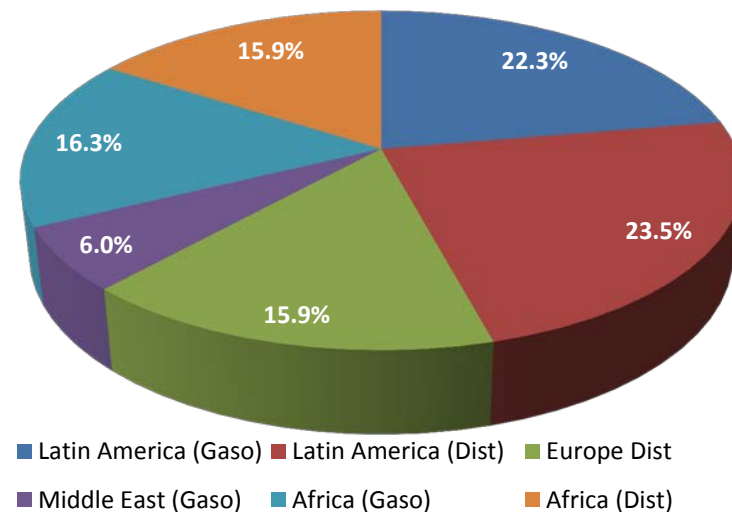
Import/Export Market - 2013

Total import market of 2.5 Million b/d: Latin America and Africa gasoline and distillate importers; Middle East gasoline, Europe Diesel

Imports(-exports) Thousand b/d



Global Importing Markets - Total 2.5 Million b/d

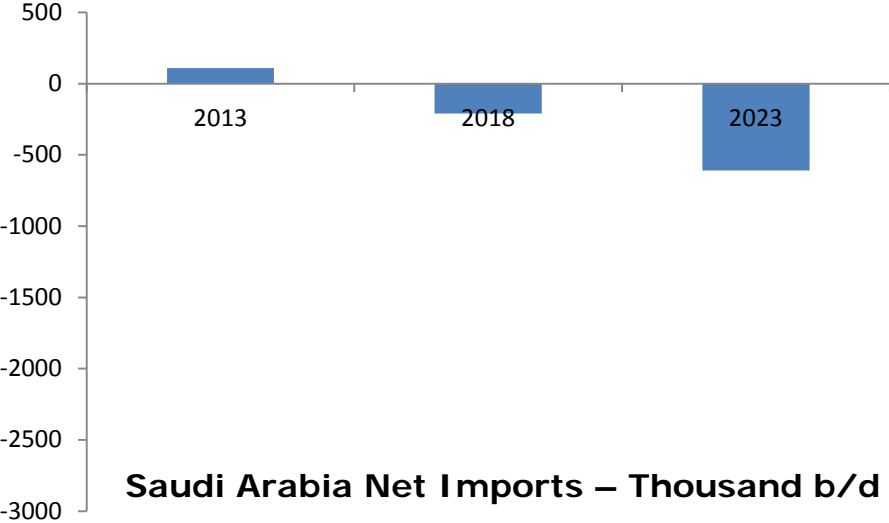
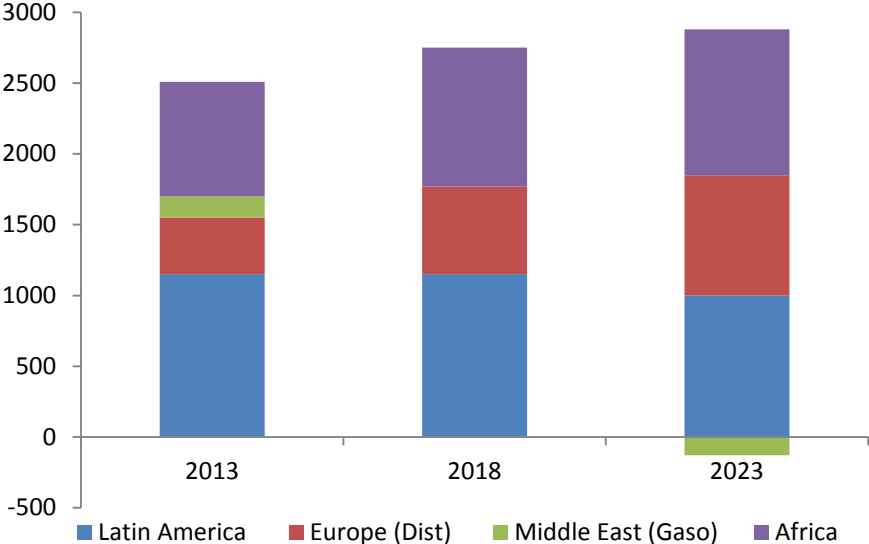


