

# Middle East Bulk Liquids Review

Leslie McCune

Managing Director

Chemical Management Resources Limited



Chemical Management  
Resources Limited



Chemical & Product  
Tanker Conference  
London  
18 March 2015



**Short-term expertise for **petrochemical** and **petrochemical supply chain** projects  
..... focused on the Middle East**

**Independent** advice on

- Competitive intelligence
- Supply chain benchmarking
- Business development
- Strategy development
- Market feasibility
- Petrochemical training
- Partner selection
  
- ISO tank container expert



## Business Advisors



McKinsey&Company

AlixPartners

booz&co.



Nexant



## Producers



ارامكو السعودية  
Saudi Aramco



Royal Commission for  
Jubail and Yanbu (RCJY)  
الهيئة الملكية للجبيل وينبع



ExxonMobil  
Chemical



## Supply Chain Providers

HOYER  
GLOBALTRANSPORT

BERTSCHI



DB SCHENKER



TRIFLEET  
LEASING



International Tank Container Organisation

CIMC 南通  
CIMC ENRIC



Vopak



AL OREES



الشركة العربية لمراقبة تخزين الكيماويات  
ARABIAN CHEMICAL TERMINALS

GREIF

# Middle East Bulk Liquids Review

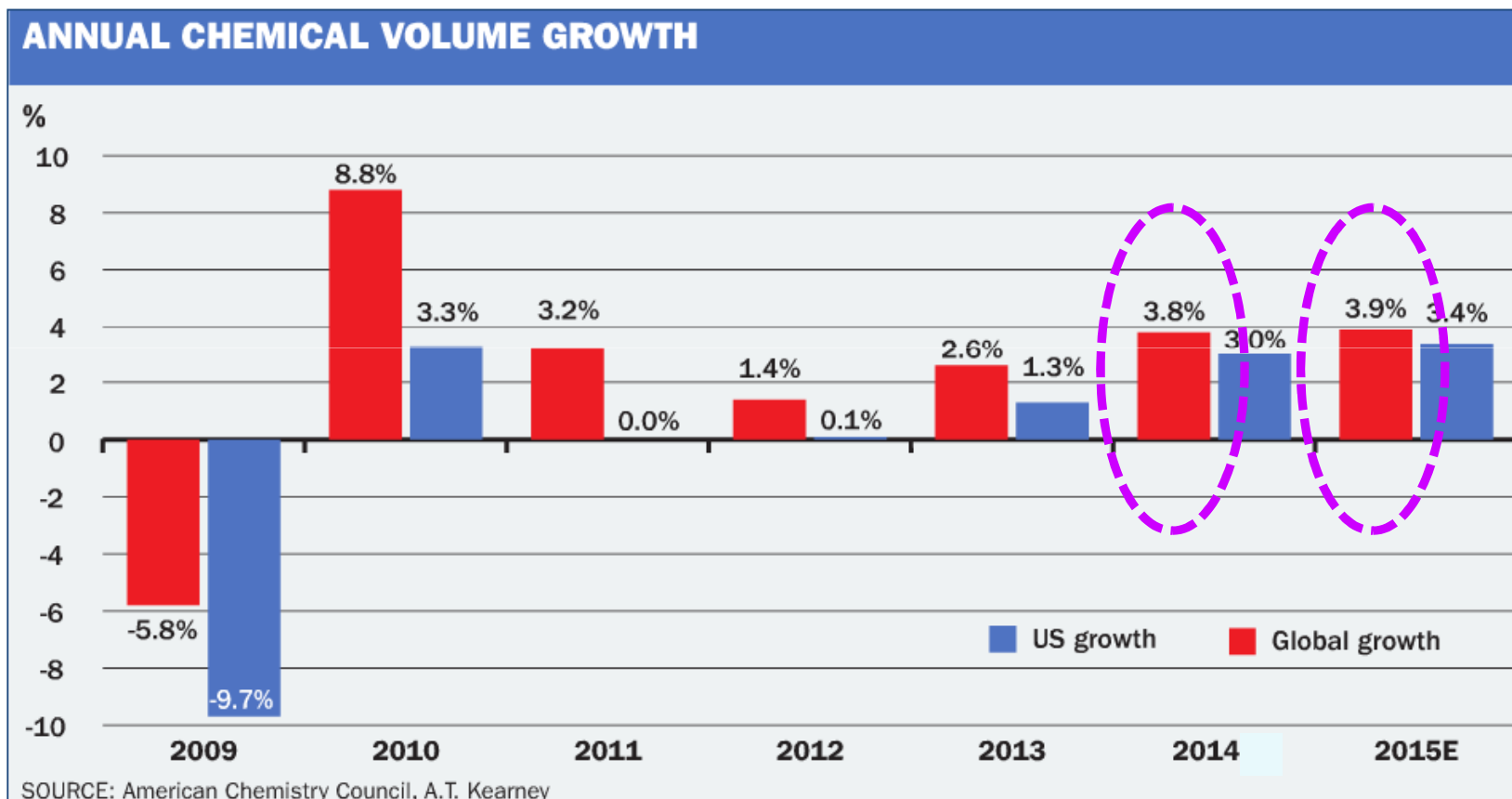
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- **Middle East Market Context**
- Good News
- ..... Not So Good News
- Refinery And Petrochemical Projects
- Conclusions





