



FEBRUARY 2016

METHANOL

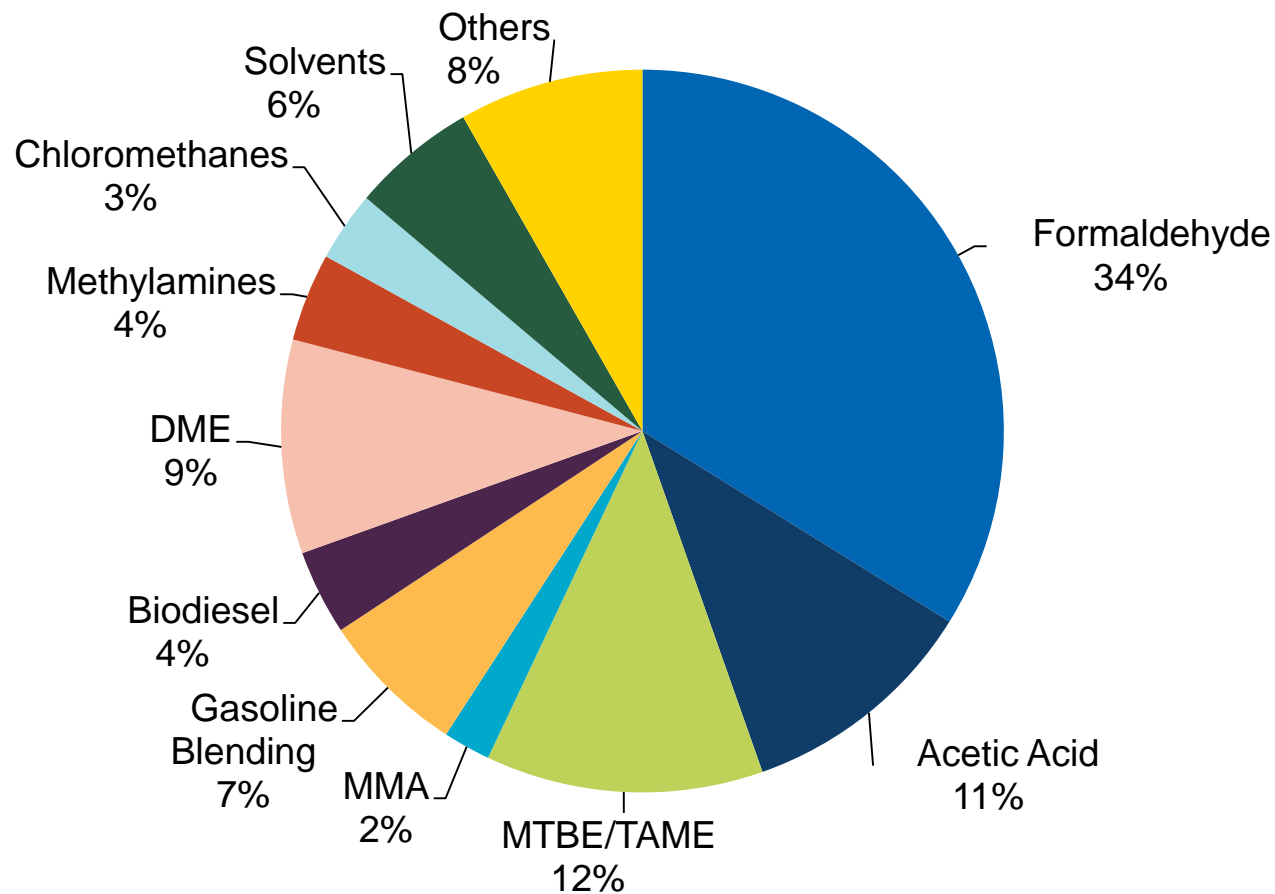
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- Demand
 - MTO
 - US
- Supply
 - North American projects
- Tradeflows
 - Iranian Sanctions
- Pricing and Margins
 - Methanol and Crude Oil Current Conditions

