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Asia-Pacific | Europe | North America

Trends in the Global Oil and Gas Industry:

Forget whatever you thought you knew.....

Edward Osterwald, Partner CEG Europe

Antwerp, May 2014

“We are running out of oil”

“OPEC is a cartel”

“Shale gas and shale oil are unique to the US and Canada”

“Refining is a really, really unprofitable business”

“Price reporting agencies are independent”

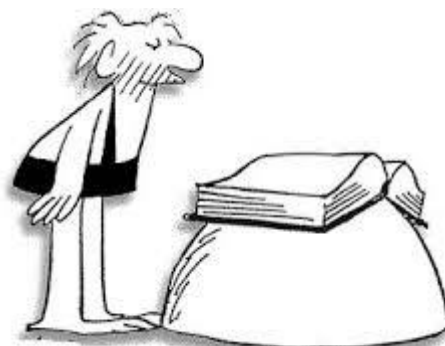
- By understanding why these and other forms of “conventional wisdom” are flawed, one might just be able to spot useful trends in cargo logistics

Remember: “The Stone Age?”

- Oilmen are fond of saying:

“The Stone Age did not end because we ran out of stones.

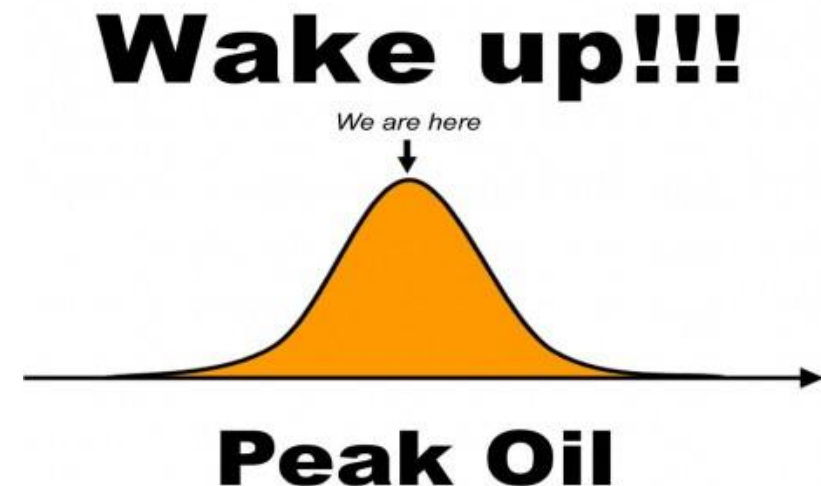
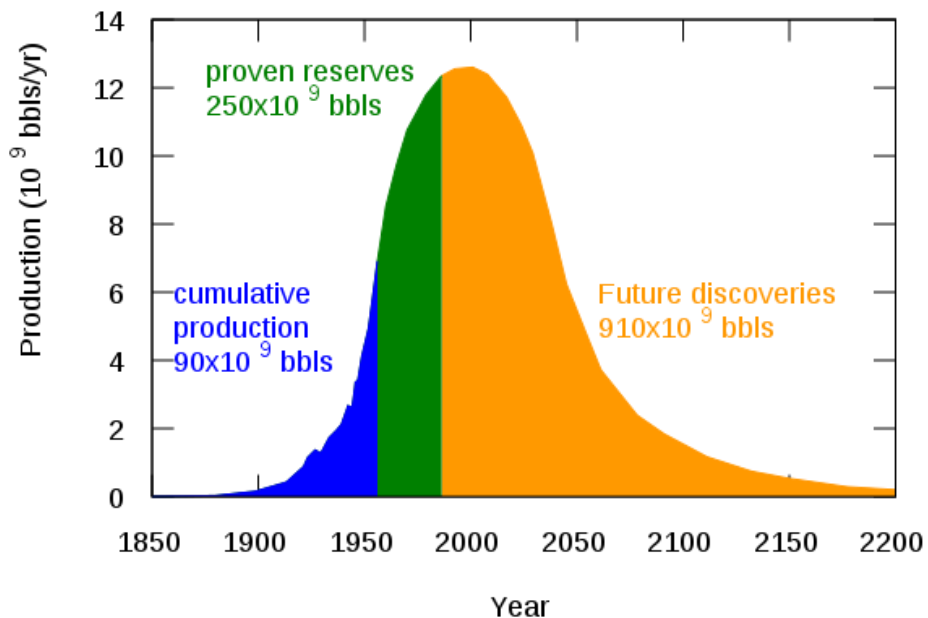
The Oil Age will not end because we will run out of oil.”



