Middle East Petrochemicals

A Giant Still Growing or Running Out of Gas ?

Tony Potter

Managing Director

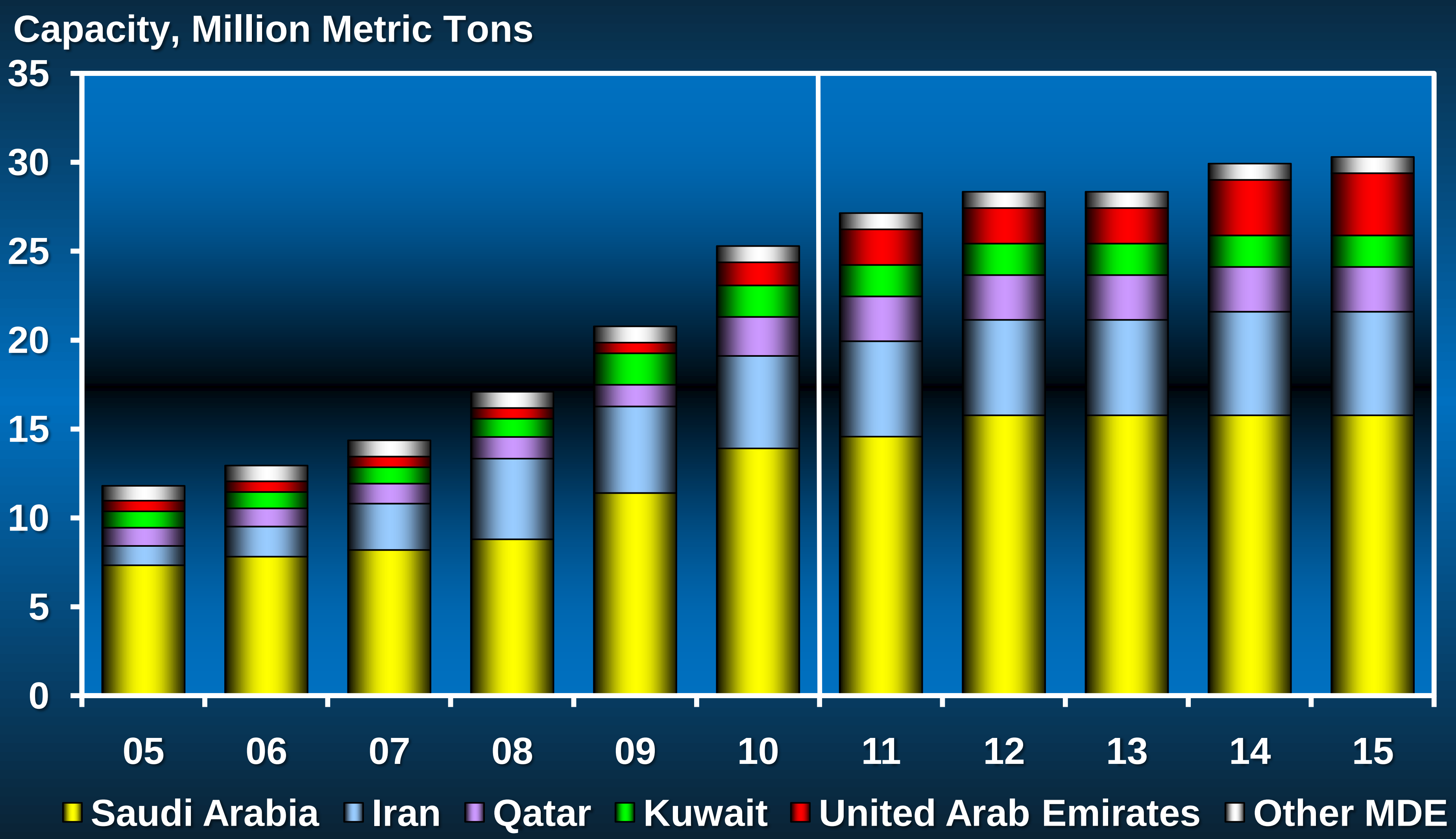
CMAI Middle East & India

May 26, 2011

Fukuoka, Japan

IHS has acquired CMAI

Middle East Ethylene Capacity Is Doubling

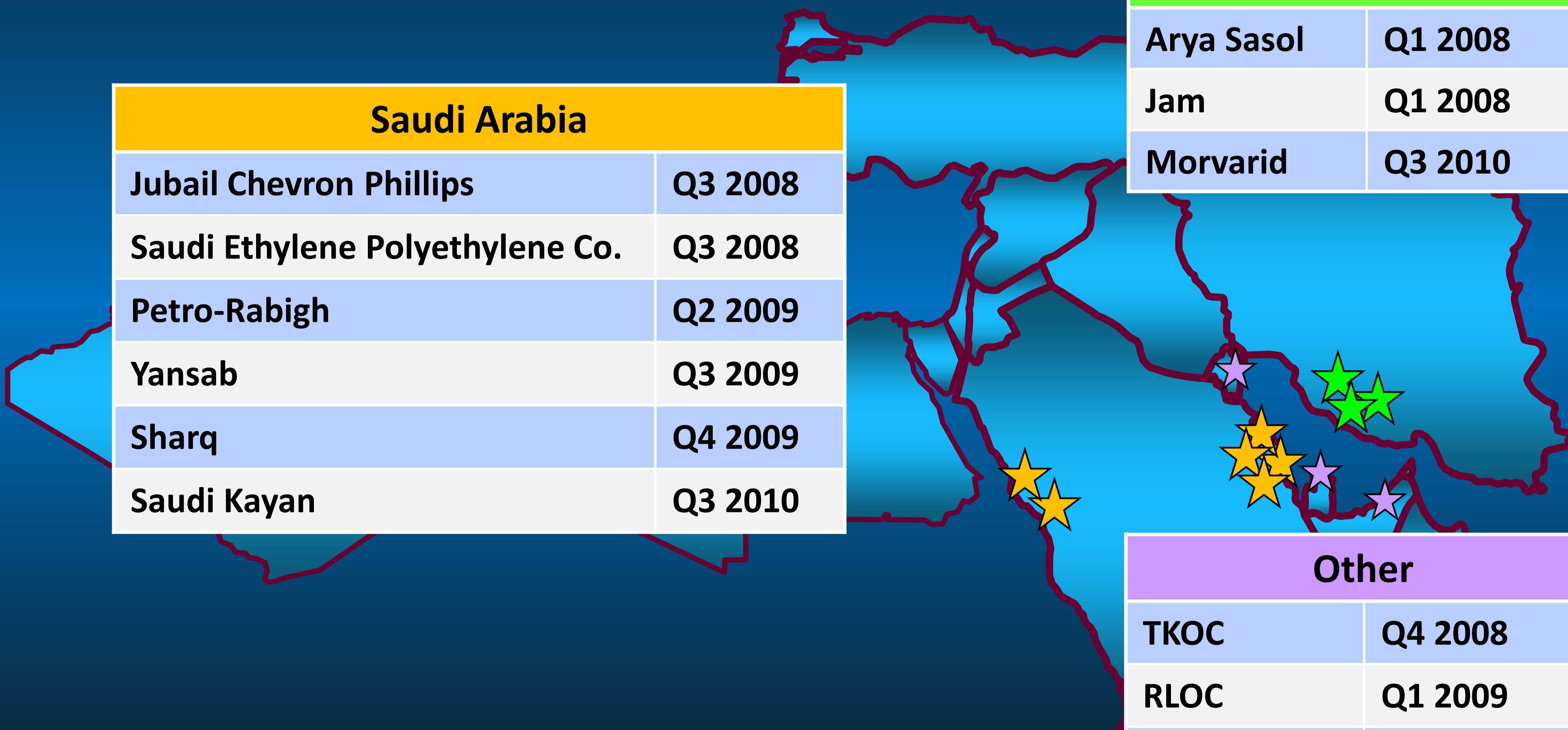


…But Where Is It?

- The story so far….status report
  – The gap between expectations and reality explained
- Future Prospects
  – New capacity developments
  – Trade impact
  – Feedstock availability
  – Feed pricing and competitiveness

The Middle East Story So Far...

