

Impact of New Hydrocarbon Sources on the Methanol - Acetyls Chain

Tecnon OrbiChem Marketing Seminar at APIC 2013

Taipei, 9 May 2013

Cui Rongying

APIC 2013

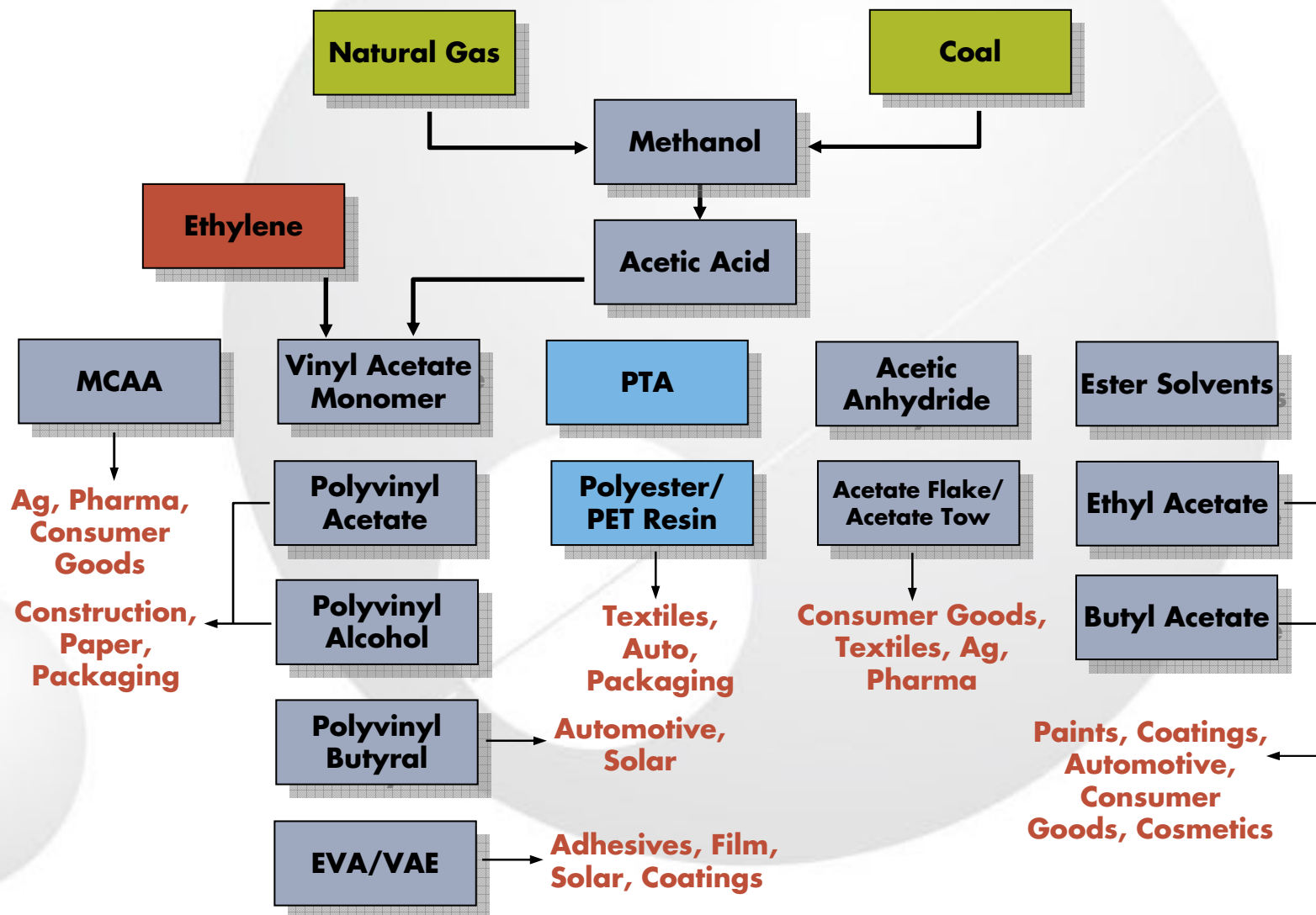
TECNON ORBICHEM'S VIEW OF THE MARKET

Methanol - Acetic Acid

- World methanol prices increased during Q1 2013 as supply-side problems mitigated slow economic activity in Europe and periods of weak demand in China.
- More methanol plant projects were announced in the US as shale gas production presented new opportunities for investment.
- Global acetic acid markets were not as robust in 2012 as originally expected due to ongoing economic headwinds in Europe and overcapacity in Asia. The same conditions persisted through the first quarter of 2013.
- Global acetic acid prices spiked briefly in March-April 2012 but fell just as quickly as major production outages failed to offer long-term support. Higher feedstock methanol prices failed to support higher prices in 2012.
- Global utilisation rates were 70-75% in Q1 2013 as China struggled with high inventories. US producers maintained higher operating rates than any other region.