## 3.8 % Global Chemical Growth Best In 4 Years





## Increasing Chemical Trade Between Regions



**ExxonMobil**  
*Chemical*

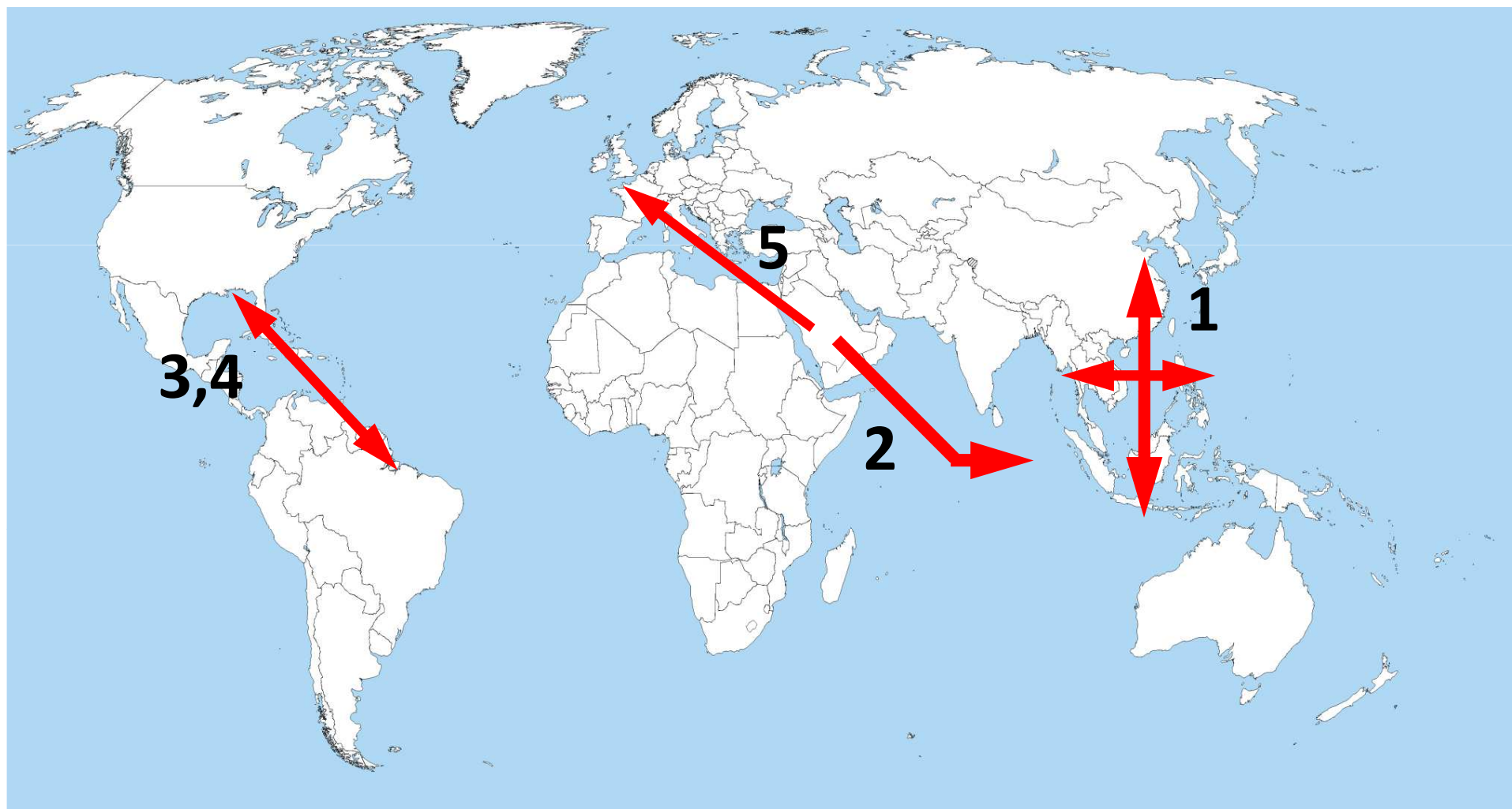
“10 years ago, the volume of chemicals traded between regions was 5% of global production capacity.

Today, it has grown to 10%. By 2020, it will be nearly 20% of production capacity.

Stephen Pryor, President  
ExxonMobil Chemical  
March 2014



## Top 5 Trade Lanes For Organic Chemicals





## Hydrocarbon Reserves Fuel Petrochemical Growth



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- GCC\* 10% of global production
- Production has grown 10% *a year* for the past 10 years
- Exports are 85% of GCC production
- High-growth Asia is the main export destination
- Preferential access to China
- GCC remains lowest cost global producer