Ethylene Capacity Additions 2008-10

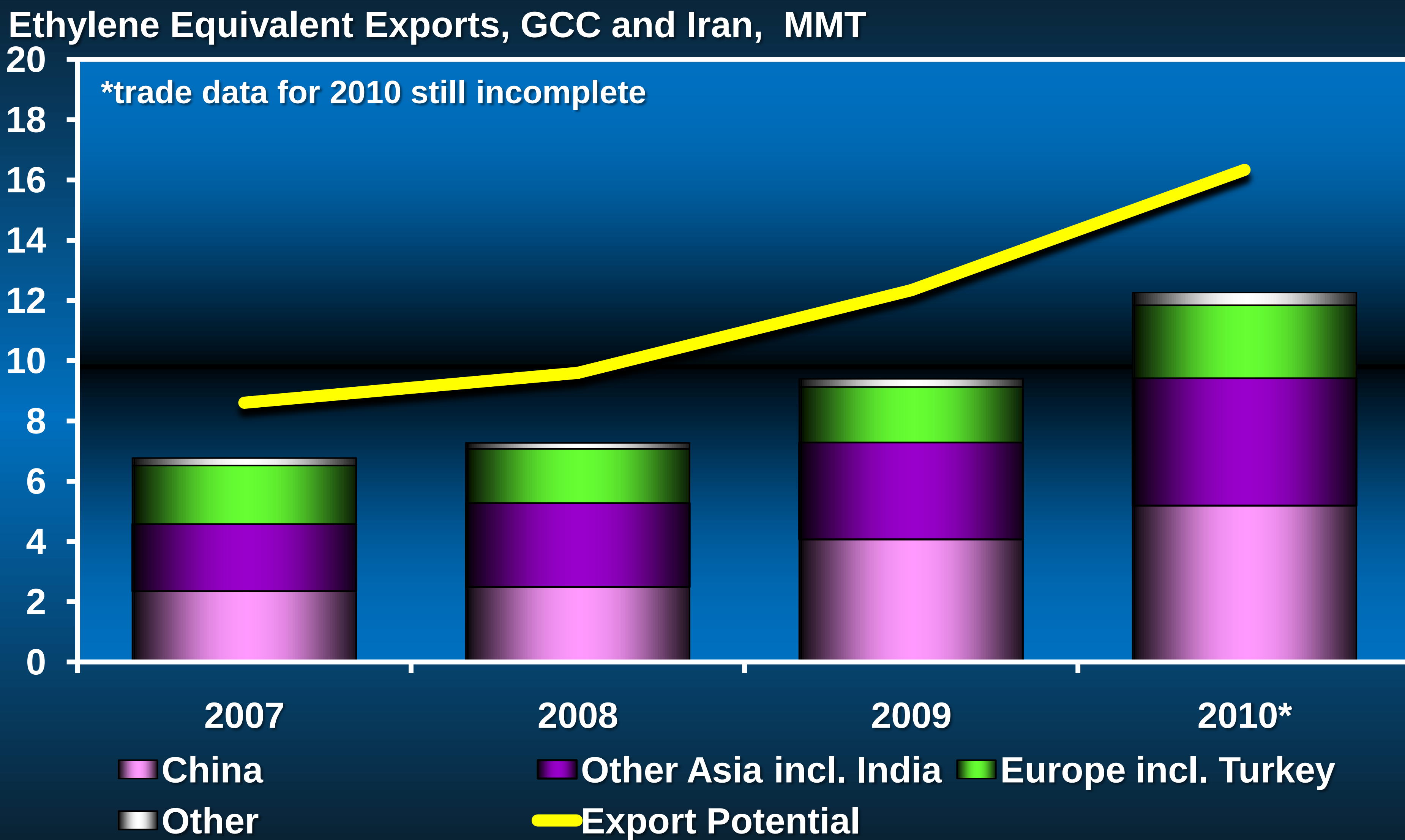


Saudi Arabia	
Jubail Chevron Phillips	Q3 2008
Saudi Ethylene Polyethylene Co.	Q3 2008
Petro-Rabigh	Q2 2009
Yansab	Q3 2009
Sharq	Q4 2009
Saudi Kayan	Q3 2010

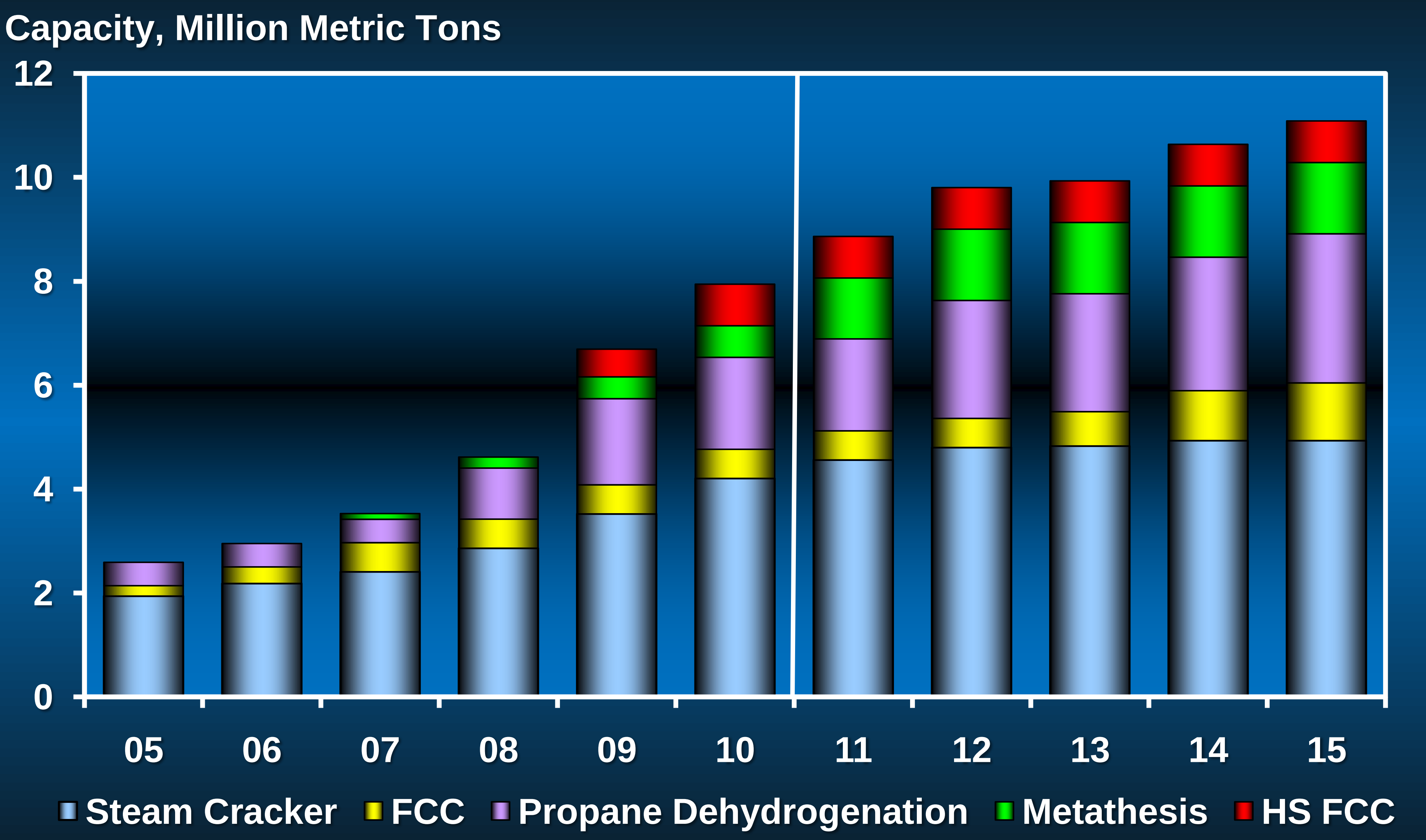
Iran	
Arya Sasol	Q1 2008
Jam	Q1 2008
Morvarid	Q3 2010