Source: Tecnon OrbiChem

APIC 2013 METHANOL - ACETYL CHAIN

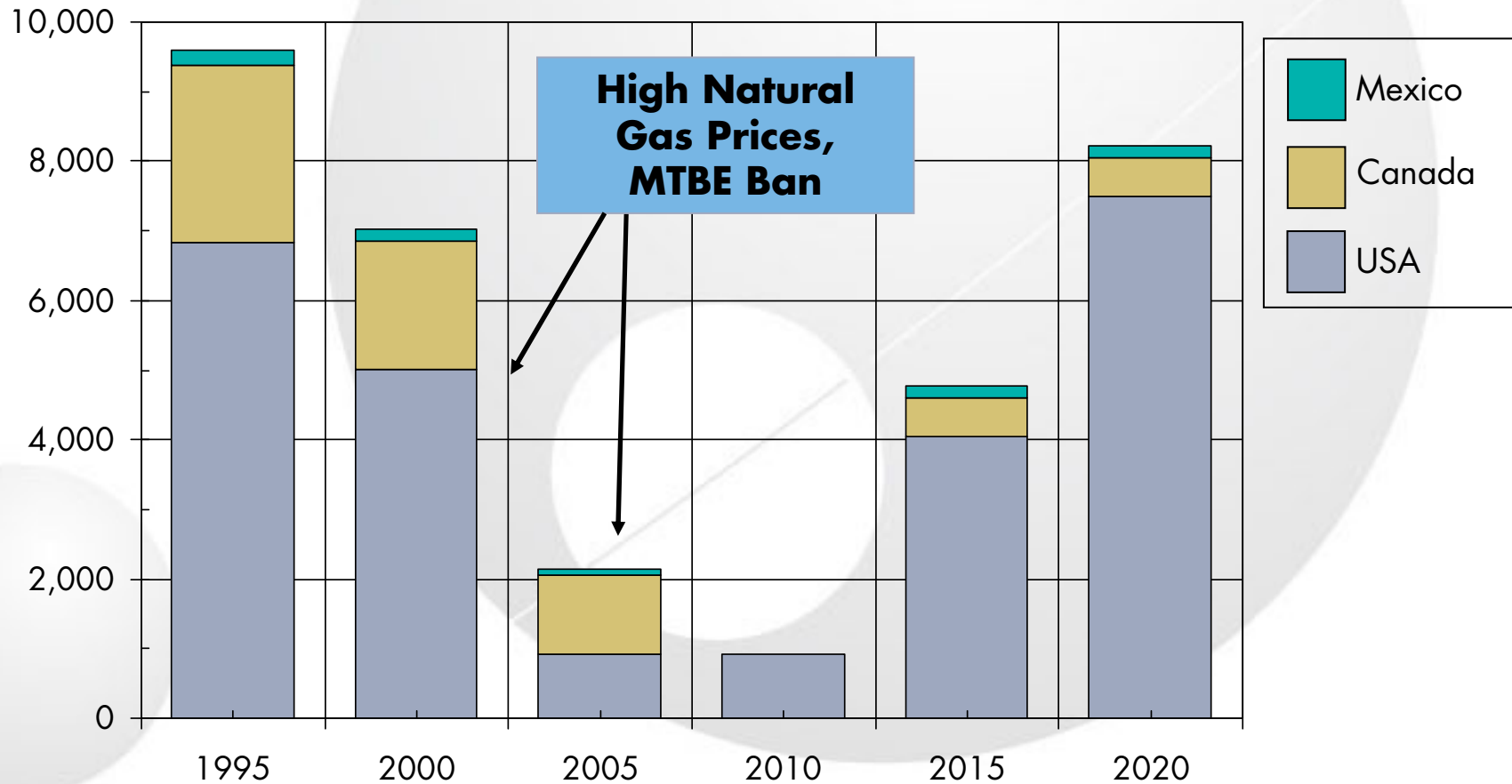


Source: Tecnon OrbiChem

APIC 2013

NORTH AMERICAN METHANOL CAPACITY - THE SEQUEL

1,000 Metric Tons



Source: Tecnon OrbiChem

APIC 2013

NORTH AMERICA METHANOL CAPACITY ADDITIONS

Cheaper Natural Gas Feedstock

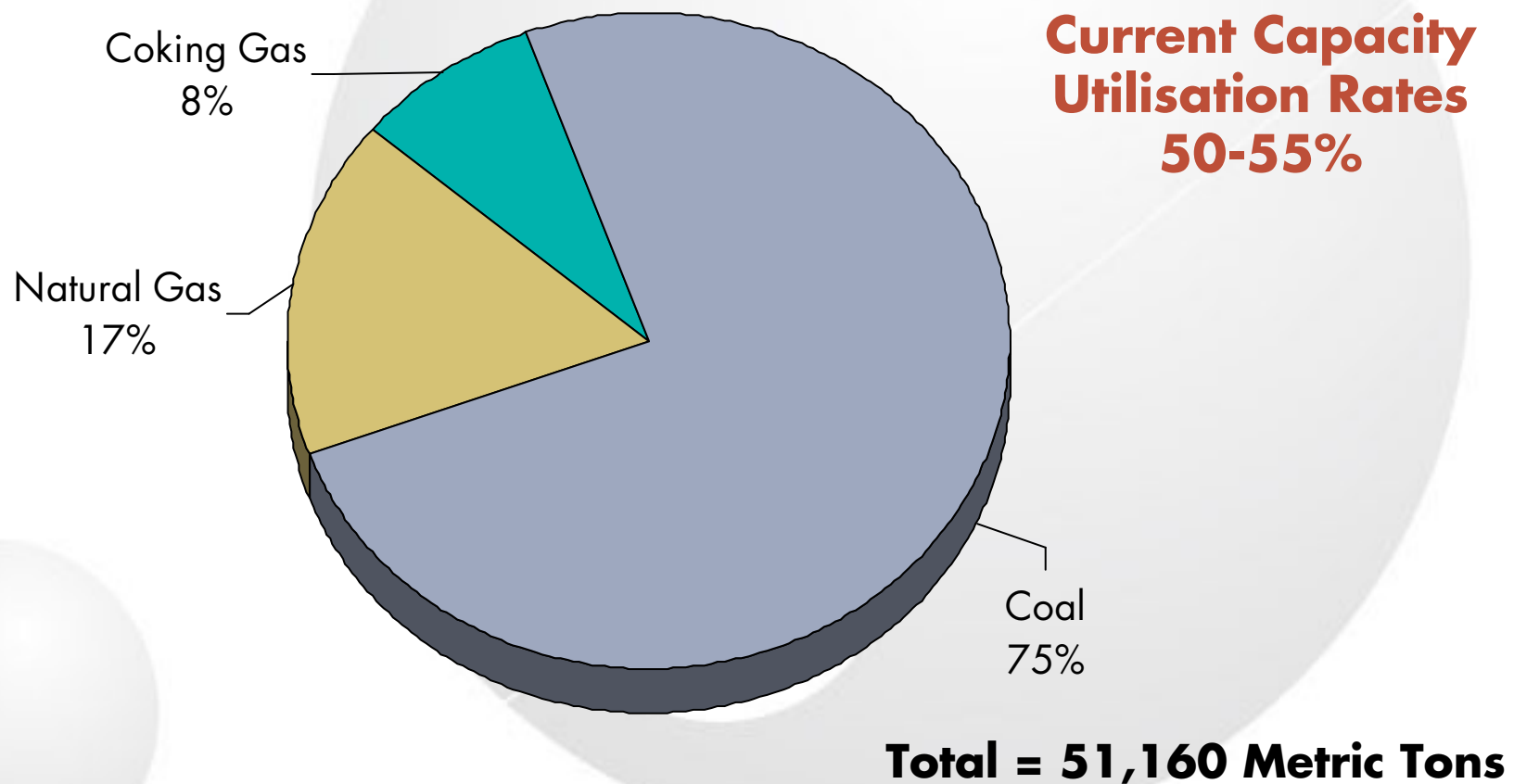
<i>Company</i>	<i>Location</i>	<i>Capacity (ktpa)</i>	<i>Start-Up</i>
Methanex	Canada	470	Q2 '11
OCI North America	Texas	850	H2 '12
LyondellBasell	Texas	780	H2 '13
Methanex	Canada	90	H2 '13
Methanex	Louisiana*	1000	2014
G2X Energy	Texas	70	Q4 '14
Celanese	Texas	1300	H2 '15
South Louisiana Methanol Co	Louisiana	1800	2016/7
Lake Charles Clean Energy Co	Louisiana	1000	2017
Methanex	Louisiana*	~900	2017?