Remember “Peak Oil”?: It Helped Trigger the Panic for Renewables



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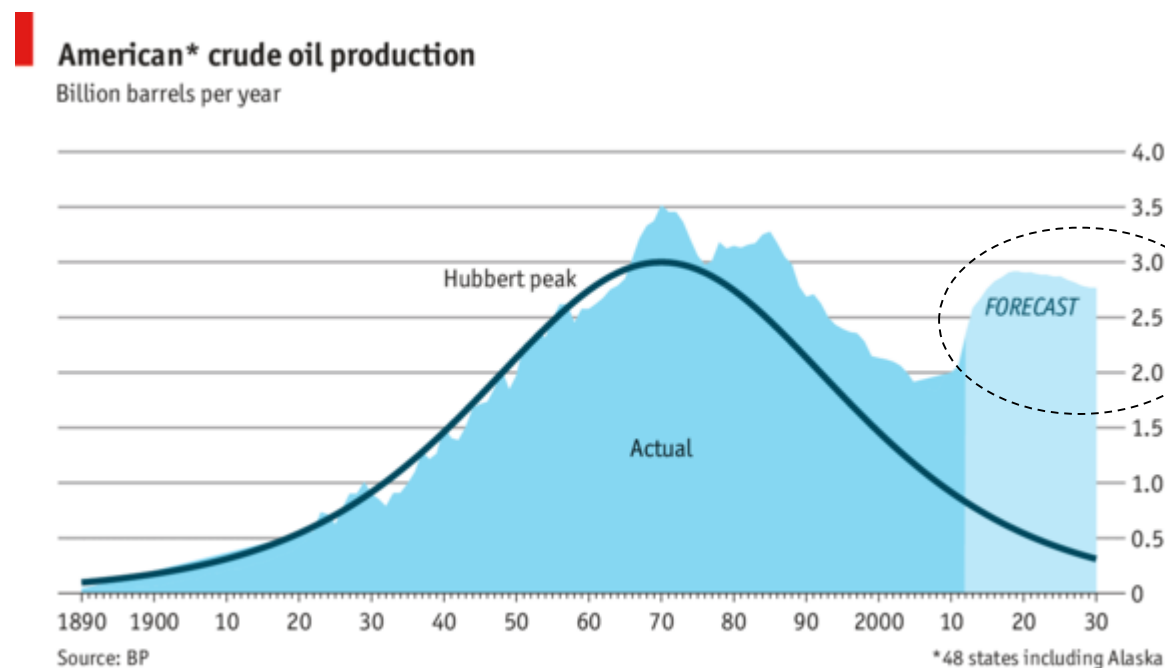
“Supply will struggle to keep pace.
By the end of the coming decade, growth in the production of easily accessible oil and gas will not match the projected rate of demand growth.”

“*Shell Energy Scenarios to 2050*” (published 2007 / 2008)

“Peak Oil”: Is Now a Distant Memory



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Economist.com/graphicdetail

Nobody predicted
this radical shift;
no one saw it
coming.

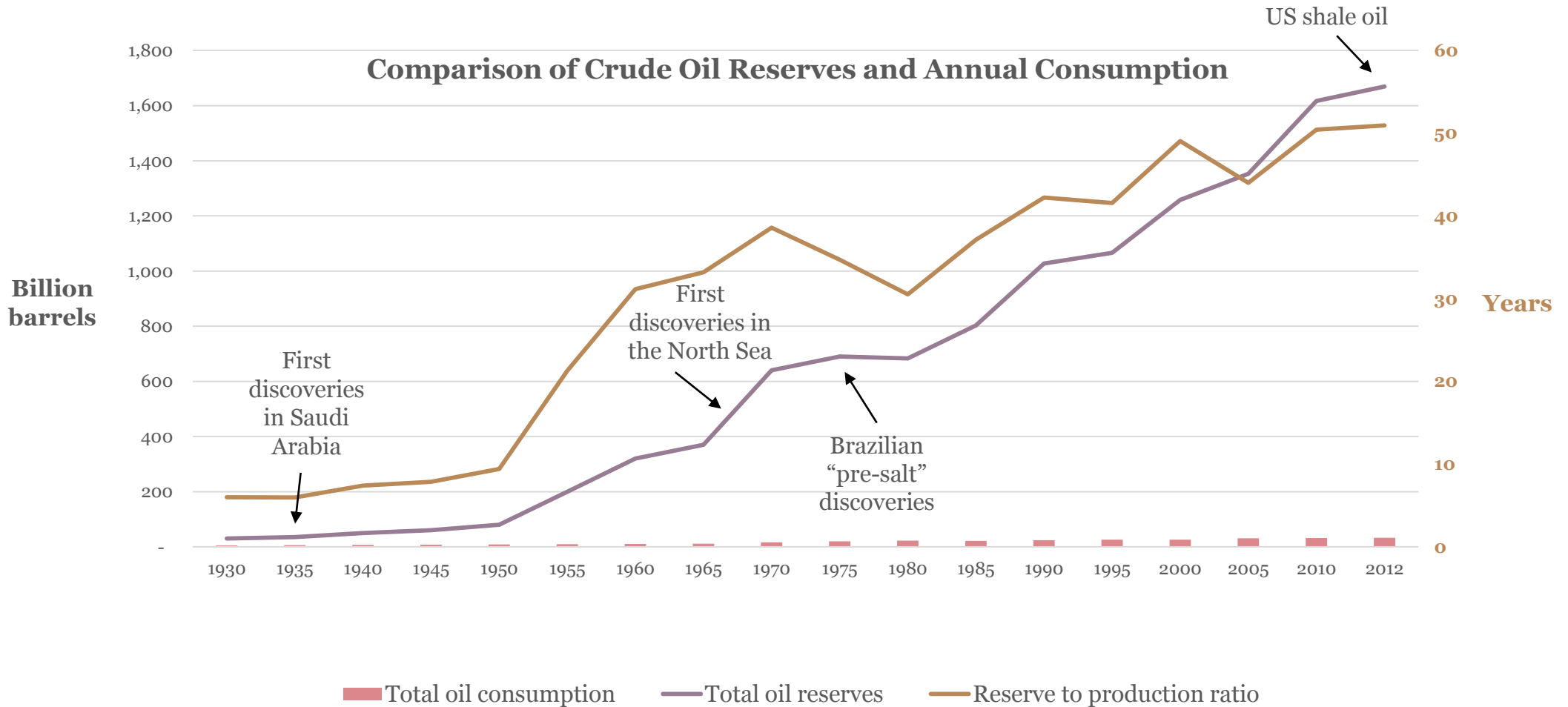
“Peak Oil” *The Economist* (5 March 2013):