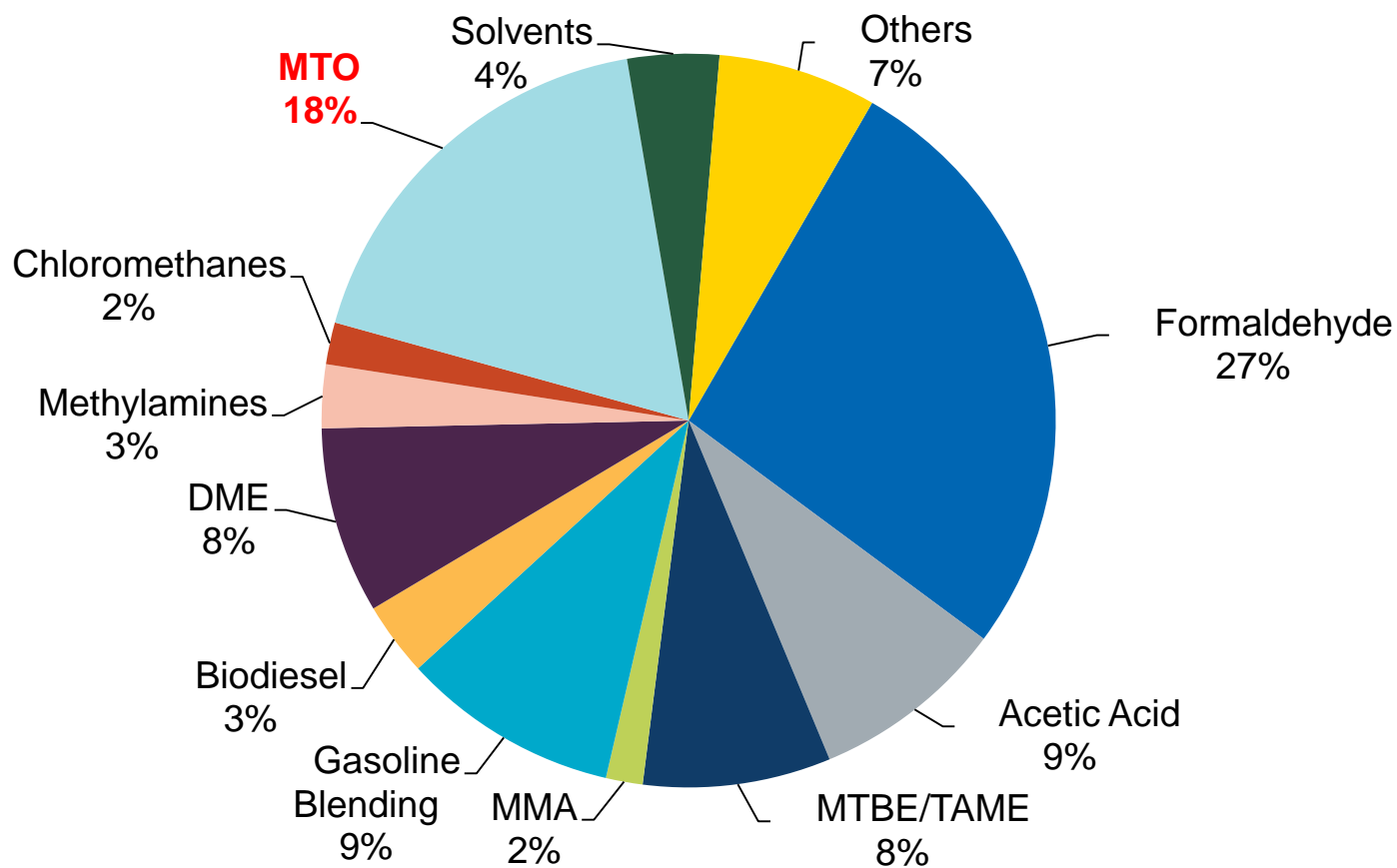
Q&A

Methanol Demand

2010 Global Methanol Demand By End-Use



2015 Global Methanol Demand By End-Use



Strong Demand Growth into MTO - Existing Plants

MTO/P Company	Location	Time on stream	Max. Methanol Consumption	Methanol Source
Zhongyuan PC	Puyang, Henan	Oct. 2011	600	Long term contract with plants near by and merchant market
Fund Energy (Ningbo)	Ningbo, Zhejiang	April. 2013	1800	Contract and merchant market
Nanjing Wison	Nanjing, Jiangsu	Oct. 2013	900	Self supply and merchant market
Shandong Shenda (Levima Group)	Tengzhou, Shandong	Dec. 2014	1200	Long term contract with nearby plants and merchant market
Zhejiang New Energy	Jiaxing, Zhejiang	April. 2015	1800	Contract and merchant market
Shandong Hengtong	Tengzhou, Shangdong	July. 2015	900	Long term contract with nearby plants and merchant market
Shenhua Xiwan	Yuli, Shaanxi	Dec. 2015	1800	Long term contract with nearby plants and merchant market
Total Max. methanol demand			9000 Kt	