*Plant relocated from Chile

Source: Tecnon OrbiChem

APIC 2013

CHINA METHANOL FEEDSTOCK - COAL SUPREME

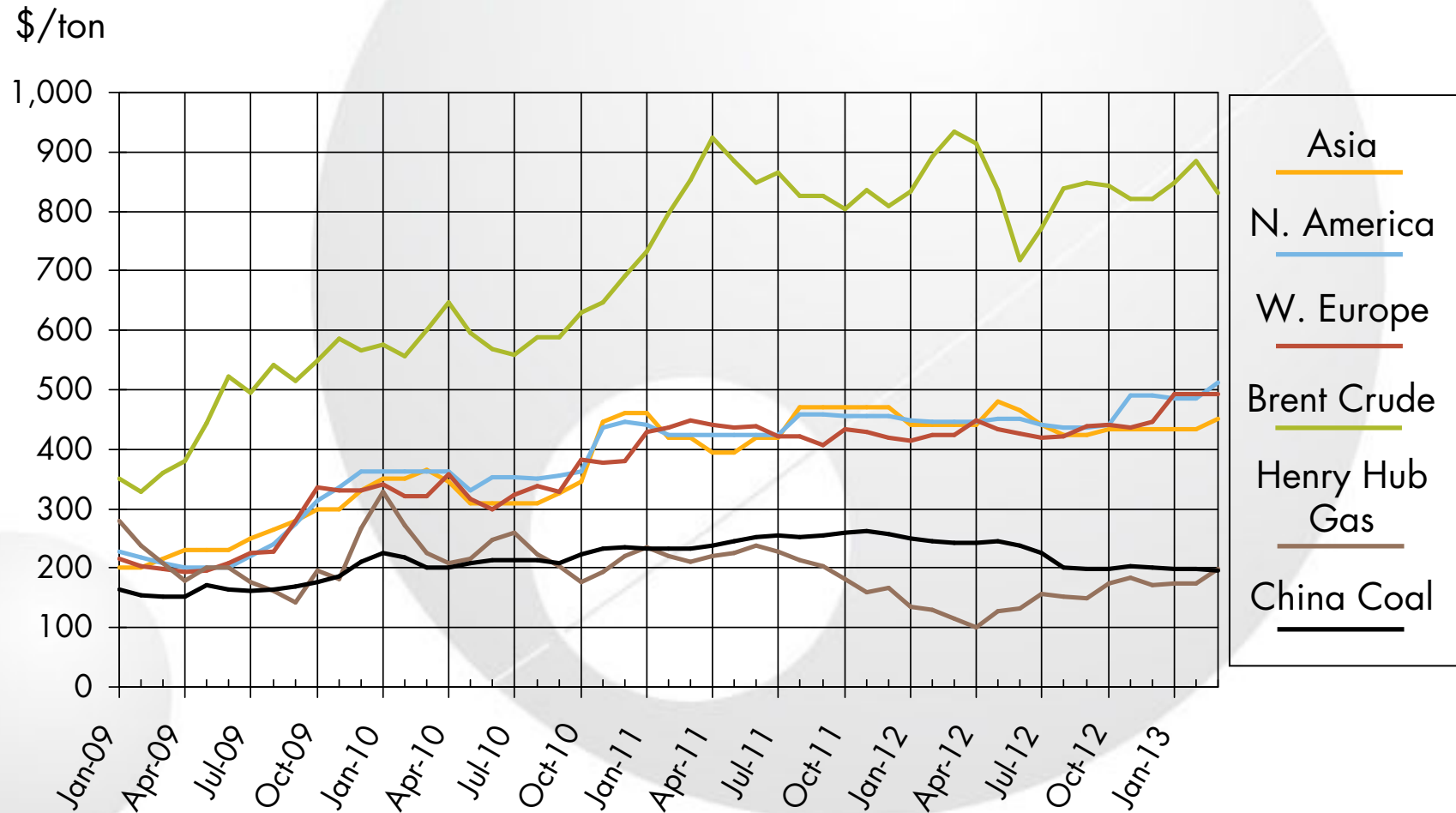


Source: Tecnon OrbiChem

APIC 2013

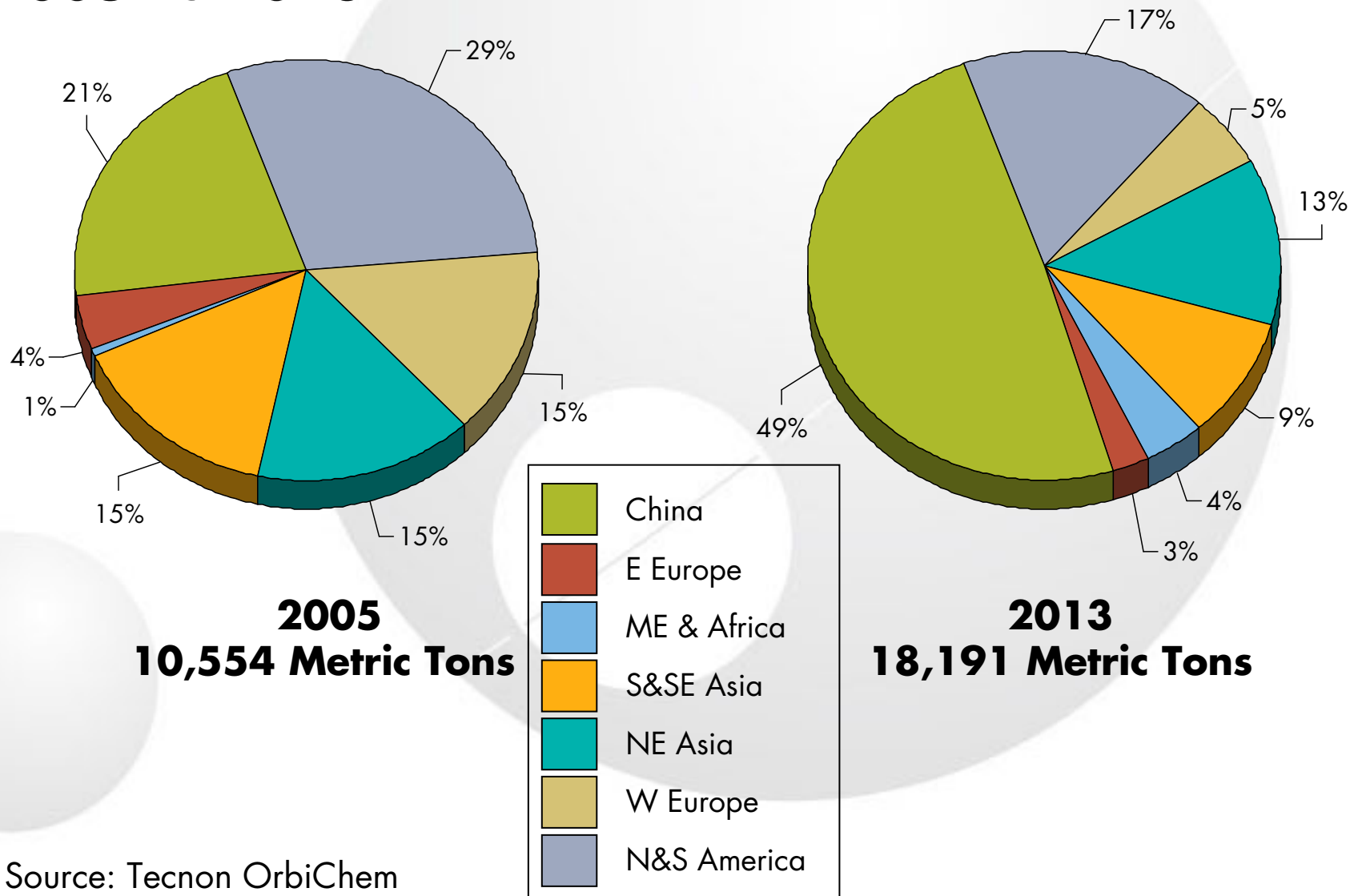
METHANOL CONTRACT PRICES

vs BRENT CRUDE, US NATURAL GAS & CHINA COAL