Source: EIA, IEA and Hart Energy Research & Consulting, 2014

Outlook for Gasoline/Distillate Export Markets

Some near term growth, longer term stable. Middle East exports expected to capture some market share

Net Imports by Region – Thousand b/d

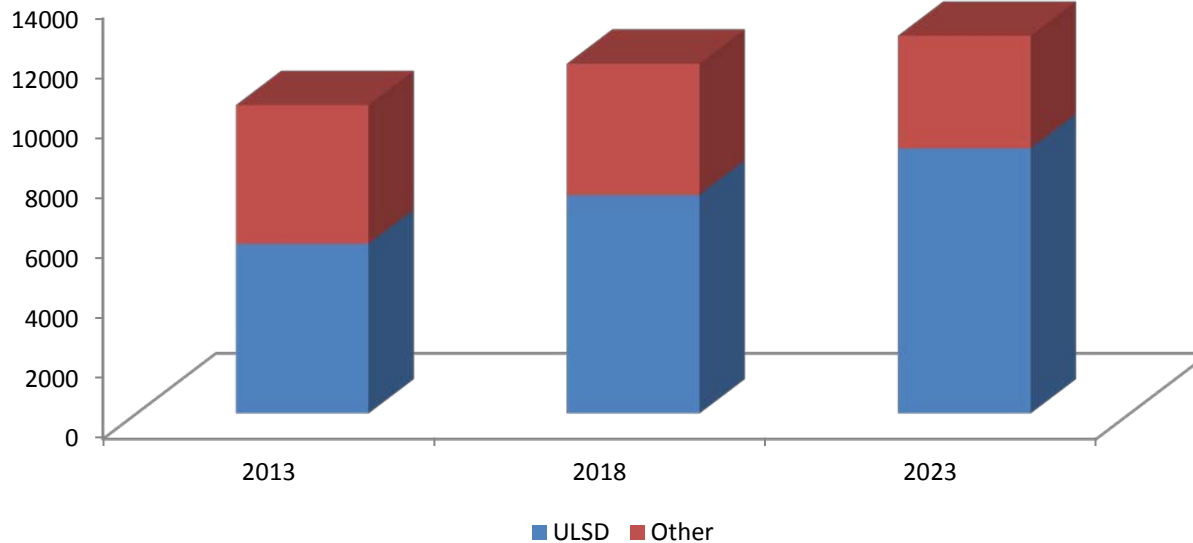


Source: Hart Energy Research & Consulting, 2014

Distillate Quality Improvement

Distillate demand and ULSD (<50ppm) demand Europe/Latin America/Africa.
ULSD will make up growing share of distillate and of export market