Other	
TKOC	Q4 2008
RLOC	Q1 2009
Borouge 2	Q3 2010

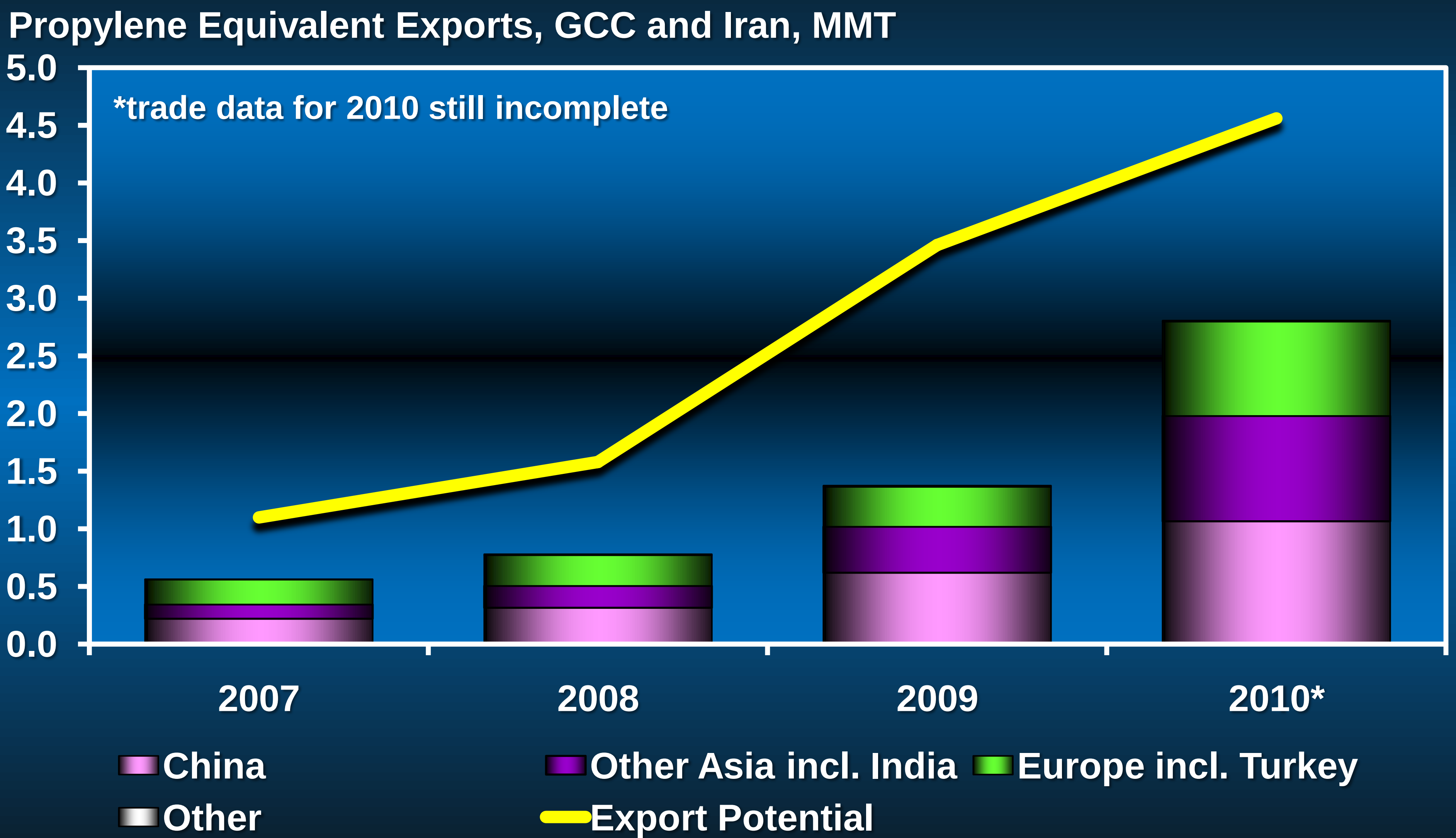
Ethylene Derivative Exports Have Grown



A Major Propylene Player Too

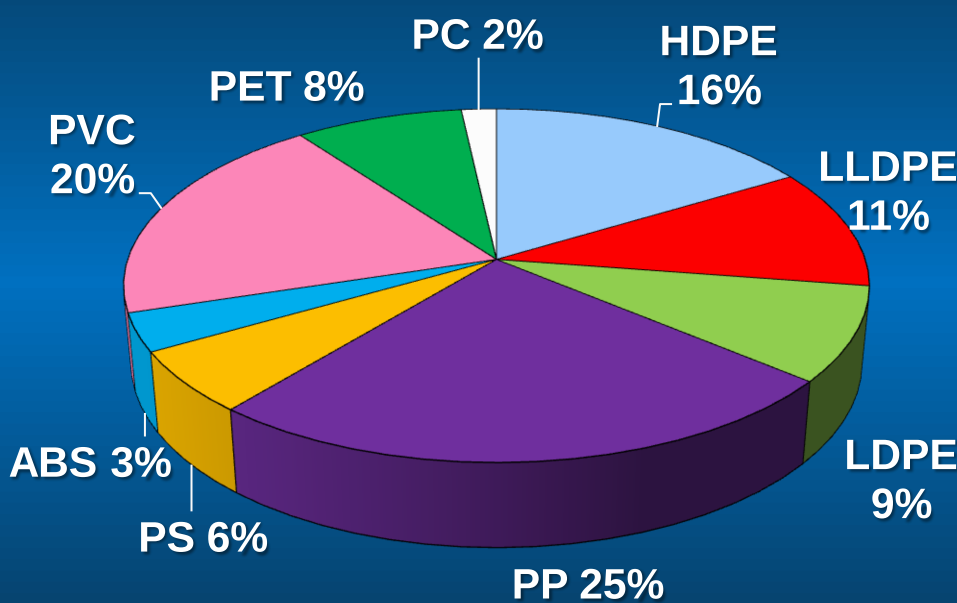


(Poly) Propylene Exports on the Rise



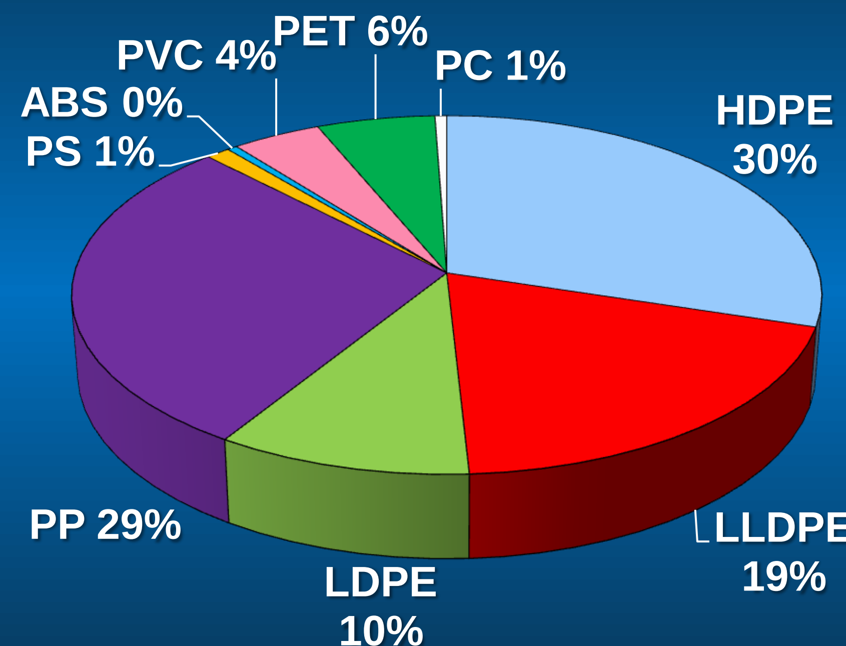
PE/PP Dominate due to Feedstock Advantage

World



Global Resin Capacity:
258 Million Metric Tons

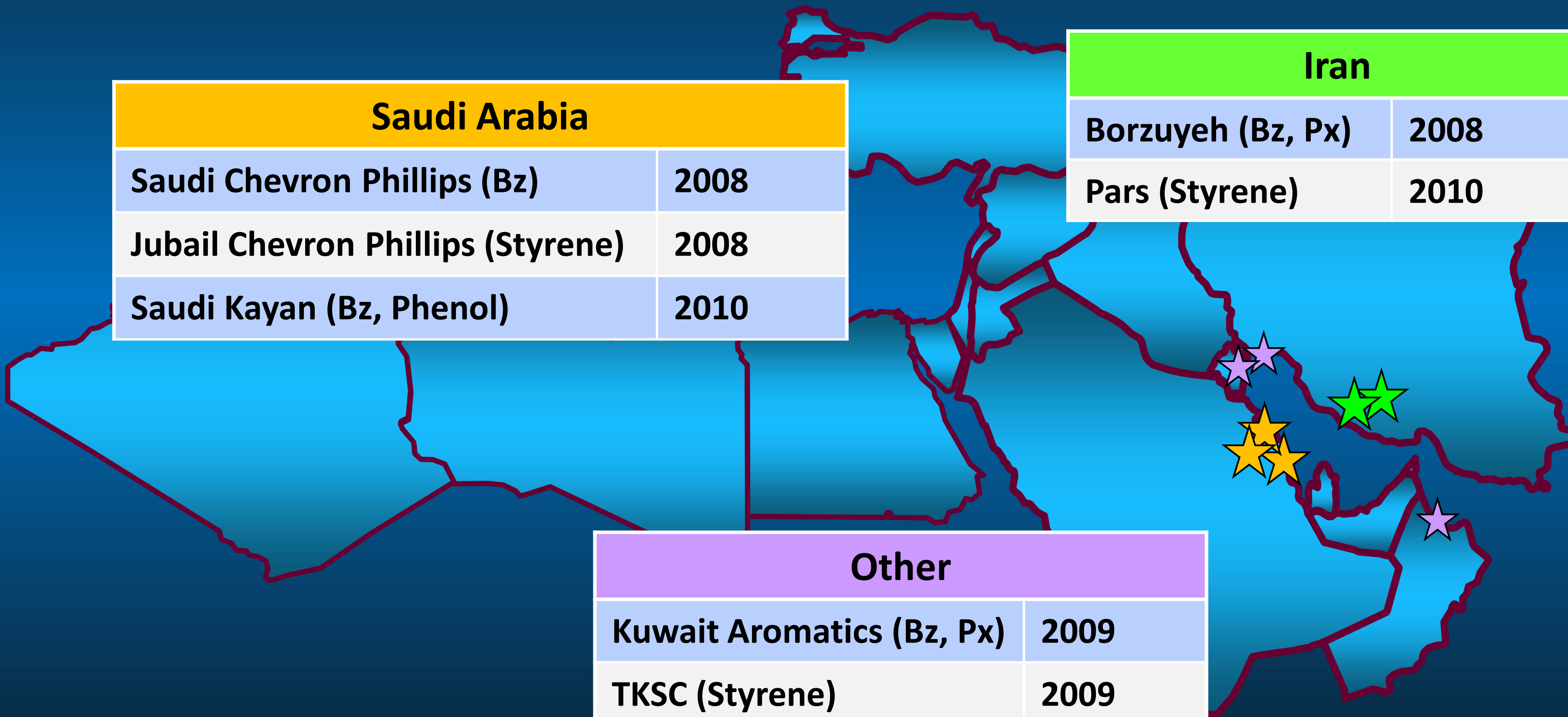
Middle East



Middle East Resin Capacity:
27 Million Metric Tons

Aromatics at a More Modest Pace...

Capacity Additions 2008-10



Saudi Arabia	
Saudi Chevron Phillips (Bz)	2008
Jubail Chevron Phillips (Styrene)	2008
Saudi Kayan (Bz, Phenol)	2010

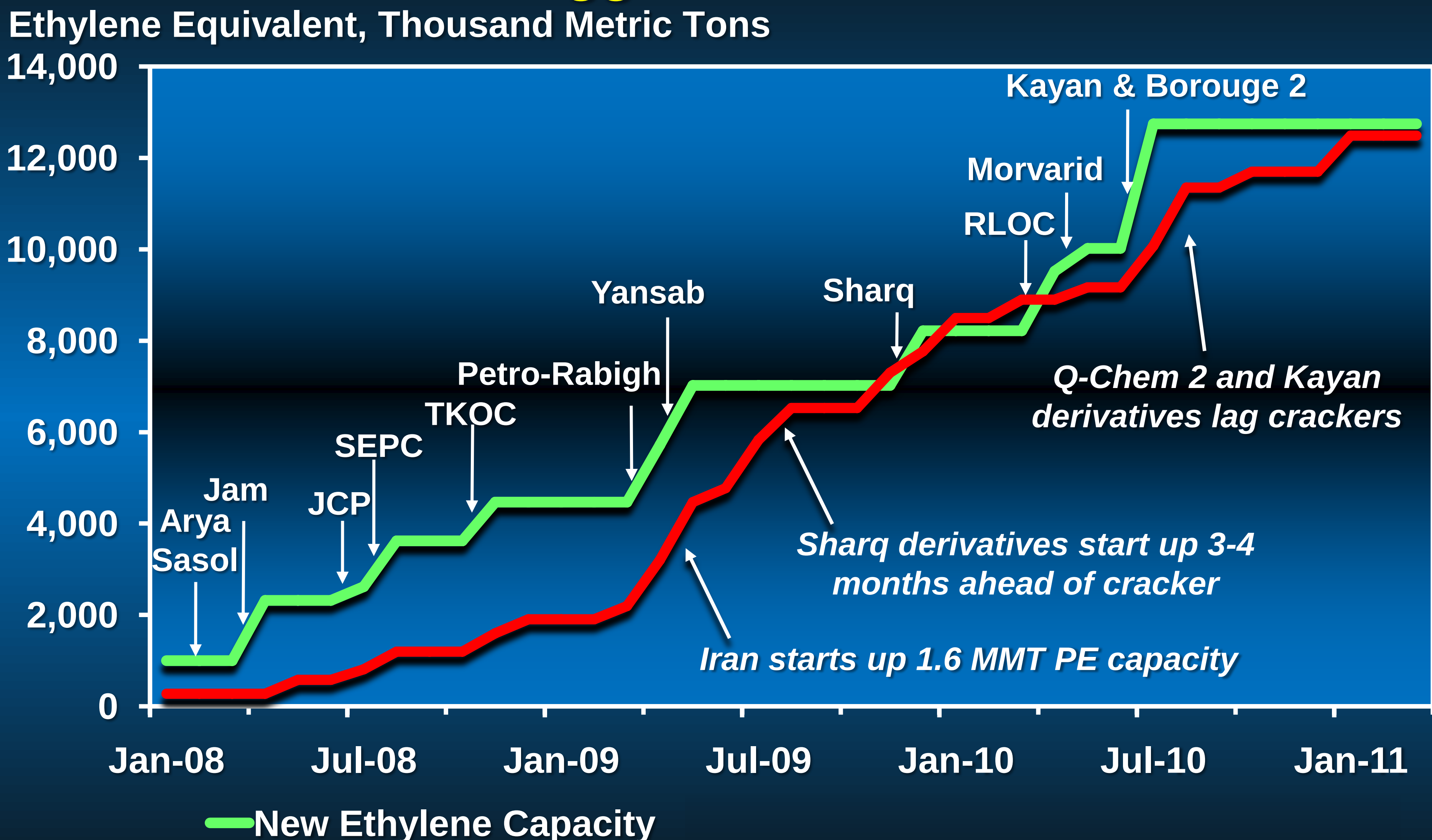
Iran	
Borzuyeh (Bz, Px)	2008
Pars (Styrene)	2010