Source: Tecnon OrbiChem

APIC 2013 CAPACITY TO PRODUCE ACETIC ACID 2005 vs 2013



Source: Tecnon OrbiChem

APIC 2013

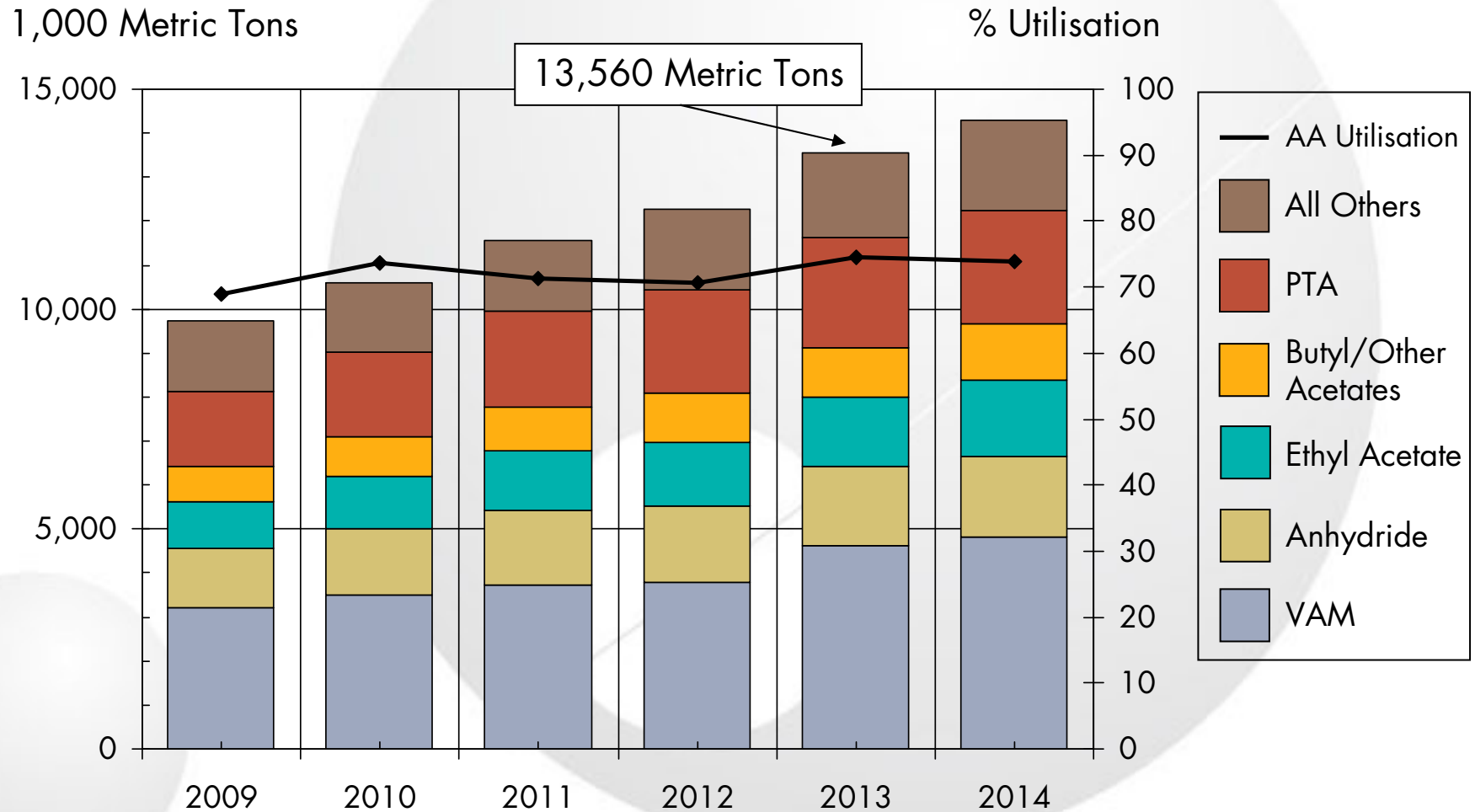
WORLD ACETIC ACID CAPACITY ADDITIONS

<i>Company</i>	<i>Location</i>	<i>Change (ktpa)</i>	<i>Start-Up</i>
Anhui Huayi Coal Chemical	China	500	2012
Celanese	USA	~150	2012
Ningxia Yinglight Chemical	China	300	2013
Henan Yima Gas Co	China	200	2013
Henan Longyu Coal Chemical	China	400	2014
YARACO 2	China	650	2016
Reliance	India	790	2016/7
BP-IOC	India	1000	2016/7
Petrobras	Brazil	200	2017
Other Projects	India, USA, etc	~600	2014-8