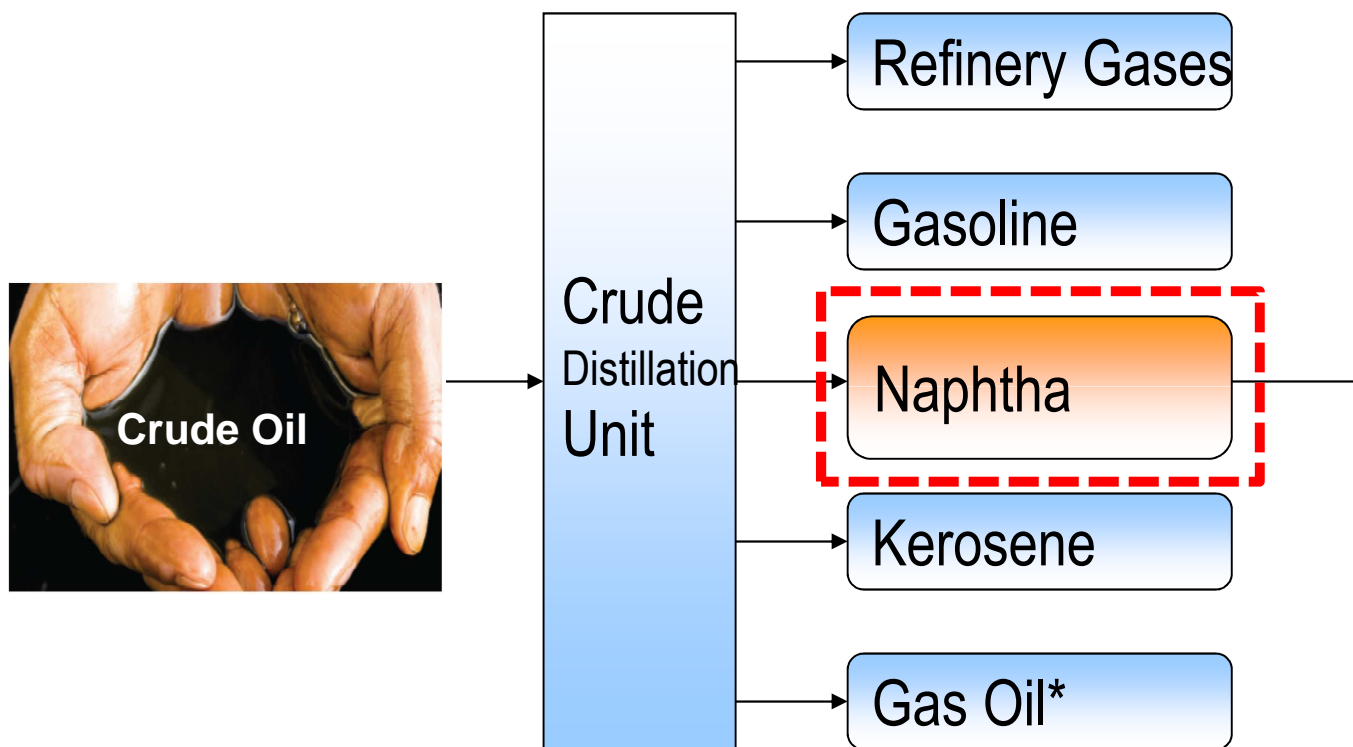
Alibaba



\* GCC = Saudi Arabia, Qatar, UAE, Kuwait, Oman, Bahrain



## Crude Oil Refining - Petrochemicals

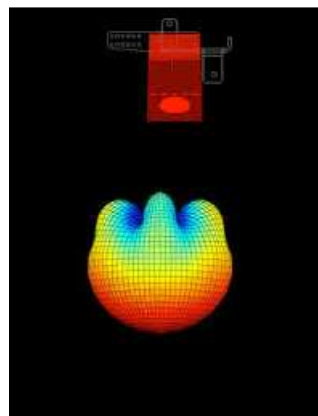
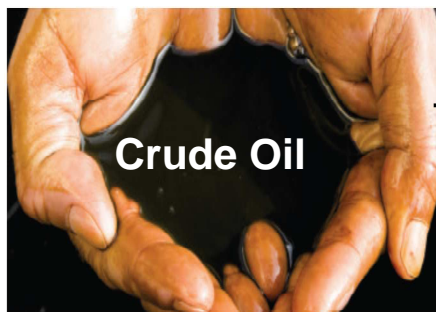


Petrochemical cracker

\* Gas Oil is Diesel but without the dye  
(indicating tax has been paid)