“The technology that has unlocked huge volumes of gas from American shale beds can also be used to extract oil. As drilling for oil from shale intensifies America looks set for another peak in the next couple of decades. Mr Hubbert’s curve [*from the 1950s*] and the peak-oil brigade look out of date.”

A Few Facts You Don't Know: We Won't Run Out of Stones



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Conventional Oil: A Few (More) Facts



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- Proven **conventional** oil reserves are increasing more rapidly than global consumption
 - Therefore it is unlikely that the availability of oil supplies will constrain economic growth for the foreseeable future

(“we won’t run out of stones”)

- The main constraint, however, is production capacity in countries with large reserves that act as “swing” producers (e.g., Saudi Arabia, etc.)

Oil & Gas: What You Thought You Knew



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OPEC: The Cartel That Never Was

- From *Dictionary.com*:

Cartel:

“an international syndicate, combine, or trust formed especially to regulate prices and output in some field of business”

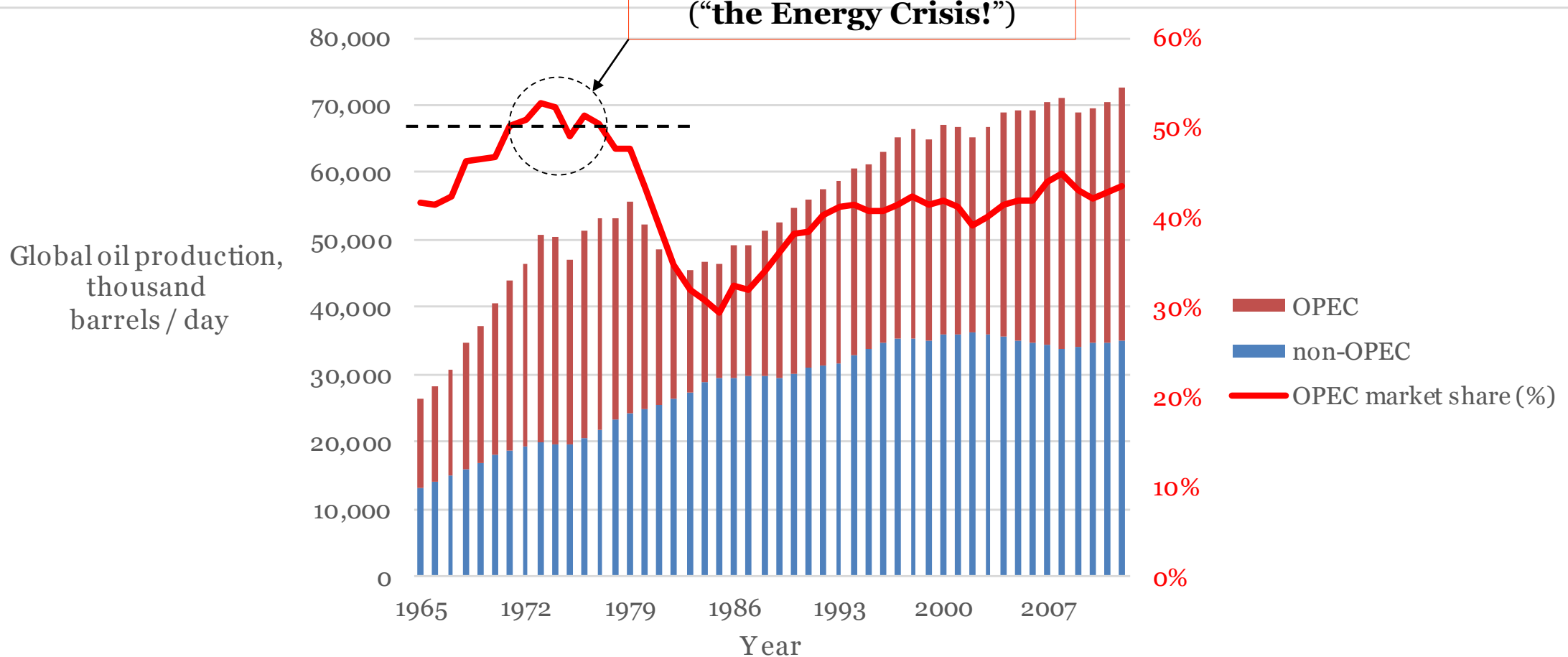


OPEC: Was Never a Cartel, but Merely a Collection of Low Cost Producers



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There have only been four years when OPEC's market share exceeded 50% ("the Energy Crisis!")