Other	
Kuwait Aromatics (Bz, Px)	2009
TKSC (Styrene)	2009
Oman Aromatics (Bz, Sty)	2009

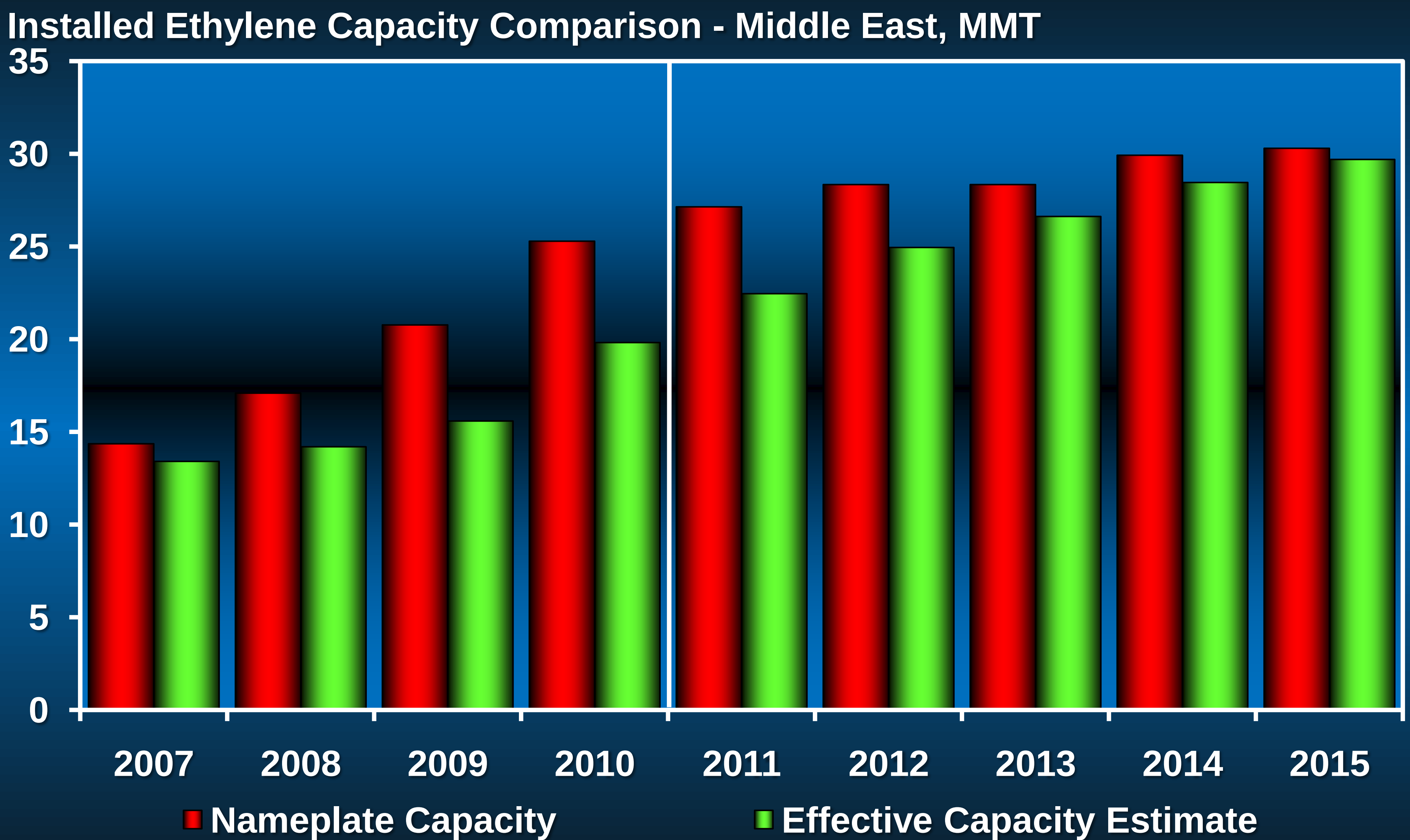
…But Where Is It?

- Cracker delays
- Derivative unit delays and misalignment with cracker schedules
- Over-rated capacity
- Feedstock restrictions
- Stronger demand than expected, led by China

Middle East Ethylene Derivative Capacity Lagged Crackers



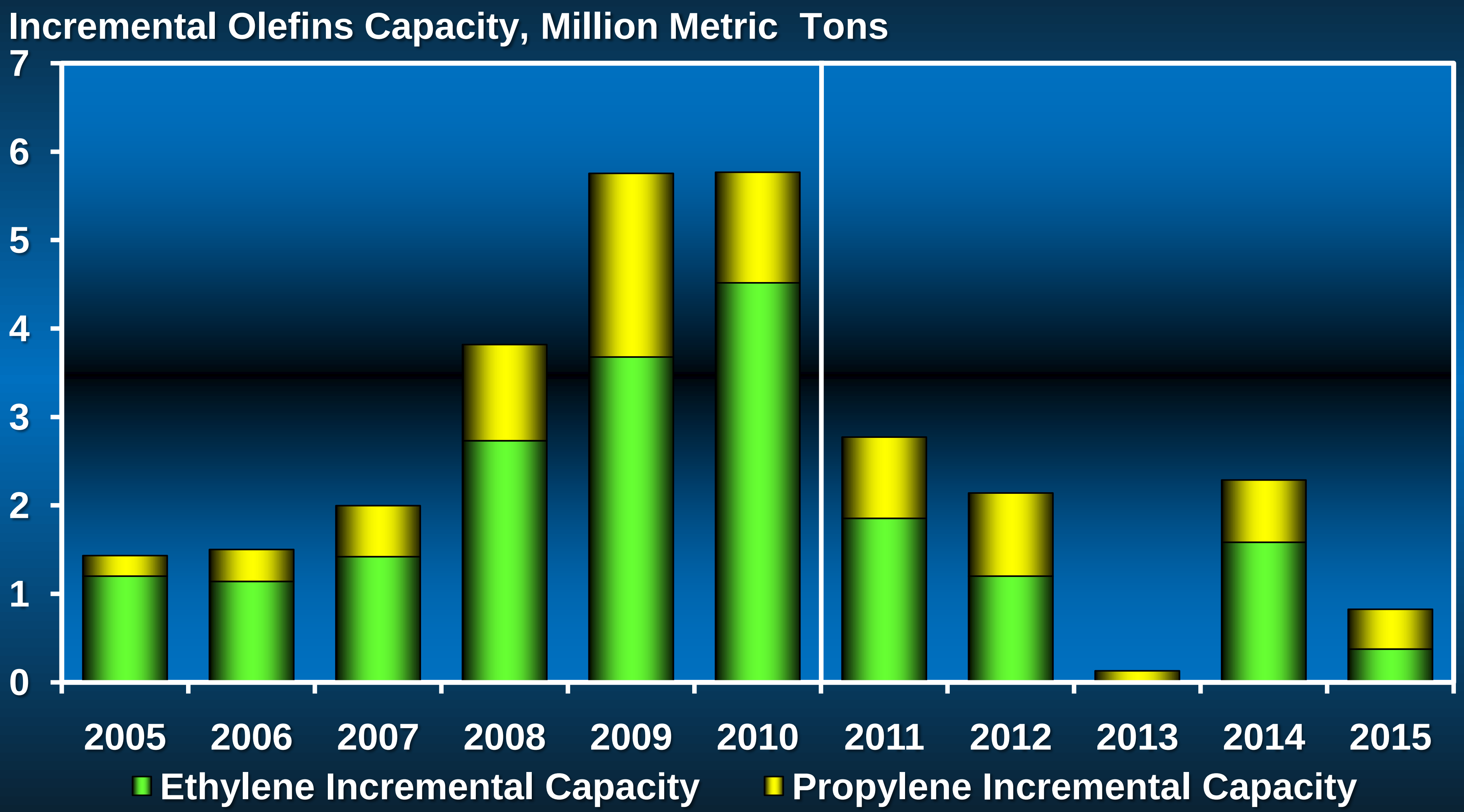
Middle East Project Impact & Perception



The Middle East Is Not Out of Gas

- The story so far....status report
  - The gap between expectations and reality explained
- Future Prospects
  - New capacity developments
  - Trade impact
  - Feedstock availability
  - Feed pricing and competitiveness