## Crude Oil Refining - Petrochemicals



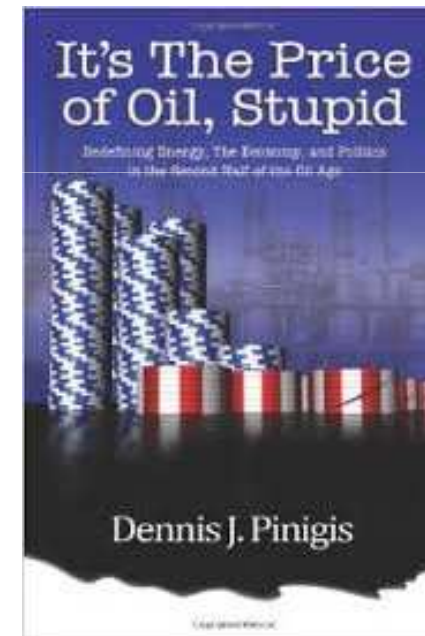
Naphtha



Petrochemical cracker



## Middle East Market Context

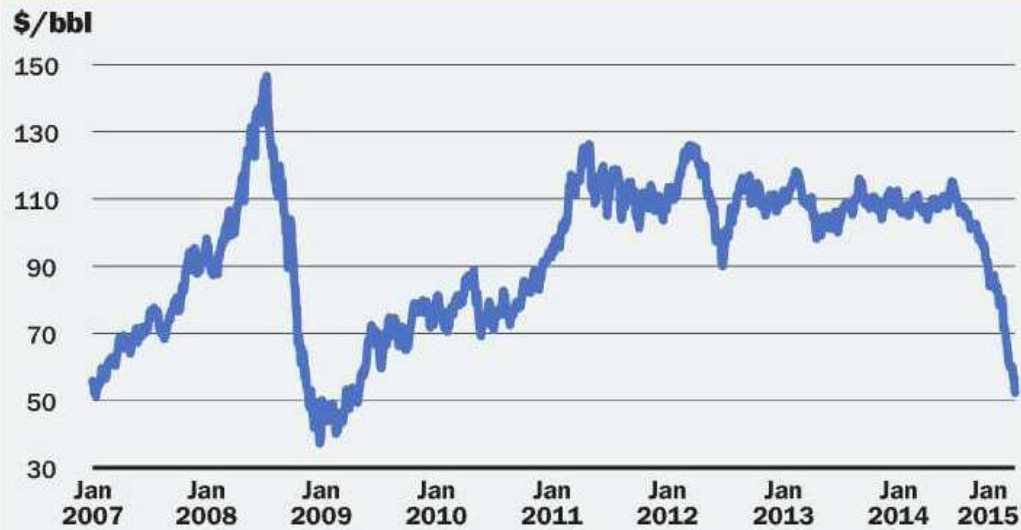




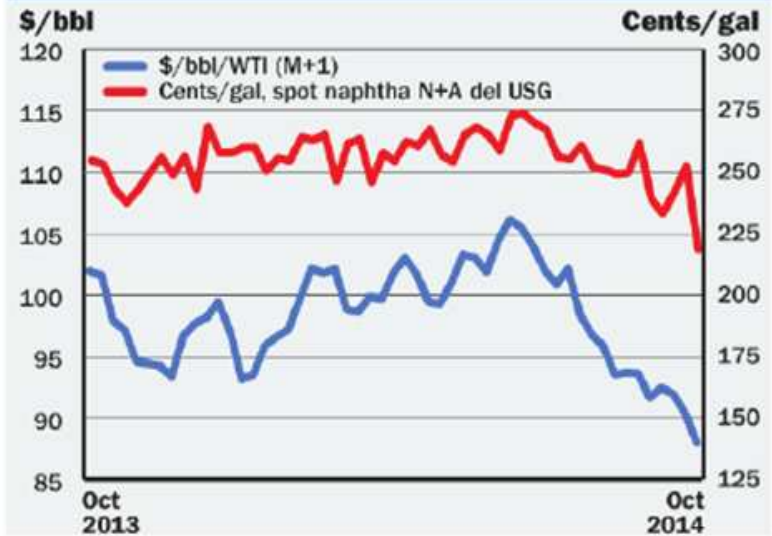
## Concerted *In*action Has Collapsed Oil Prices

- Oil demand fundamentals are weak
- Supply fundamentals are strong
- US shale has forced a change in Saudi Arabia's strategy
- Where oil goes, naphtha goes