Source: BP Statistical Review of World Energy 2013

OPEC: A Few Facts



- OPEC was never able to fully control the price of oil
- The organization was able to influence global prices through regulating production of low cost oil, but this does not set the price
 - Apart from the early 1970 (“**the Energy Crisis!**”) OPEC was never able to control the price of oil
- Non-OPEC producers are high cost, so naturally maximize output whenever possible
- Whenever there has been a decline in oil prices, OPEC countries are always the first to cut production (not surprising, if you think about it)

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The Rise of Unconventionals: Technology, Applied Differently

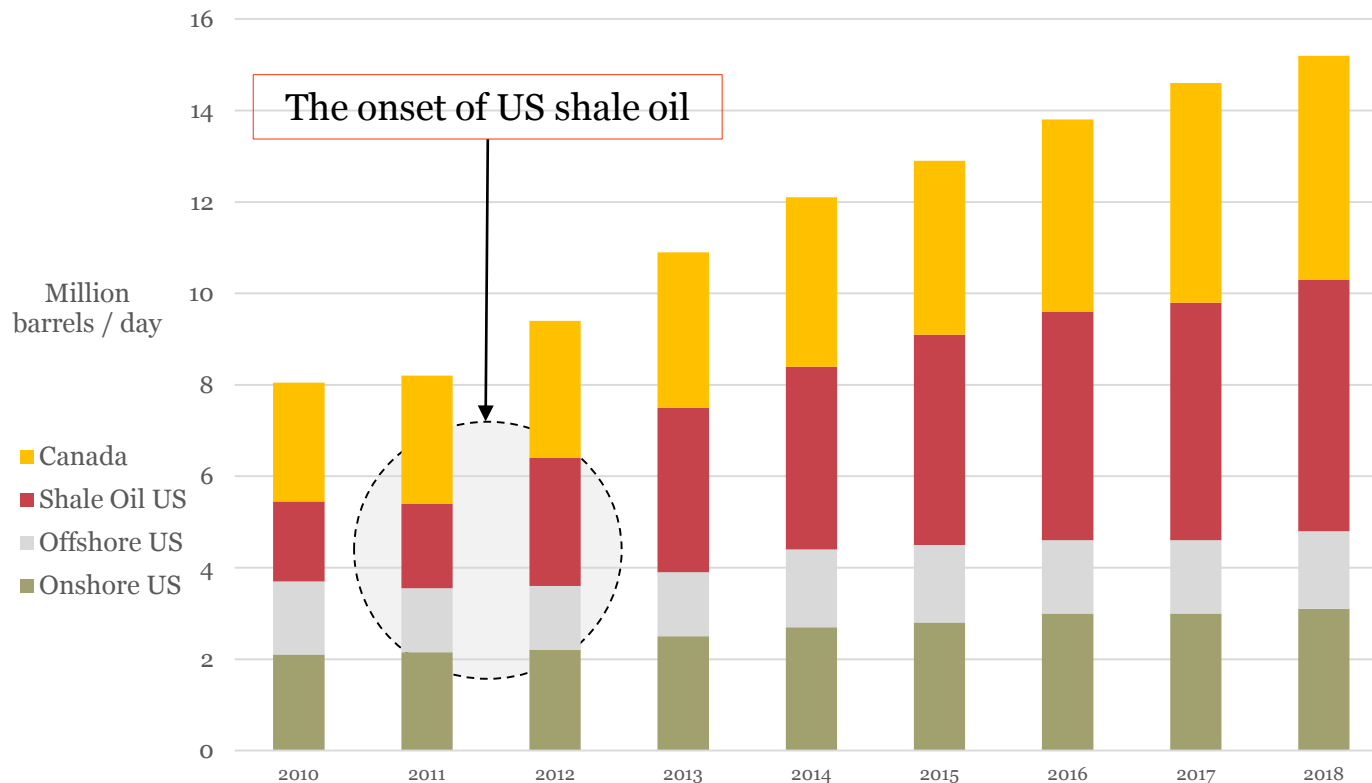


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- Traditional oil and gas reserves accumulated when hydrocarbons migrated to a natural trap, such as an anticline
- With unconventionals, however, such accumulations are no longer required because permeability can now be “manufactured.” Thus:
 - Resources are large but difficult to quantify and convert to “reserves”;
 - They include shale oil, shale gas, oil sands and oil shale;
(there are many types of “stones”)
 - Extraction techniques must be adapted to the geology of each formation; and
 - They have turned industry economics inside out.

The Rise of Unconventionals: North American Oil “Independence”

US and Canadian Oil Production

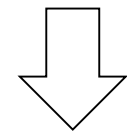


However...