Source: Tecnon OrbiChem

APIC 2013

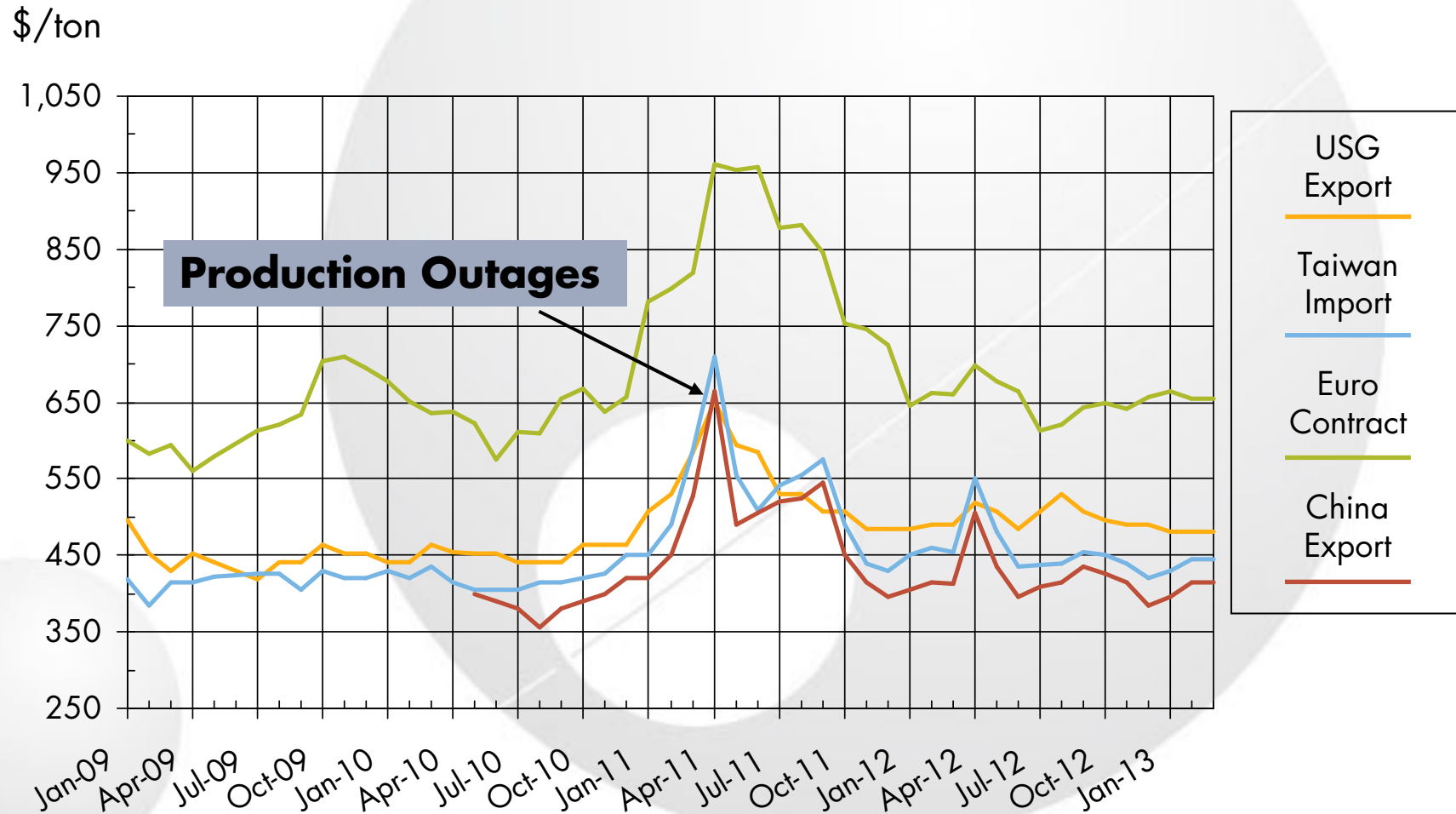
ACETIC ACID CONSUMPTION GROWTH



Source: Tecnon OrbiChem

APIC 2013

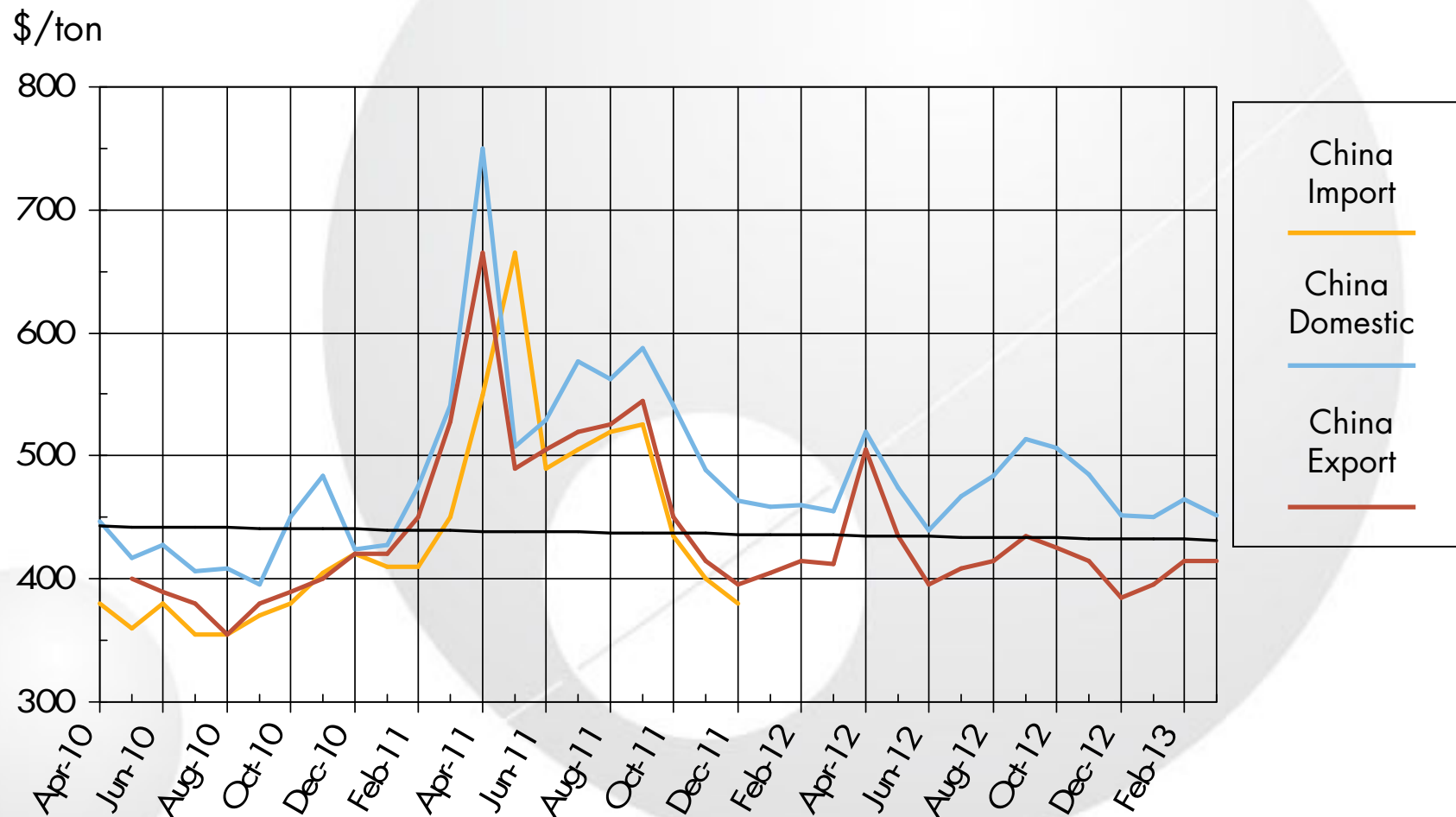
ACETIC ACID PRICES Q1 2009 - Q1 2013



Source: Tecnon OrbiChem

APIC 2013

CHINA ACETIC ACID PRICES Q2 2010-Q1 2013



Source: Tecnon OrbiChem

APIC 2013

SUMMARY & CONCLUSIONS

- Shale gas production has led to a renaissance in methanol production in North America. New methanol output will displace volumes currently imported, but those volumes will be consumed in other regions.
- China's methanol demand will grow much faster than other regions as fuel blending increases and MTO/MTP plants begin operation. Coal will continue as the chief feedstock for methanol in the medium-term, as any domestic shale gas production remains years away.
- Acetic acid prices remain more sensitive to regional supply/demand problems than changes in feedstock prices, but are not immune. Feedstock volatility is a constant threat along the value chain.
- US acetyls producers should enjoy low production costs compared with other regions, but the larger shale gas advantages may be enjoyed more by the upstream producers.

Source: Tecnon OrbiChem



.....your source of expert chemical
industry knowledge