### BRENT CRUDE OIL



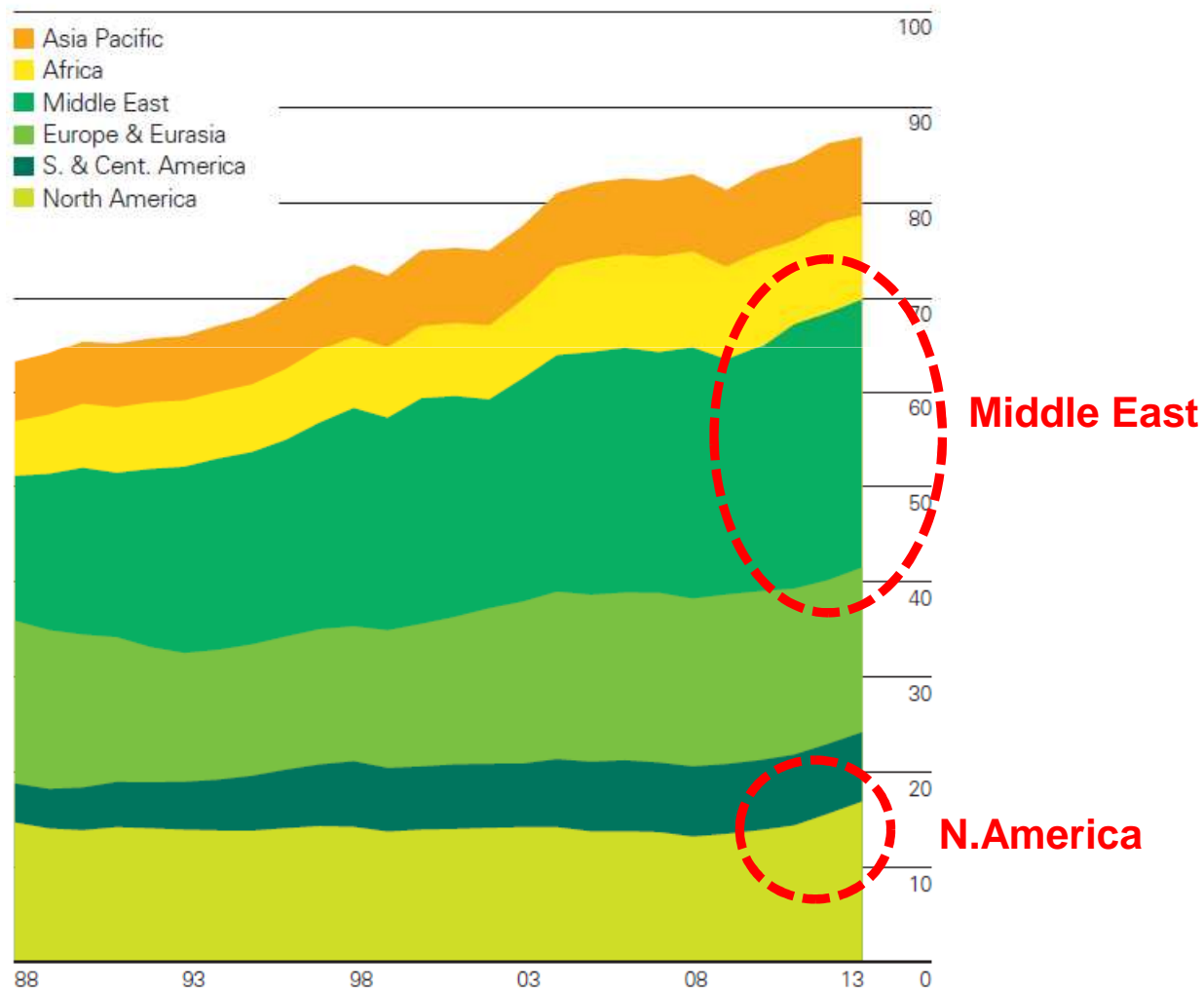
### NAPHTHA TRACKS OIL





## Supply Growth Driven By N.America And Middle East

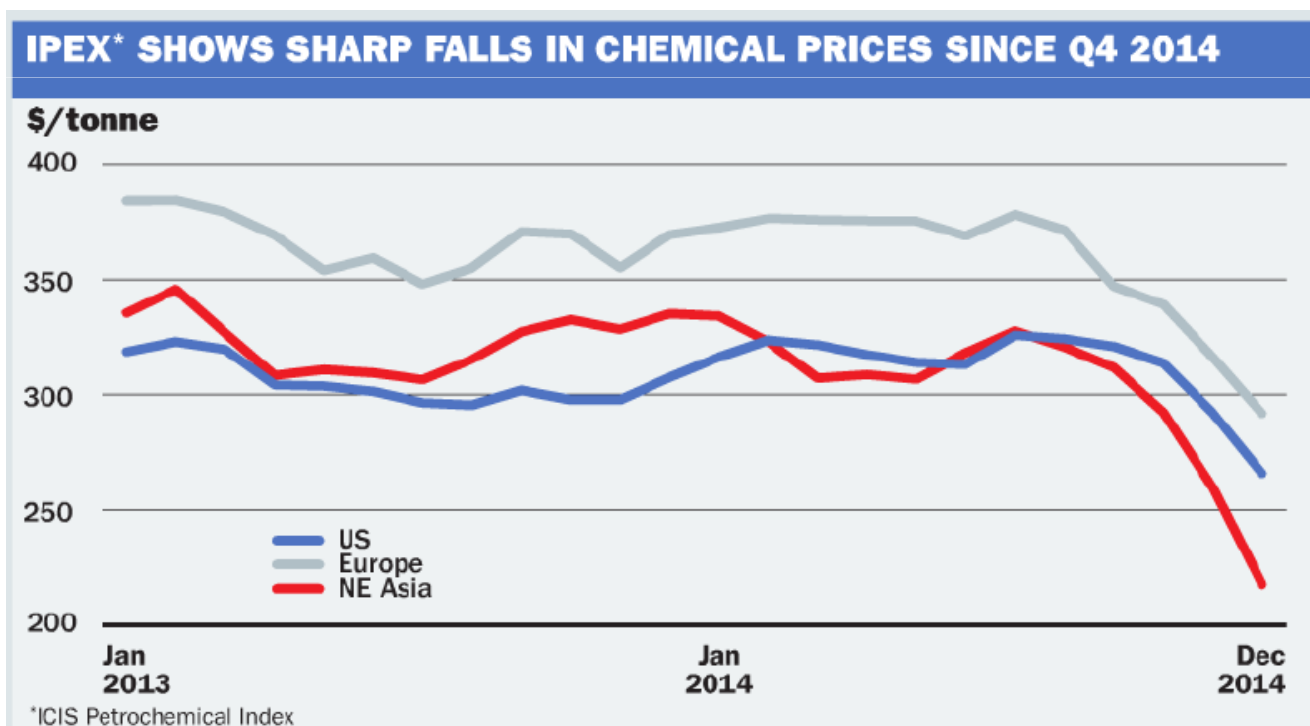
**Production by region**  
Million barrels daily





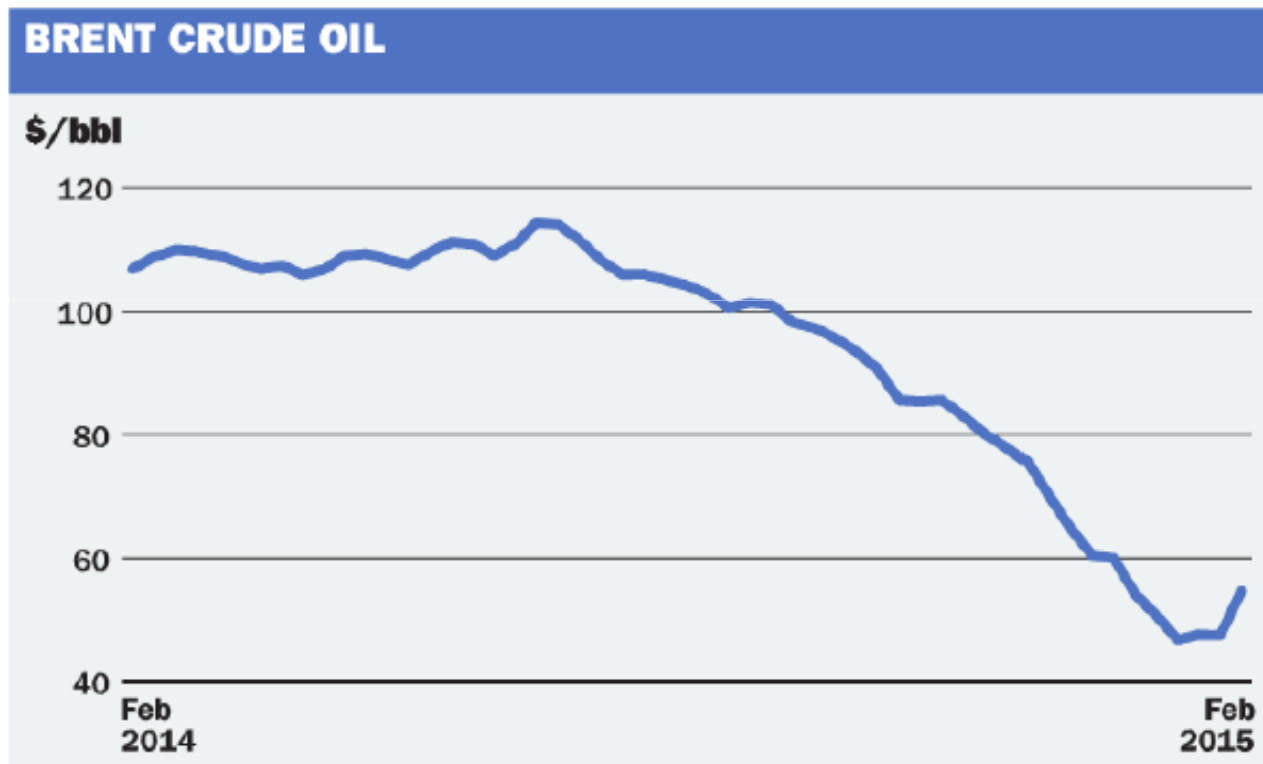
## Formula-Driven Petrochemical Prices Fall