Canadian output is rising faster than export capacity

and...

surplus US production cannot be exported

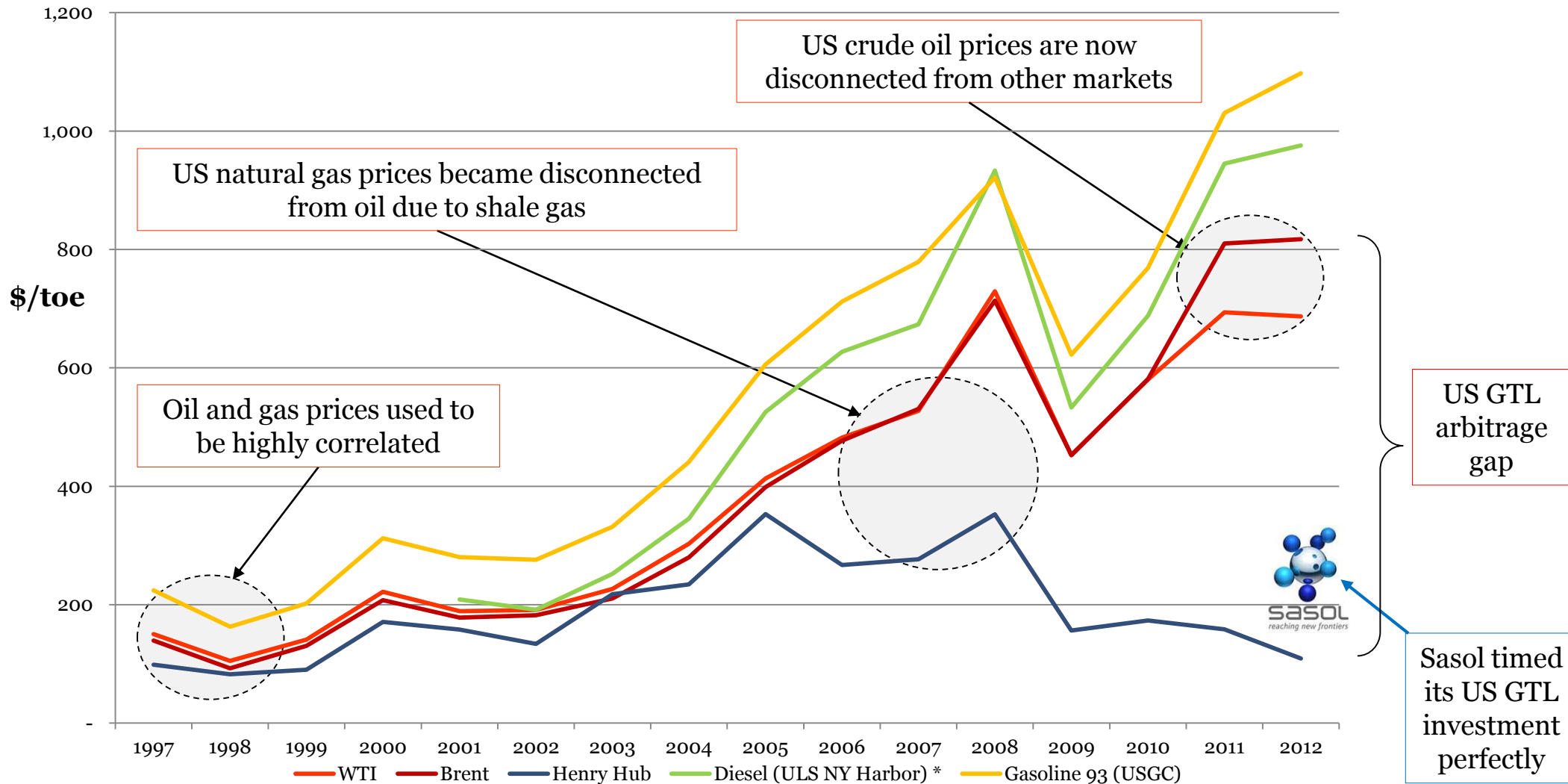


...which creates unforeseen problems

Unconventionals: They Certainly Affect Prices



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Source: CEG analysis

* 2001-2005 estimated

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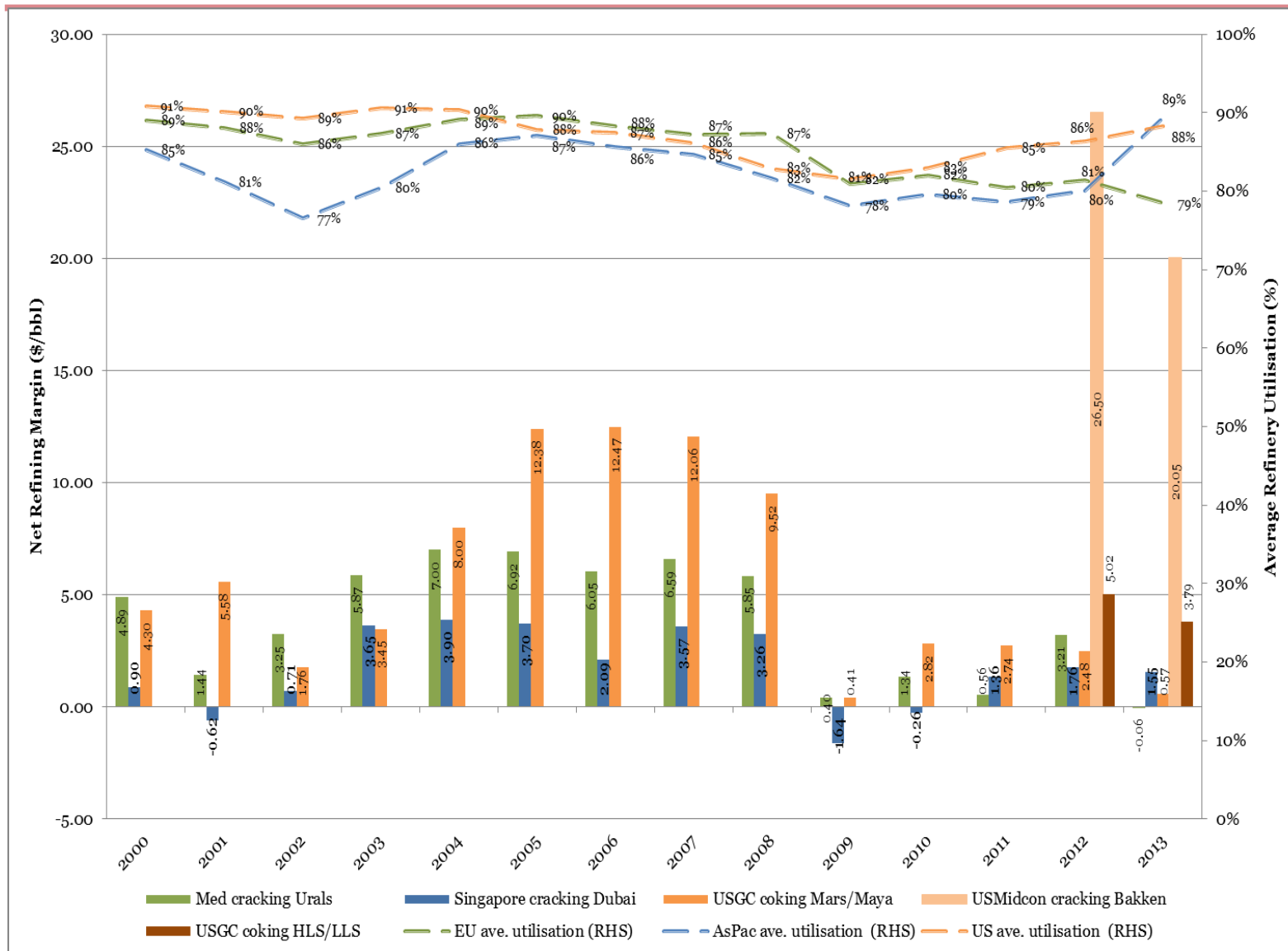
“Refining is a really, really unprofitable business”