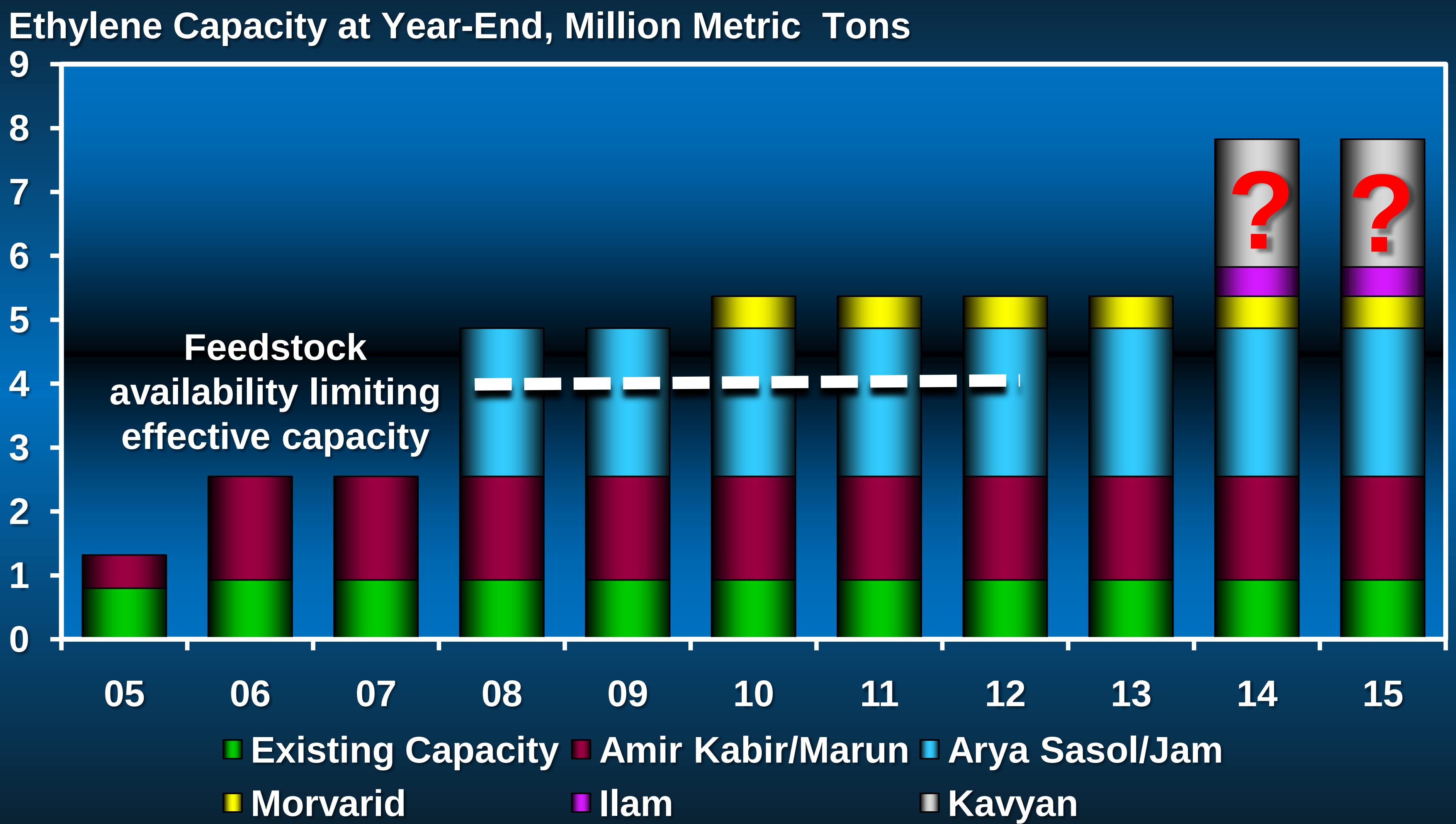
Future Middle East Capacity Additions



Future Ethylene Projects

Country	Company	Timing
Saudi Arabia	Saudi Polymers	4Q 2011
UAE	Borouge 3	2014
Saudi Arabia	Dow-Aramco	2015-2016
Qatar	QP-Partner	2016-17
Algeria	Sonatrach-Total	2016-17
Iran	Kavyan	2014-2016

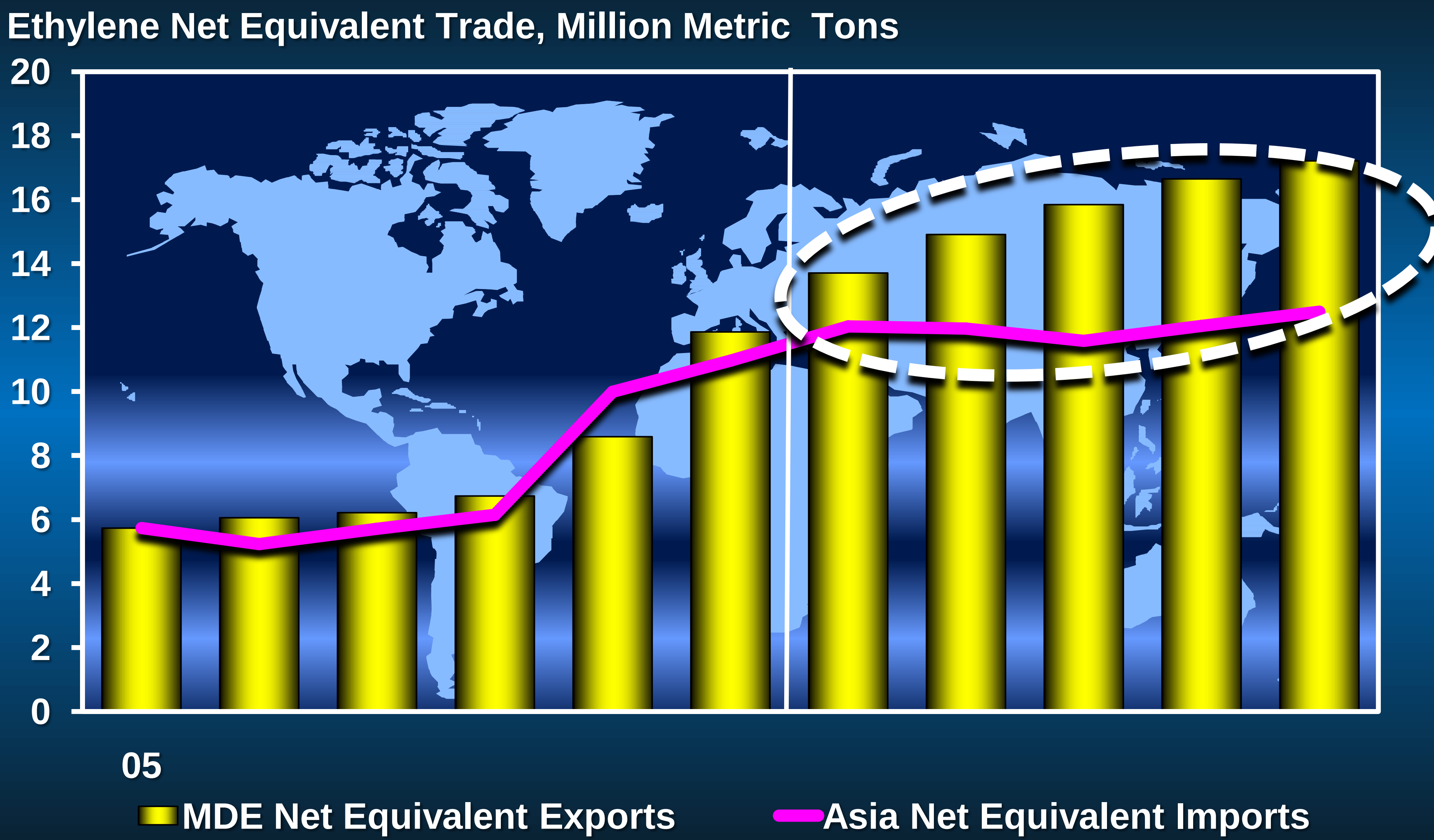
Sanctions Continue to Delay Iran



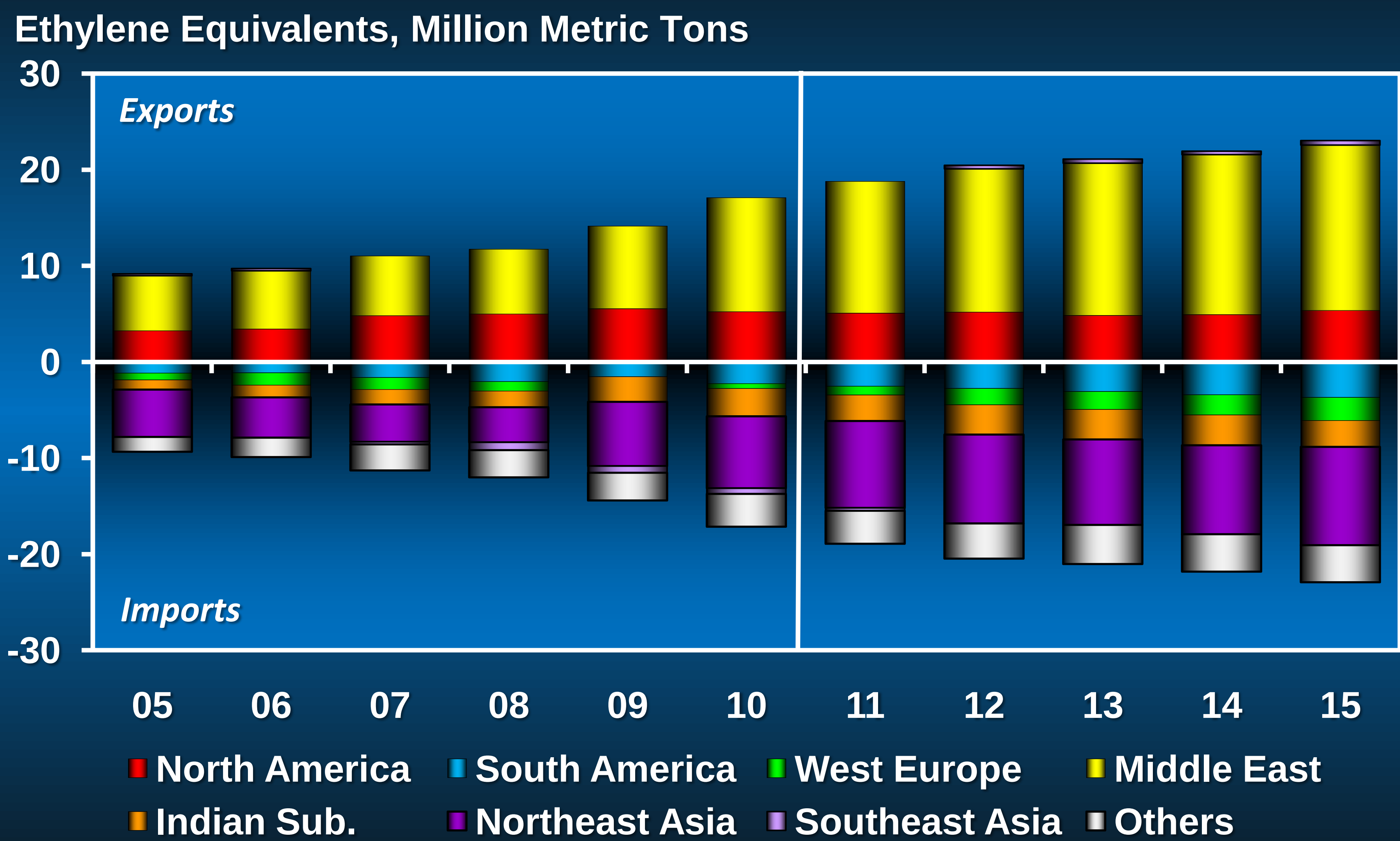
Possible Beyond 2015-16

Country	Company	Timing
Kuwait	PIC	2016-2020
UAE	Borouge 4	2016-2020
UAE	Chemaweeyat/ADBIC	2016-2020
Iran	Persian Gulf	2016-2020
Iran	Gachsaran	2016-2020
Iraq	Studies	2020+