- 'Basket of products' indices are automatically pulled down by falling crude prices
- More volumes are Contracted.
- More Contracts include oil-related formulas  
e.g. Ethylene (\$/tonne) = \$\*\*\* + (\*\* x Oil in \$/bbl)





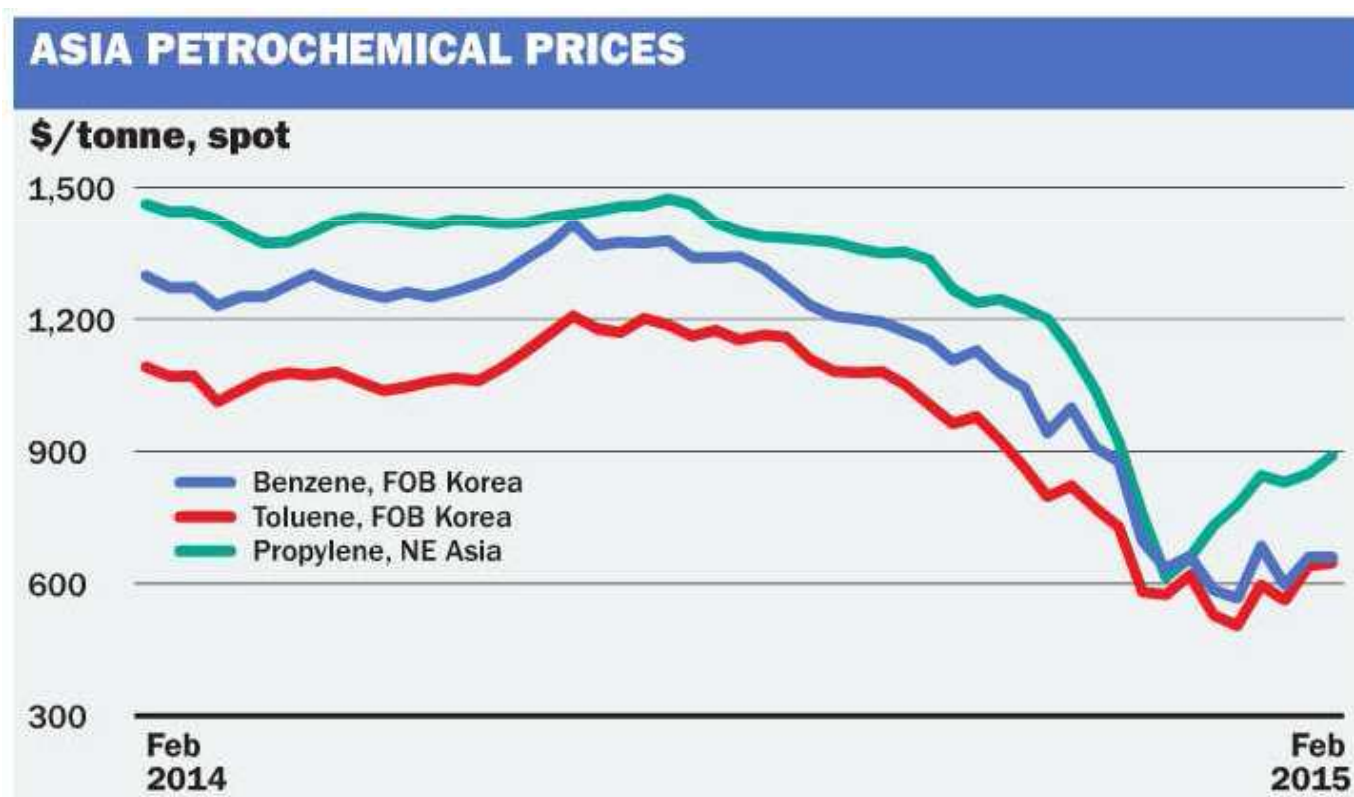
## 'Dead Cat Bounce' Or Sustained Recovery?