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Unconventionals: Low Crude Oil Prices Make Refining in the US Very Profitable



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- The ban on oil exports from the US has caused a surge in refining margins
- It is US-specific phenomena

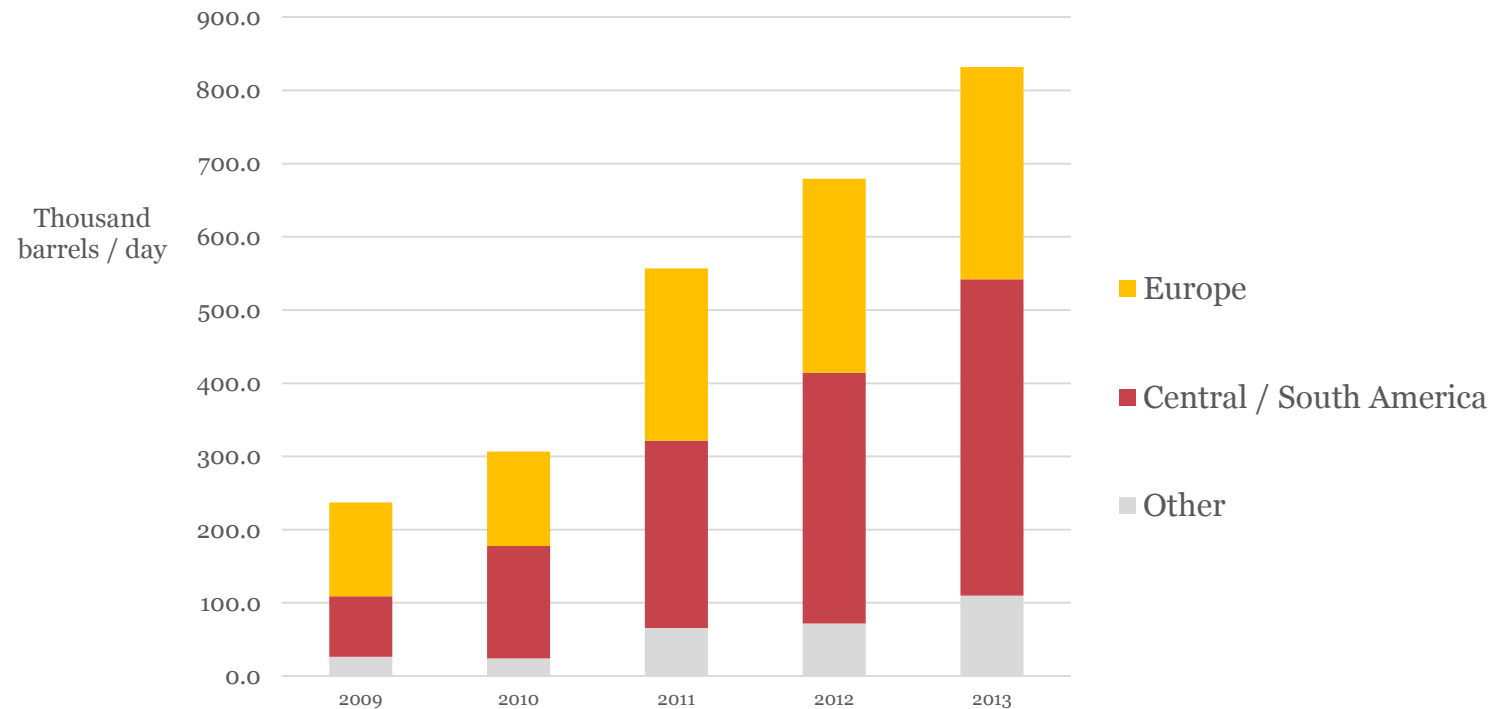
Source: "In-Province Upgrading Economics of a Green-field Oil Sands Refinery" to be published May 2014