Distillate Demand - Thousand b/d



Source: Hart Energy Research & Consulting, 2014

Future Export Growth Will Face Some Limitation

Significant Middle East Expansion

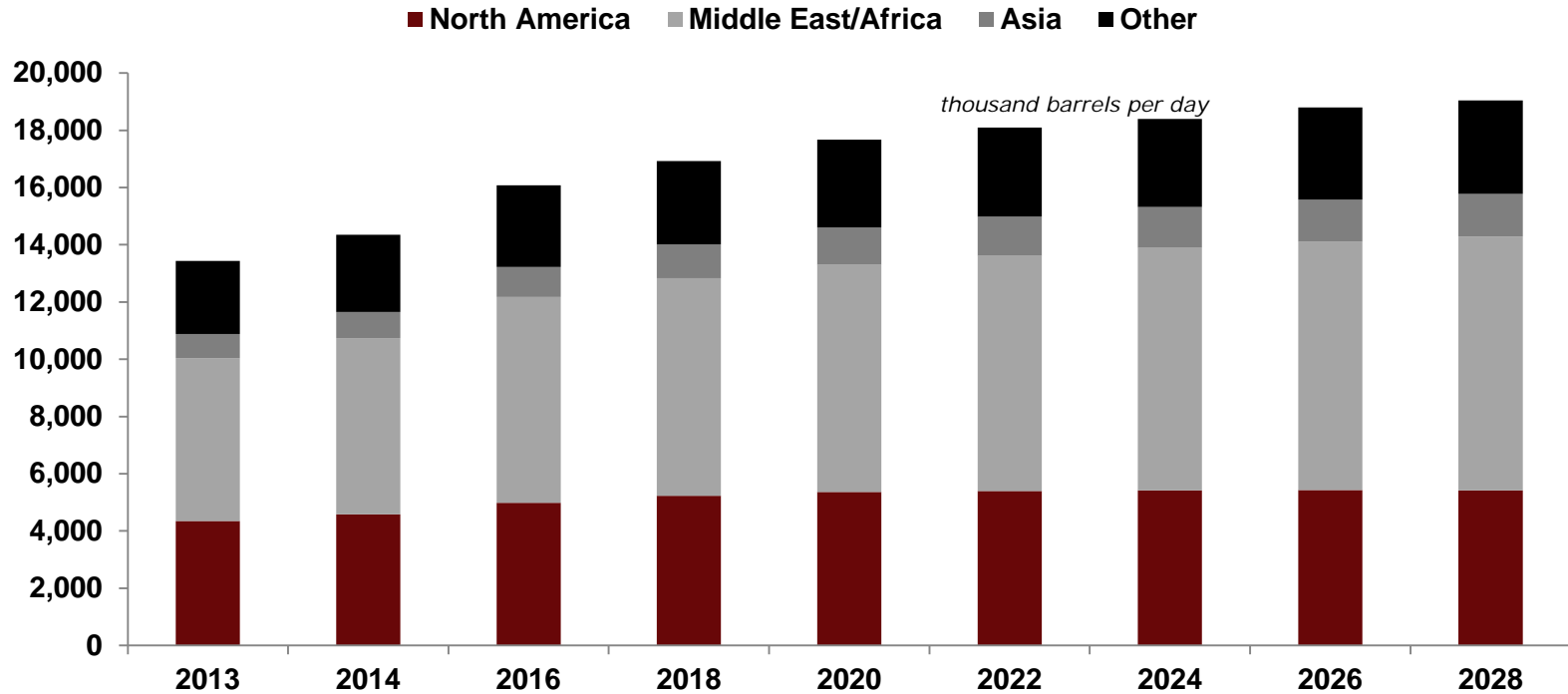
- A portion of Latin America demand will be supplied by biofuels and ethers
- Capacity expansions, particularly in Middle East, will add to supply capability

Region	Country	Capacity
Thru 2018		MB/d
Latin America	Brazil	395
Middle East	Saudi Arabia	800
Middle East	Iran	240
Middle East	Iraq	60
Middle East	Oman	290
Middle East	UAE	410
Middle East	Qatar	140
2019-2023		
Latin America	Brazil	300
Middle East	Kuwait	480
Middle East	Iraq	140
Middle East	Bahrain	100
Africa	Angola	120

Source: Hart Energy Research & Consulting, 2014

Global Condensate and NGL

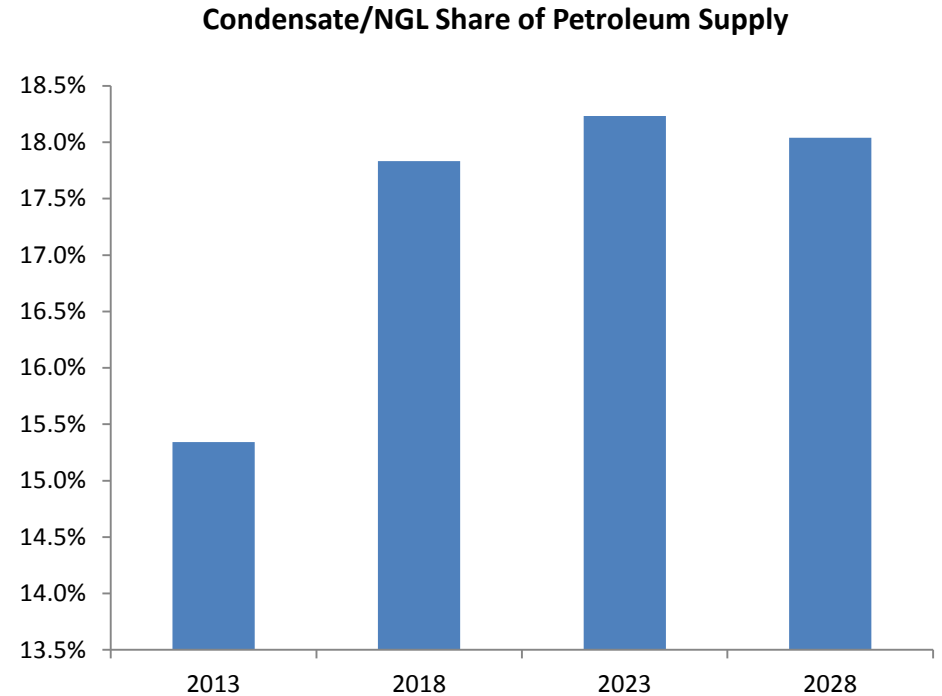
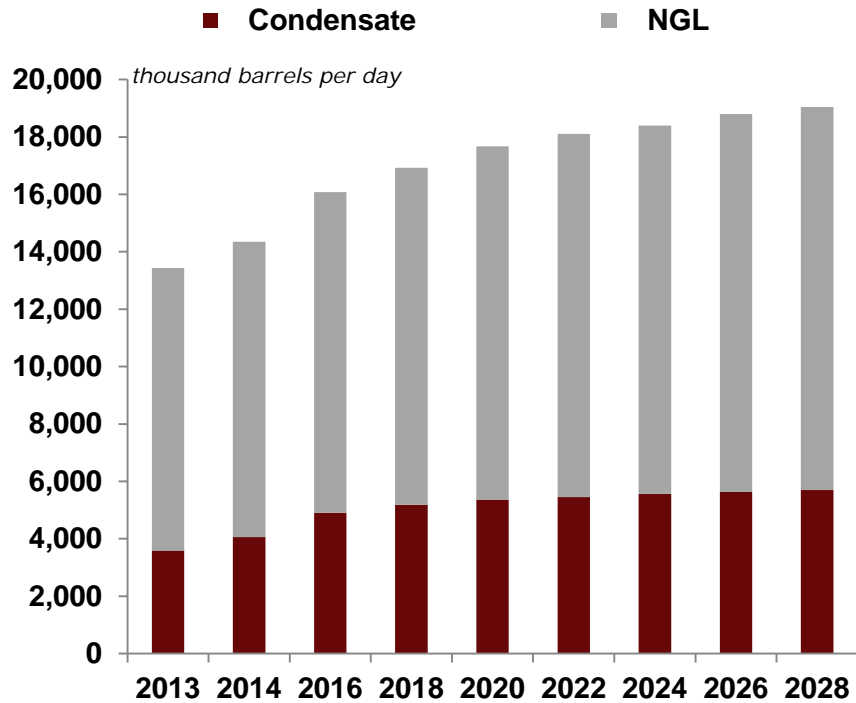
Condensate and NGL production will grow outside of U.S. as well