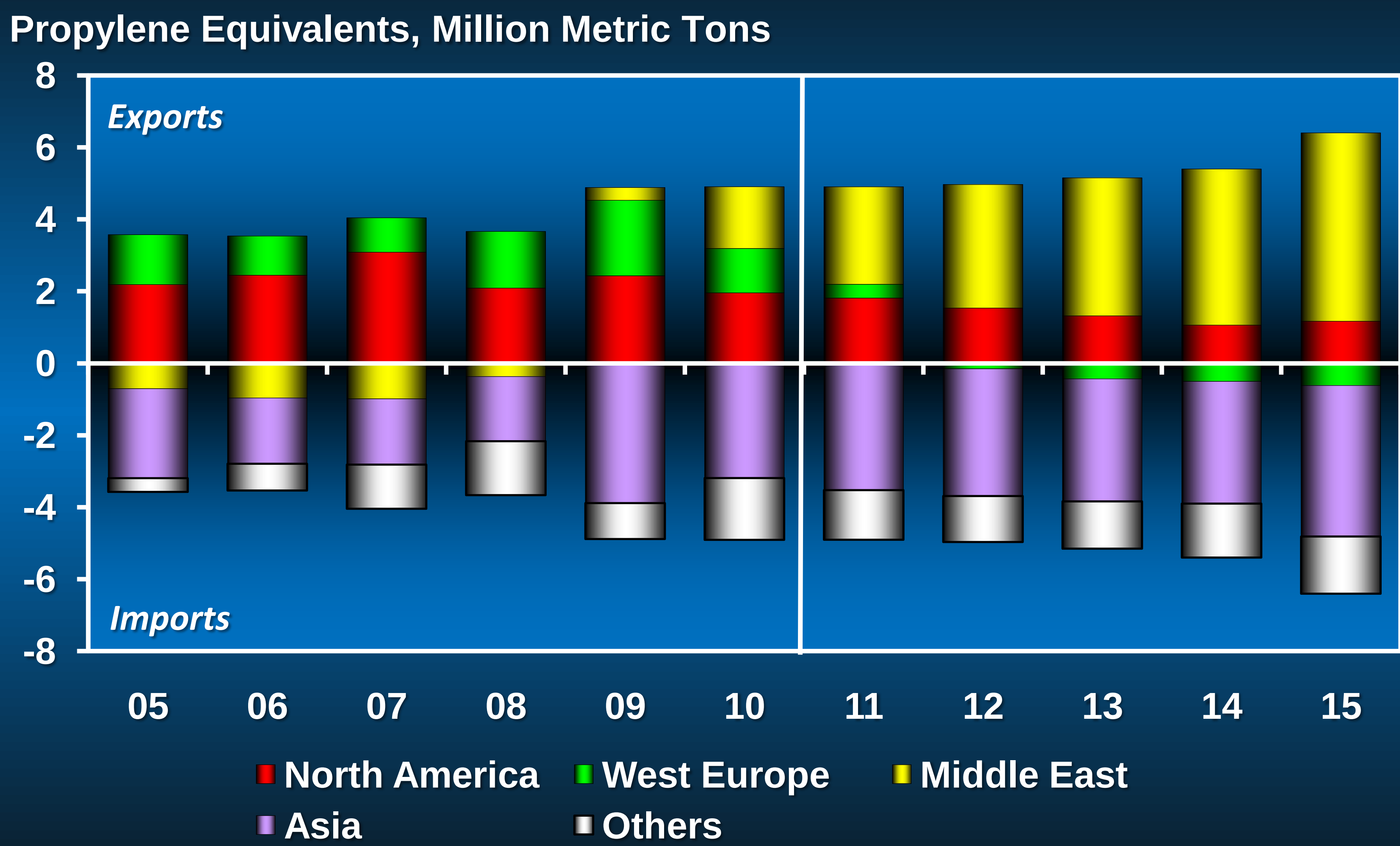
It's Coming – China Will Not Buy It All



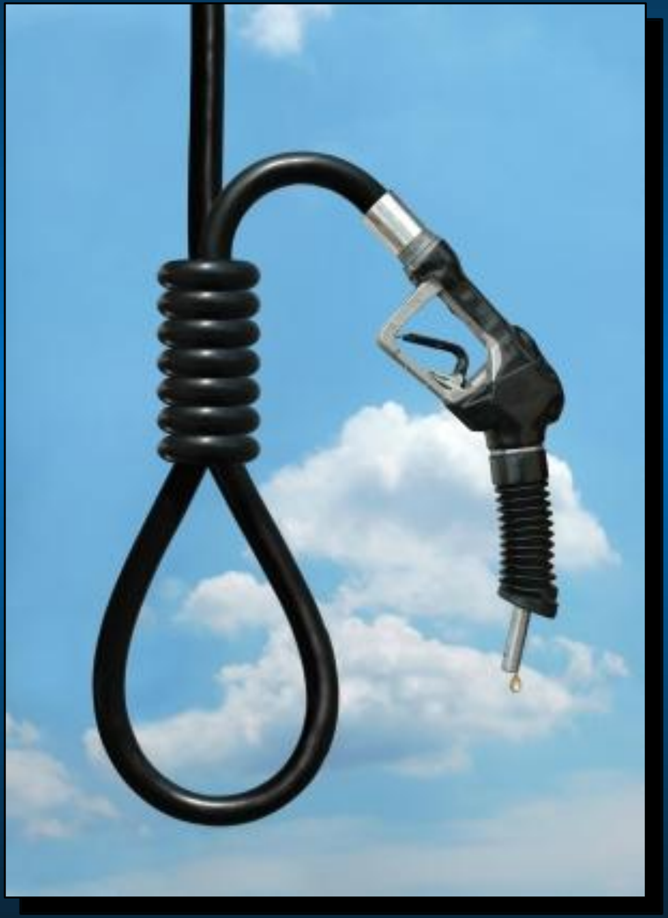
World Ethylene Net Equivalent Trade



World Propylene Net Equivalent Trade

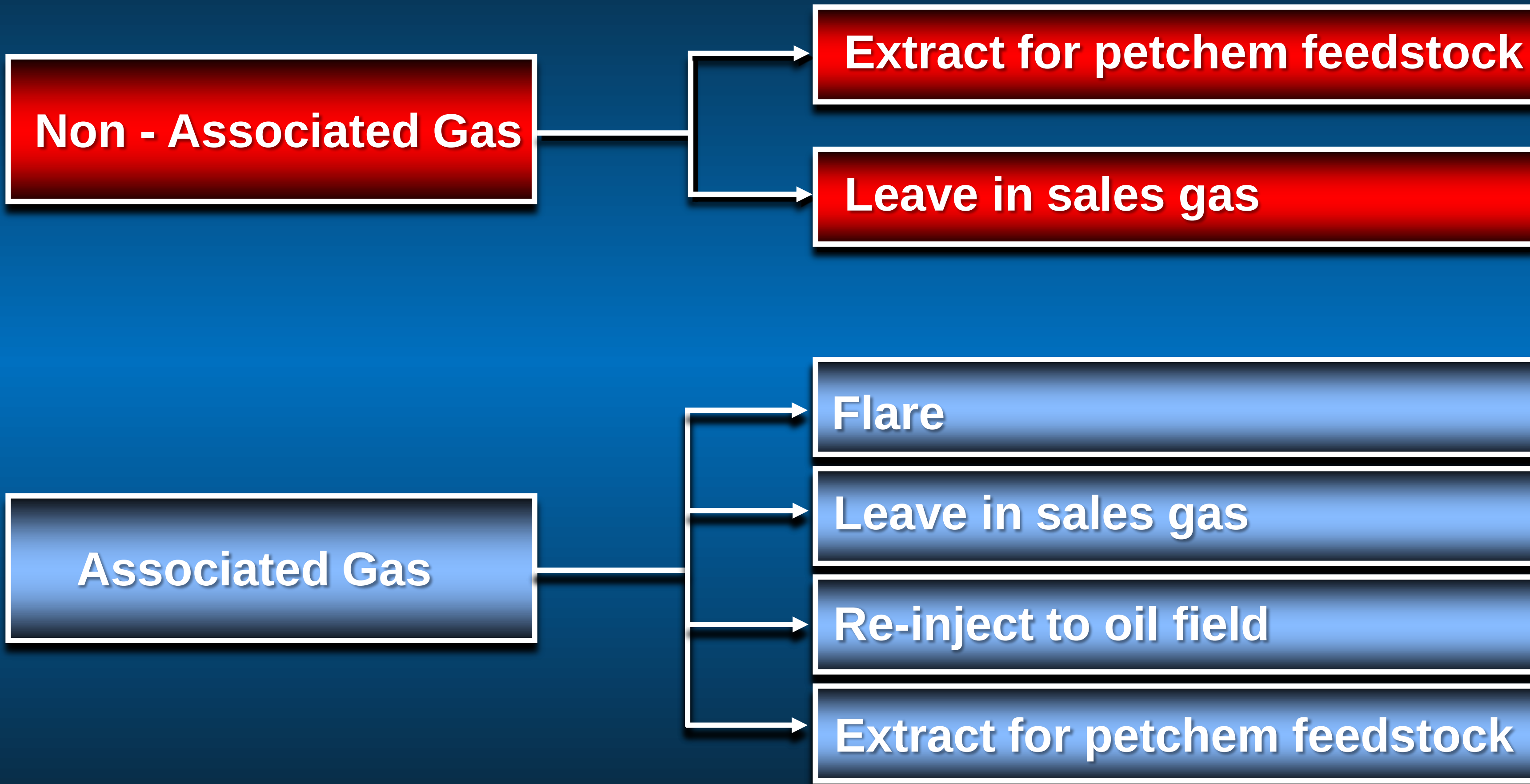


Future Issues