US Exports: Only Fuel Products Can Be Exported – Where Do They Go?



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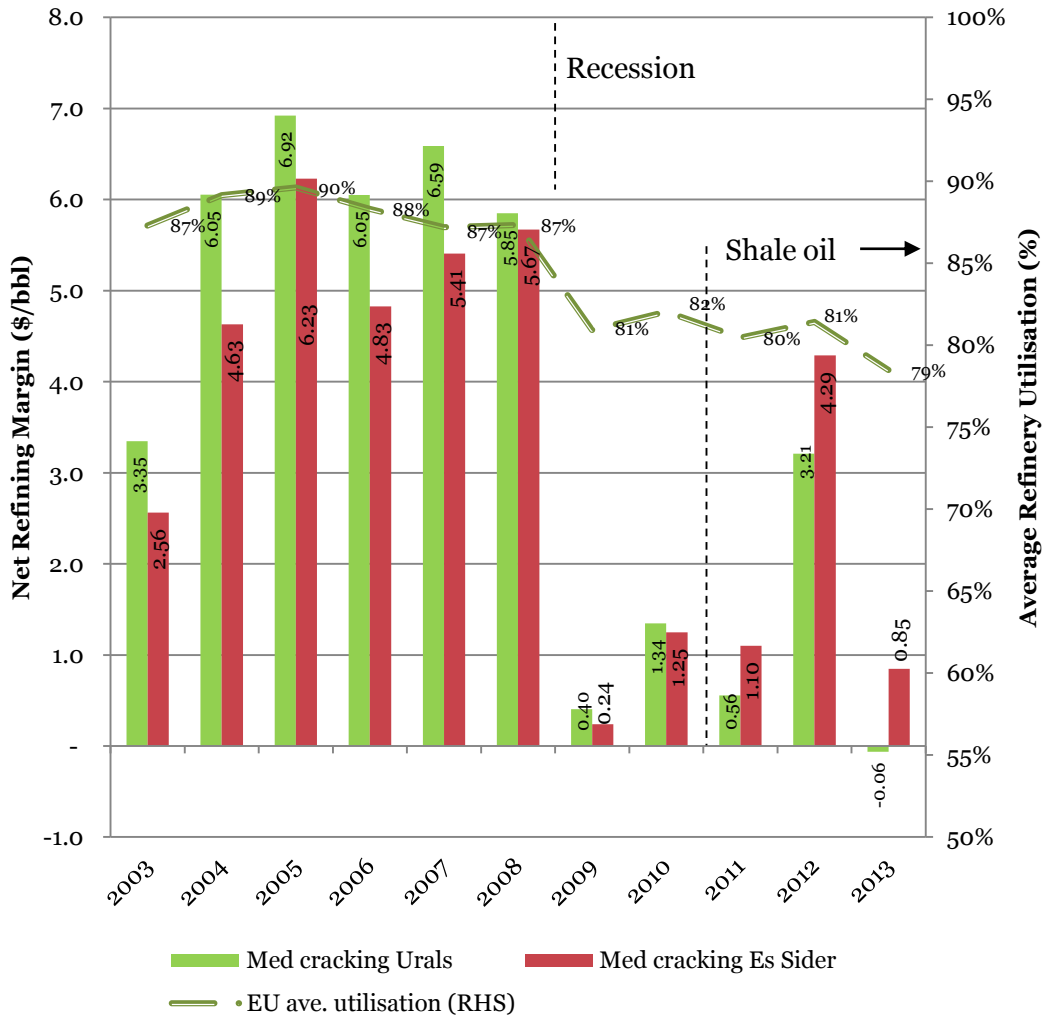
Destinations of US Diesel and Jet Fuel Exports



US Exports: The Impact on European Refining has been Catastrophic



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- Under current regulations, the US cannot export crude oil, so it exports fuel products instead
- The onslaught of surplus products is crippling the economics of coastal refiners in Western Europe
- The majors are selling again. It has little to do with
“surplus refining capacity”
 ..and more to do with dumping by the US due to out-of-date regulations

You've Probably Heard Refining is "Unprofitable": Think Again



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- The major oil companies have a track record of selling refineries whenever margins are low, usually to:
 - National oil companies
 - Niche refiners; or more recently
 - Trading companies
 - These poorly timed sales have transferred significant capital value to the buyers

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Oil Market Manipulation: It Has Attracted the Attention of Regulators