Source: Hart Energy Research & Consulting, 2014

Expanding Condensate/NGL Production Will Increase in Terms of Share of Supply

Largest increases in North America, Middle East/Africa

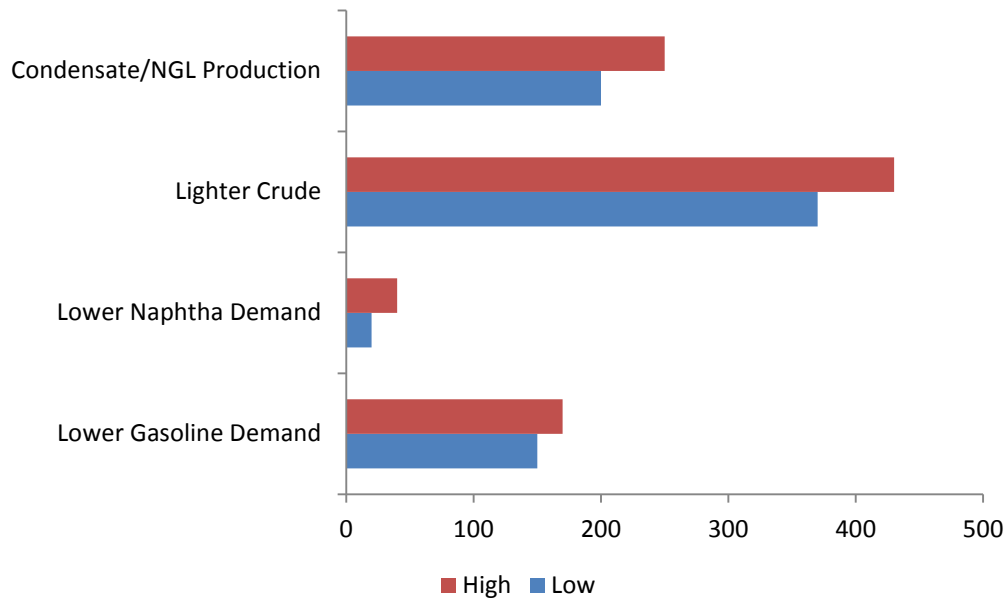


Source: Hart Energy Research & Consulting, 2014

Growing Surplus of Naphtha in U.S. Market

Growth in naphtha supply while market demand shrinks. Refiners facing challenges of balancing naphtha

US Expanding Supply/Surplus Naphtha - Thousand b/d



- Condensate/NGL production increase adding to light end supply
- Lighter crude, higher refinery utilization increasing naphtha supply
- Lower gasoline and naphtha demand to absorb naphtha