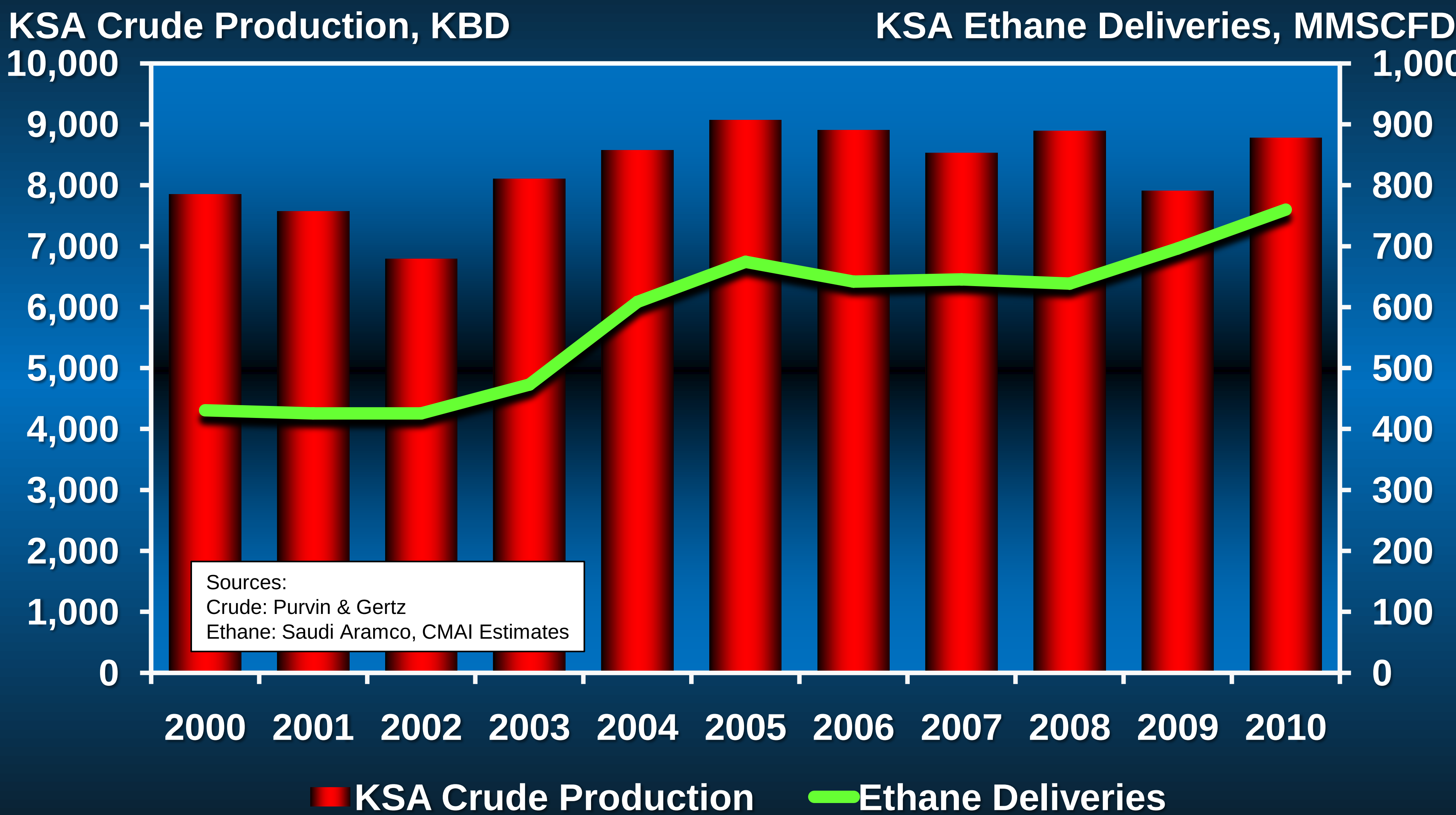


- Feedstock availability
- Feedstock Pricing
- Middle East competitiveness

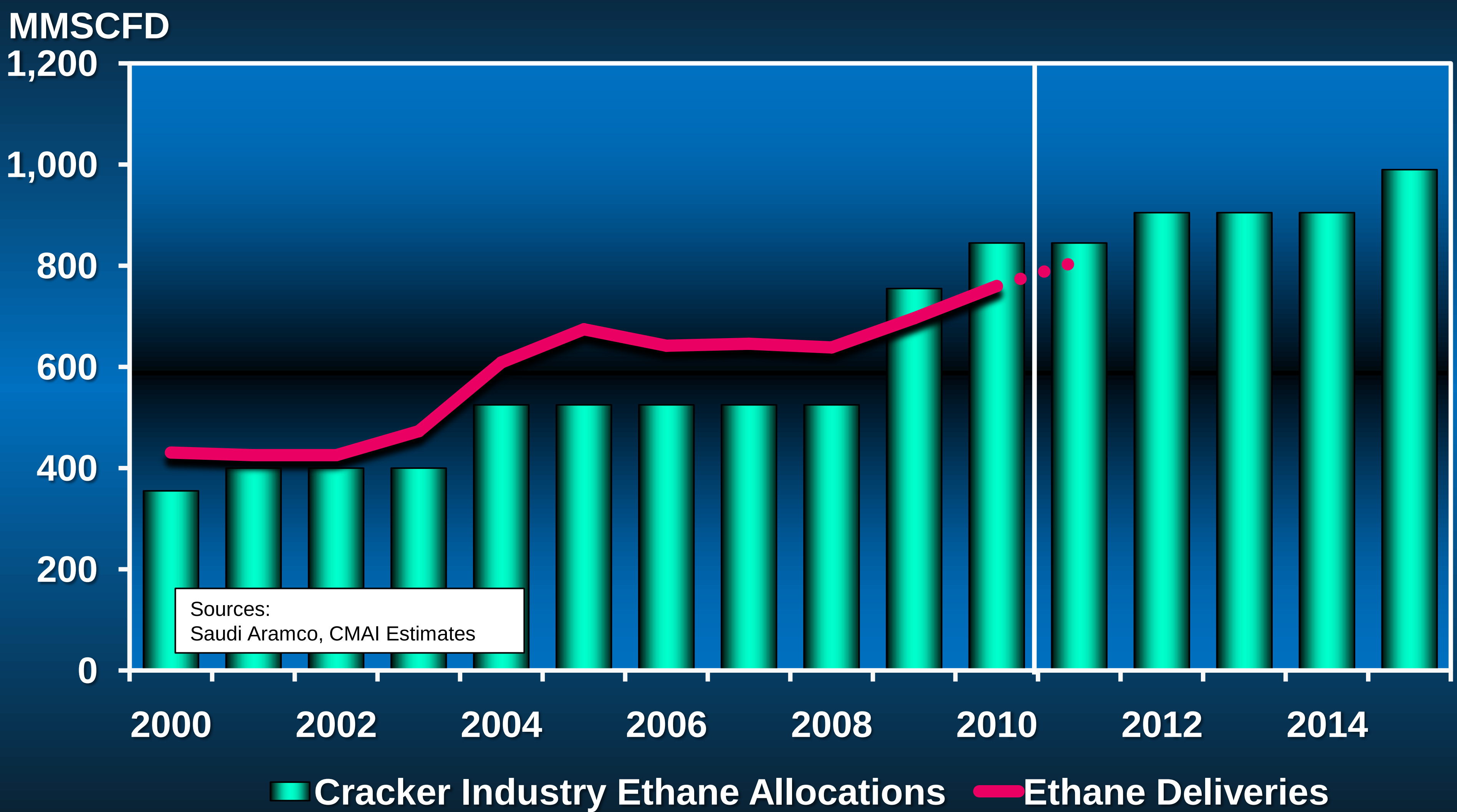
Ethane Sourcing Possibilities



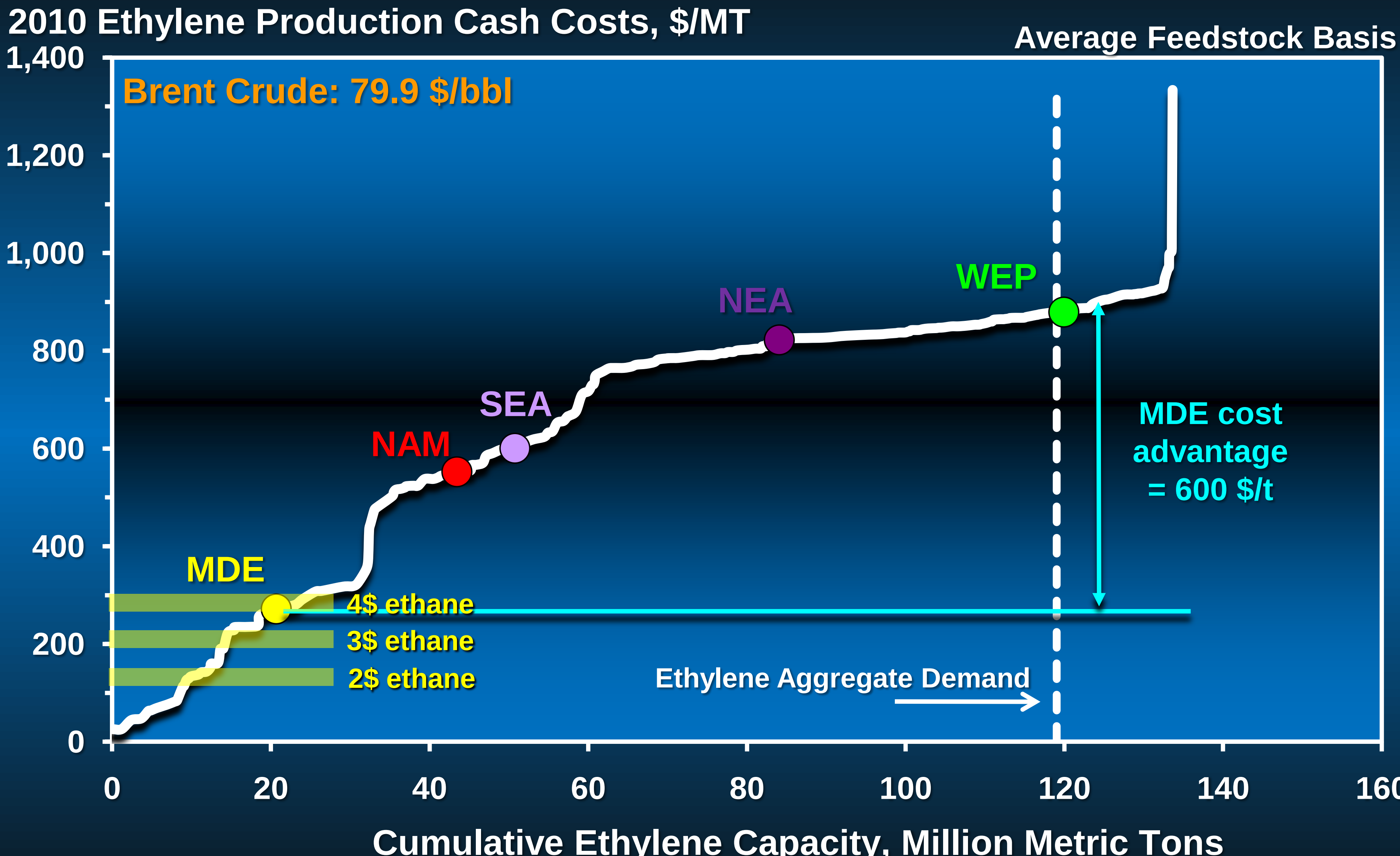
Saudi Ethane Will Be More Dependent on Oil and Gas Production