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- On 14 May 2013 the EU Commission launched an enquiry into potential manipulation of oil prices through the Platts ⁽¹⁾ Market-on-Close oil price assessment process. European competition regulators are reviewing potentially anomalous activities by MOC participants, which may have been taking place since 2002
- That this investigation was initiated should not have surprised anyone. A major investigative article in *The Economist* in May 2012 ⁽²⁾ demonstrated that the MOC could, in certain circumstances, be used to manipulate oil prices (either up or down)

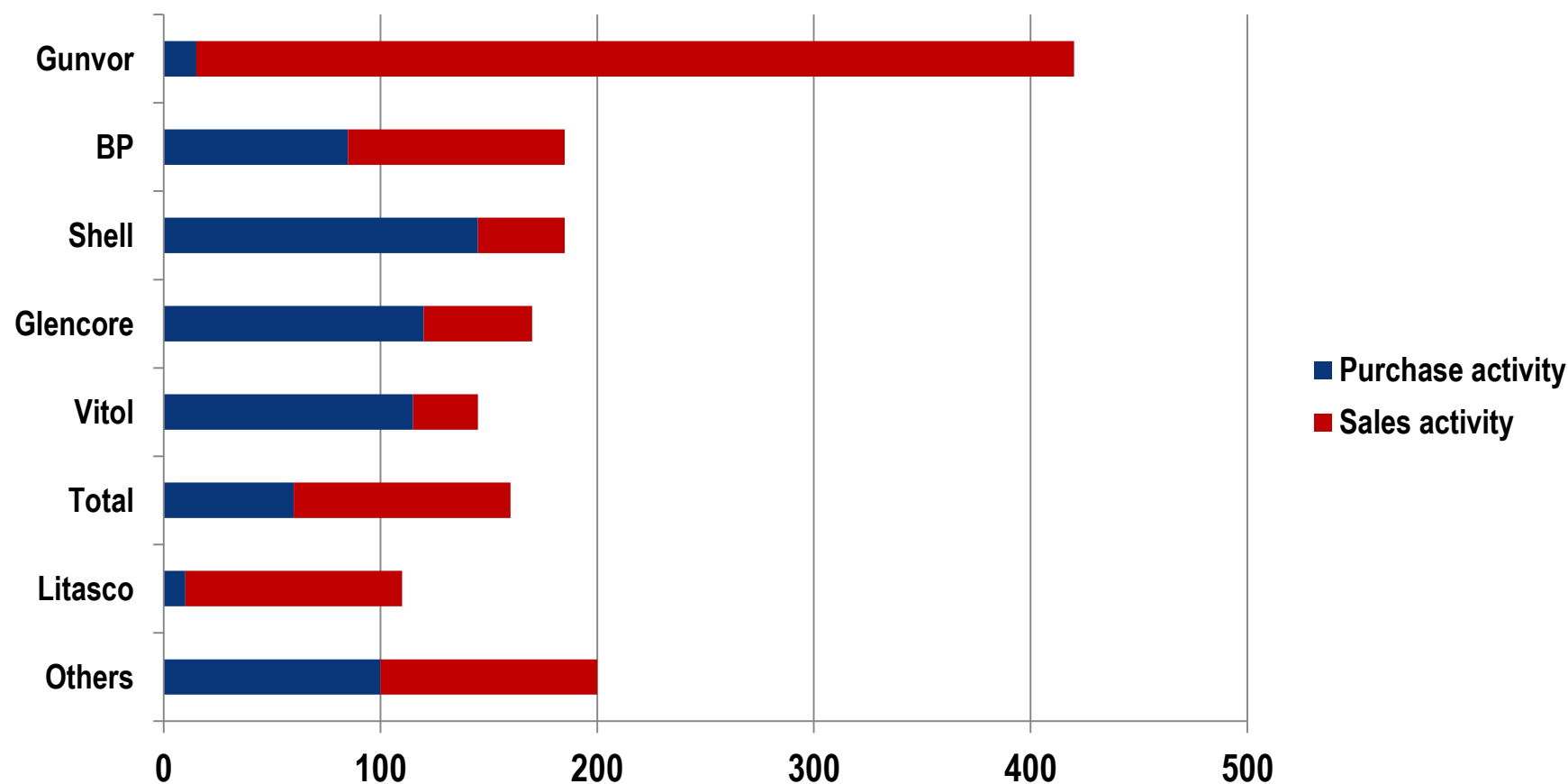
(1) Platts is the main Price Reporting Agency for the oil industry

(2) “Gunvor: Riddles, mysteries and enigmas” *The Economist*, 5 May 2012

Oil Market Manipulation: Spot Prices are Not Always What They Appear to Be



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Number of appearances in the Platts MOC window (Jan 2005 – May 2009)

Source: *The Economist*, May 5th–11th 2012

Conclusions: Where Are the Opportunities?



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- It should be apparent that hydrocarbon fuels will predominate for the foreseeable future
- The industry will continue to invest. Examples include:
 - Unconventionals in new regions (Europe, China, elsewhere);
 - Deep sea vessels to transport LNG;
 - Pipelines to deliver gas and unconventional oil to new markets;
 - Railways if pipelines are too difficult;
 - Increasingly harsh frontier offshore areas (nothing new about that), such as the Arctic, deep South Atlantic, etc.; and
 - Refining to meet ever-more stringent regulations and expand capacity in developing markets.

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