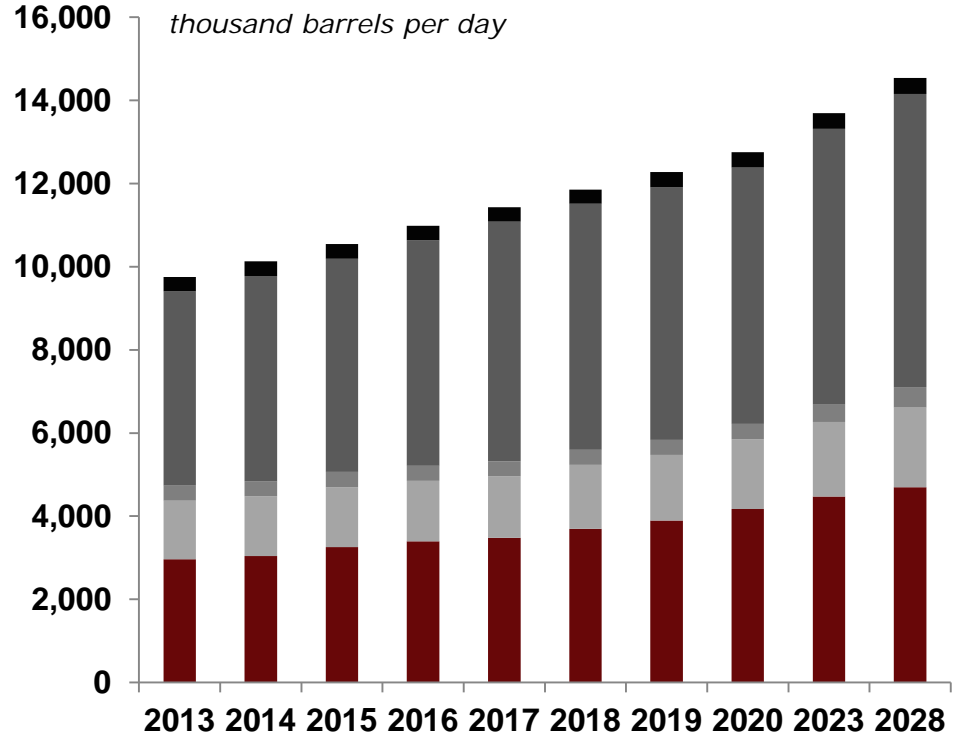
Source: Hart Energy Research & Consulting, 2014

U.S. Naphtha Exports – Global Ethylene Cracker Feed

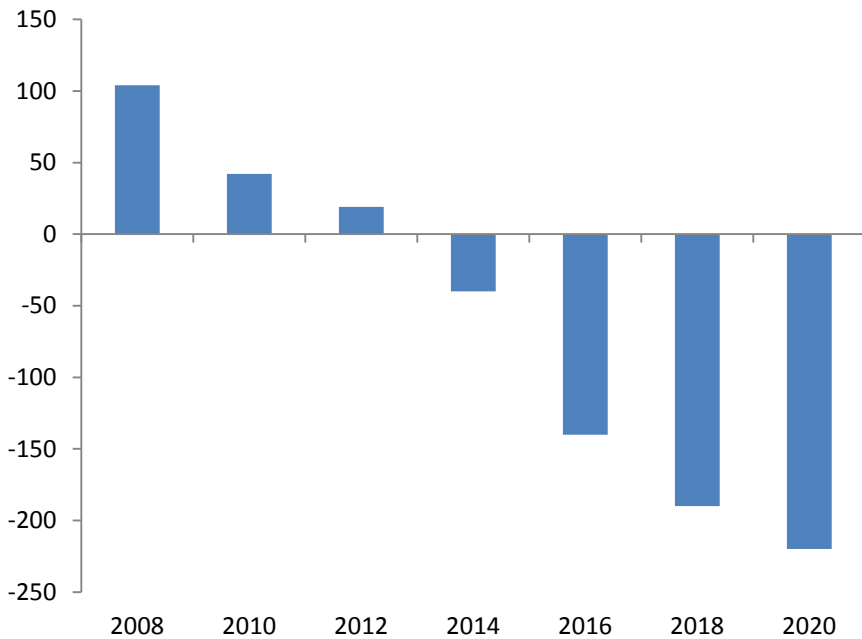
U.S. will emerge as major naphtha exporter along with Middle East and Africa, surplus naphtha absorbed in Asia ethylene market

Global Ethylene Cracker Feed

■ Ethane ■ Propane ■ Butane ■ Naphtha ■ Gas Oil



U.S. Naphtha Imports - Thousand b/d





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