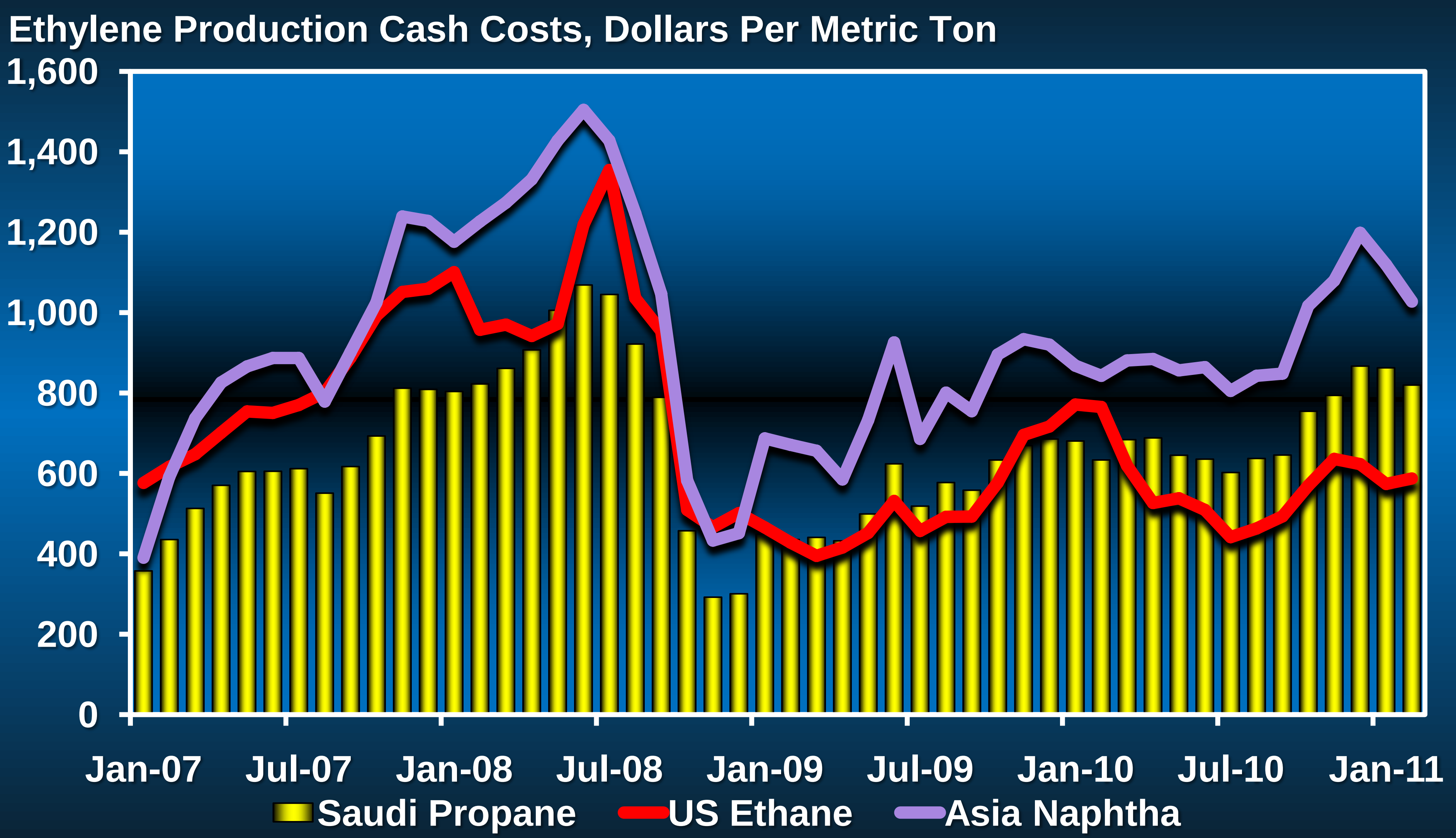
KSA Ethane Deliveries Below Allocations



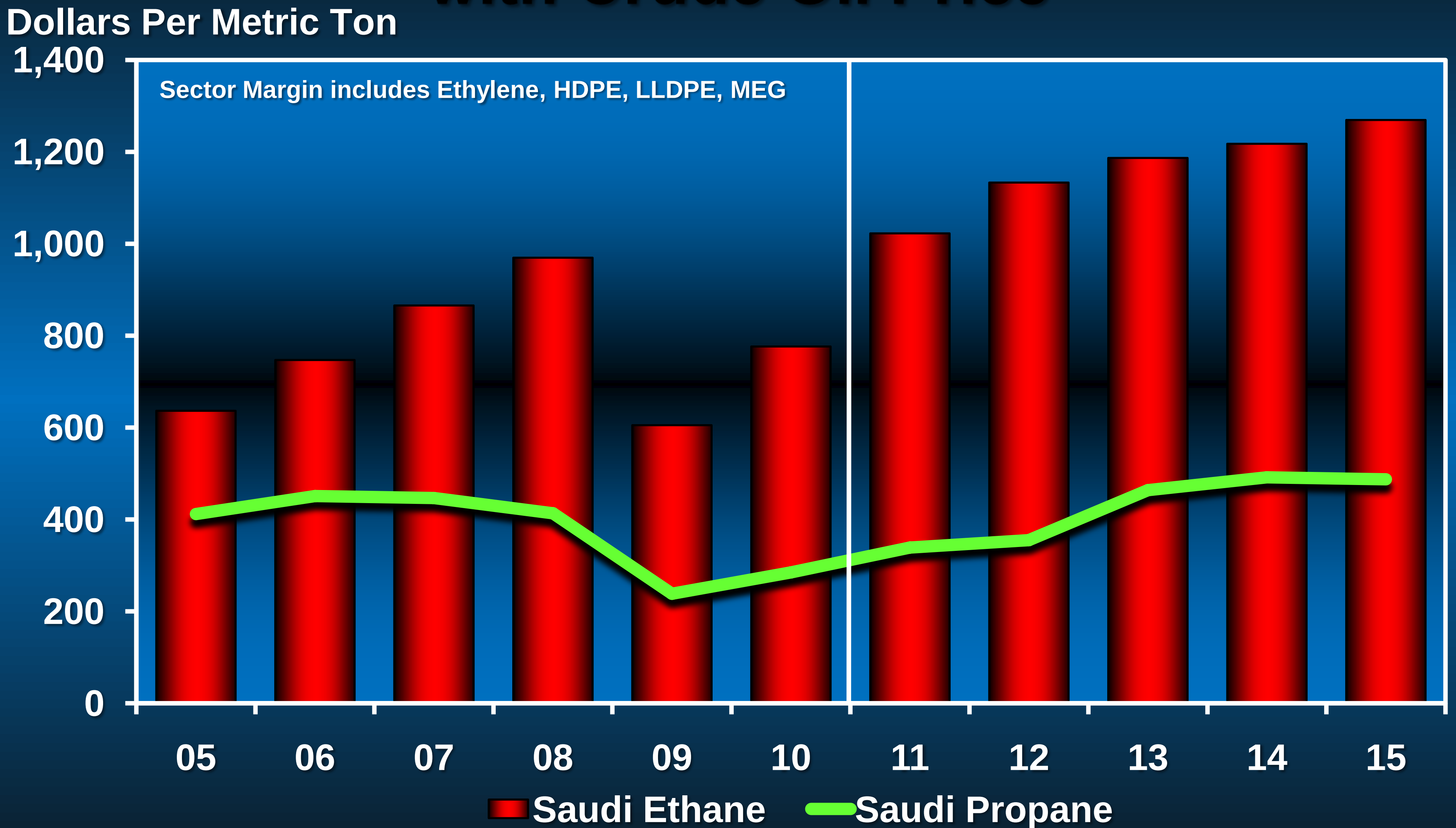
Middle East Can Stay Competitive on Ethane



But Saudi Propane Has Less of an Advantage



Ethylene Sector Margin Increases with Crude Oil Price



Conclusions

- A large Middle East Olefins Capacity Wave has had a muted impact on markets
- Project delays, feedstock availability issues are being resolved. Exports will grow
- New Investment is dependent on feedstock being made available
- Feedstock price changes under consideration but not inevitable
- High oil prices are pushing Middle East olefins profitability to previous peaks
- Other value chains less advantaged

2011

APIC Marketing Seminar

May 26, 2011

Fukuoka, Japan

IHS has acquired CMAI