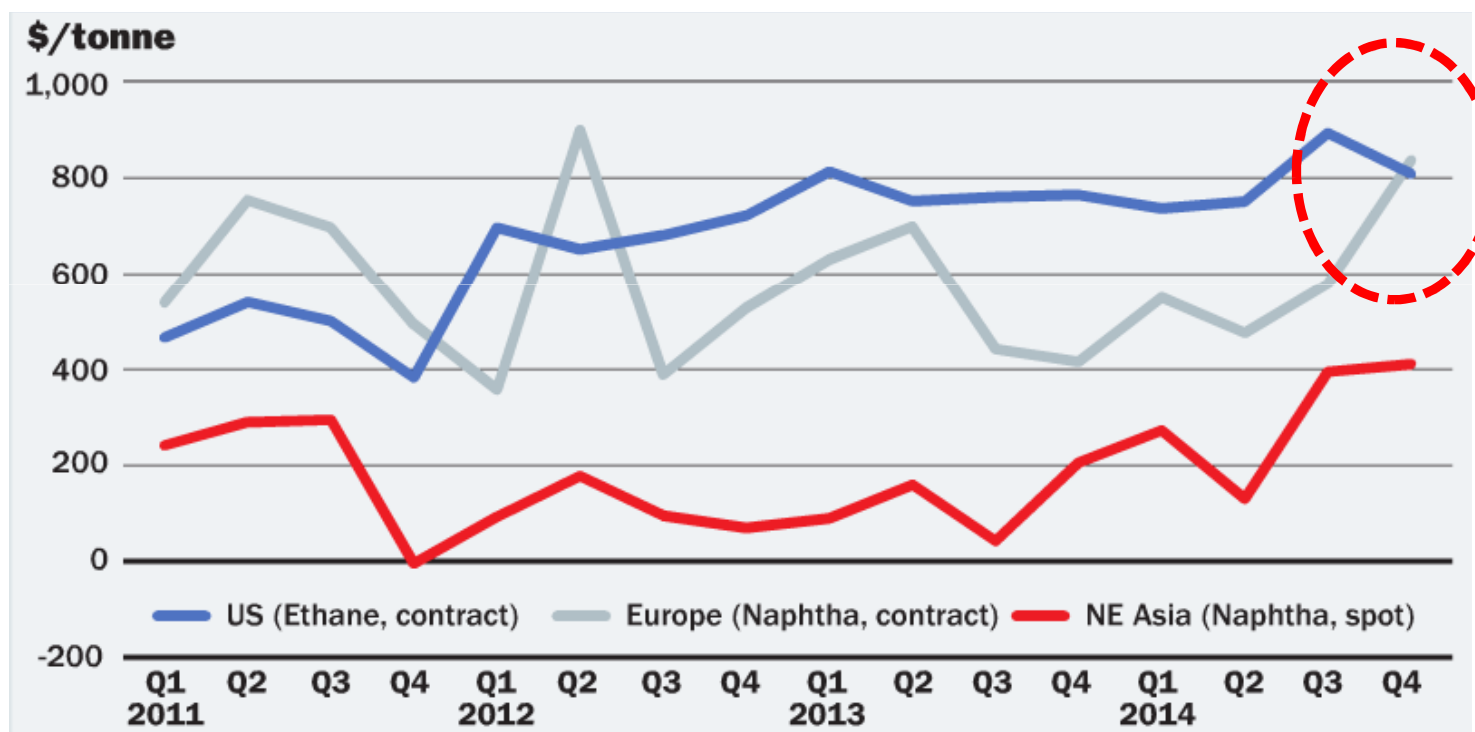
## Petrochemical Prices Track Oil Up

- ½ day “*Double, Double, Oil And Trouble...*” Seminar tomorrow, Grange City Hotel, London





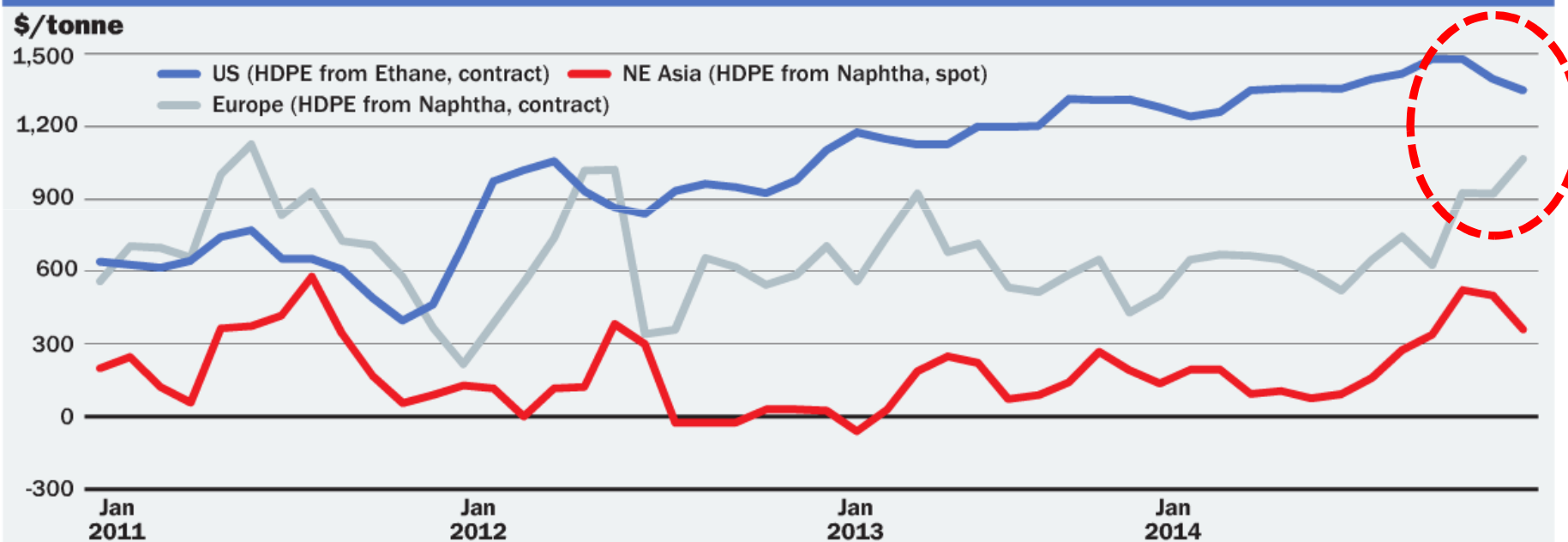
## European (Oil-based) Naphtha Cracking Returns Now Better Than US (Ethane) Cracking