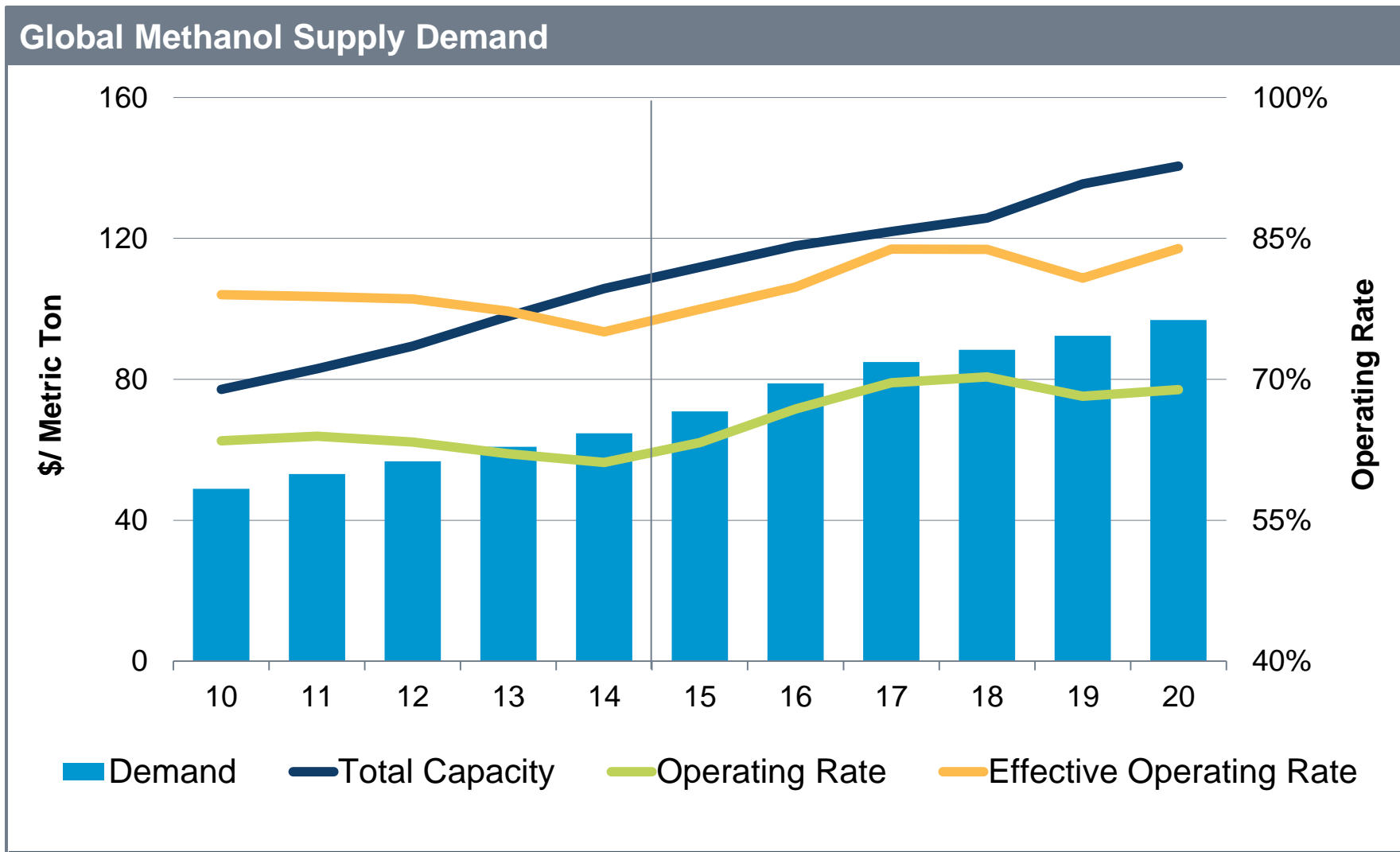
New US Methanol Demand

- Thus far, basically only fully integrated projects that consume methanol:
 - ZeoGas – MTG
 - EmberClear – MTG
 - BASF – GTP
- Only exceptions are:
 - Momentive adding 90 Kta of methanol demand in formaldehyde
 - Mitsubishi potentially adding 170 Kta of methanol demand in MMA
 - Celanese adding 75 Kta of methanol demand in acetic acid