But If *Only* Interested In Ethylene Derivatives  
US (Ethane) Cracking Still Higher Margin Than  
European (Naphtha) Cracking

### EUROPE MARGINS GAIN ON US





## Middle East Market Context

- Collapse in oil revenues .... but lower feedstock costs for naphtha-based Europe, Asia
- Collapse in petrochemical prices
- Global GDP growth fillip of 1% *if* oil prices stay below \$55/bbl - will stimulate demand for Middle East bulk liquid exports
- No consensus on where oil price goes next
- Low oil prices ..... make no difference to the Middle East's cost base  
..... make some difference to the region's relative competitiveness  
..... make a lot of difference to the price of its products (and margins)
- Oil price volatility validates GCC's economic diversification strategy (away from a dependency on the 'two pillars' of oil and gas)
- Huge investment in GCC industrial infrastructure unaffected

# Middle East Bulk Liquids Review

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- The GCC's refinery and petrochemical build-out continues unabated
- GCC increasing petrochemical capacity by over 30% to 184 mt by 2017
- Two new 400,000 bbl/day refineries just opened in Saudi Arabia (SATORP, YASREF)

Therefore, convert the extra oil production into RPP for export.

Result ? Extra domestic gas supply + added-value RPP exports

- Significant increase in downstream *specialty* liquid chemical production, pressurising the export infrastructure (incl. Sadara)
- New bulk liquid chemical storage facilities – Jubail (JCSSC, ACT), Dubai, Qatar,...
- Critical mass being developed for *specialty* bulk liquid chemical supply chain infrastructure
- New rail network will offer intermodal options from 2018

- GCC bulk liquid petrochemical exports: 

	2014	2018
Value (\$Bn)	10.1	10.1
Volume (mtpa)	1.1	1.1

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## ..... Not So Good News

- Waning commitment of some international partners to GCC JVs (e.g. Al Karaana, Qatar)
- Commercial terms changing – Saudi Arabia, Muntajat, etc.
- Shortage of waterfront terminals in the Gulf
- Little third-party bulk liquid storage
- Port congestion
- Trade imbalance - spot vessels need to be attracted into the Arabian Gulf
- Complex import/export procedures
- Terminals designed for bulk chemicals (creating inefficiencies for specialties)

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## Over 15.6 Million *Additional* Tonnes By 2020

	Project	Product	Tonnes p.a.	Start-up
Saudi Arabia	SATORP	Paraxylene Benzene	0.70 mt 0.14 mt	2014
	Sadara	Specialty chemicals	0.95 mt	2015
	YASREF	Paraxylene Benzene	0.70 mt 0.14 mt	2015
	Petro Rabigh II	Paraxylene Benzene Phenol/ Acetone	1.34 mt 0.17 mt 0.44 mt	2016
	Ras Tanura	Paraxylene Benzene	1.20 mt 0.29 mt	2016
	Jizan	Paraxylene Benzene	0.65 mt 0.90 mt	2018
Qatar	RLGAP	Paraxylene Benzene	1.3 mt 0.9 mt	2018
UAE	ChemaWEyaat	Paraxylene Benzene Pentane	1.3 mt 0.5 mt 0.8 mt	2019
Oman	BP	Acetic Acid	1.0 mt	2018
	ORPIC	Benzene	0.05 mt	2016
Kuwait	Aromatics-2	Paraxylene Benzene	1.20 mt	2020
	Olefins III	MEG Ethanolamine/Polyols	0.60 mt 0.32 mt	
<b>TOTAL</b>			<b>15.6 mt</b>	



## Advanced Plans For Petrochemicals In Iraq



- Associated gas in Iraq gas is 'wet' – excellent for petrochemicals
- Gas now being flared off
- Flared off gas would feed 3 world scale petrochemical crackers

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## Middle East Bulk Liquids Review

- Several new world-scale refineries in the GCC
- New petrochemical projects
- Major new bulk liquid chemical flows out of the GCC
- Step-change in specialty chemical flows from the region
- Compelling oil, refined petroleum product and petrochemical economics will continue
- Petrochemicals viewed as a critical enabler of GCC economic diversification - leverages hydrocarbon resources, creates jobs
- Economic diversification priorities guarantee long-term commitment to investment in bulk liquid petrochemical infrastructure .....

..... which will need a fleet of ships at the end of it!



**Thank you** شكراً

**Leslie McCune**

lm@chemicalmanagement.co.uk  
+ 44 7783 042 664  
www.chemicalmanagement.co.uk