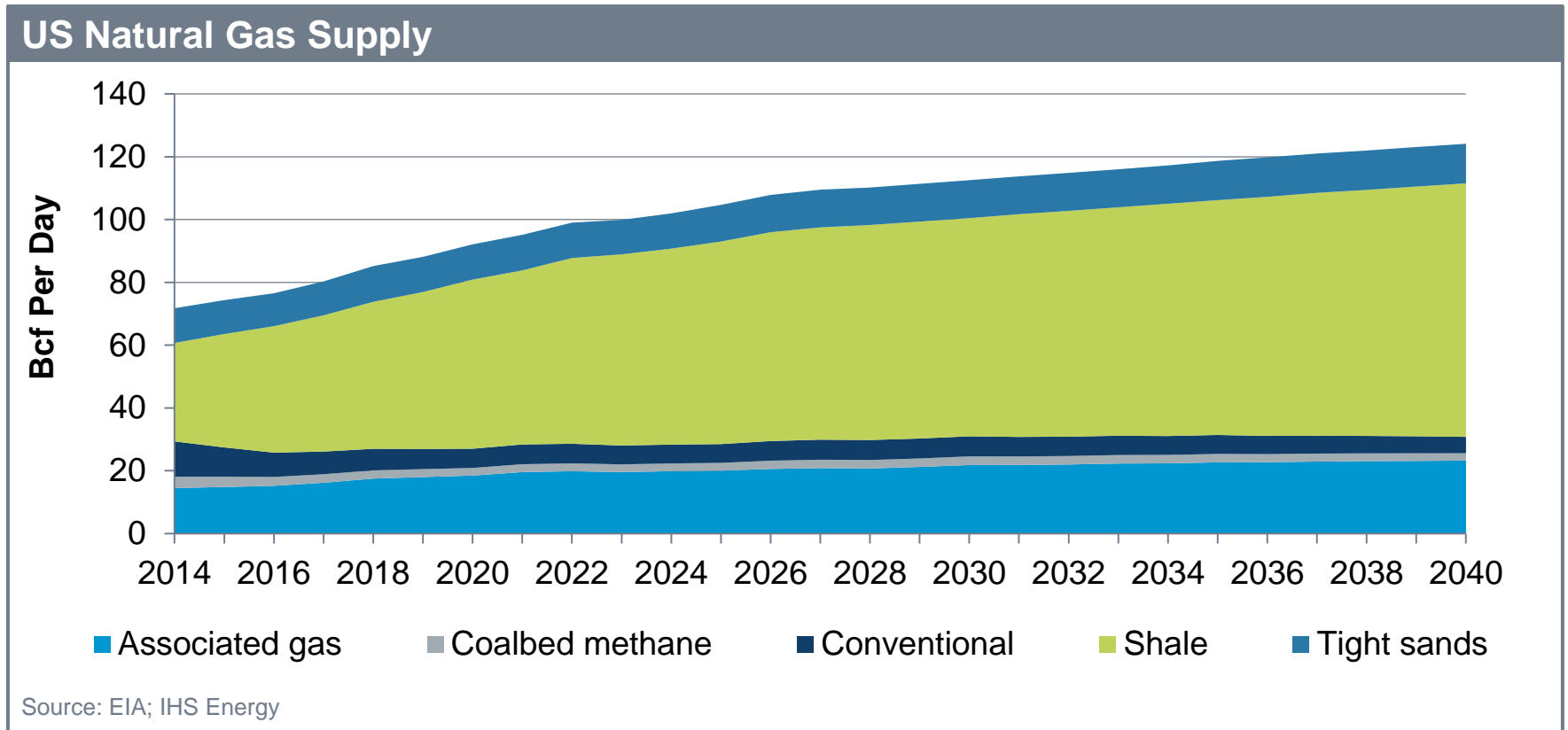


Methanol Supply

Improving Methanol Operating Rates

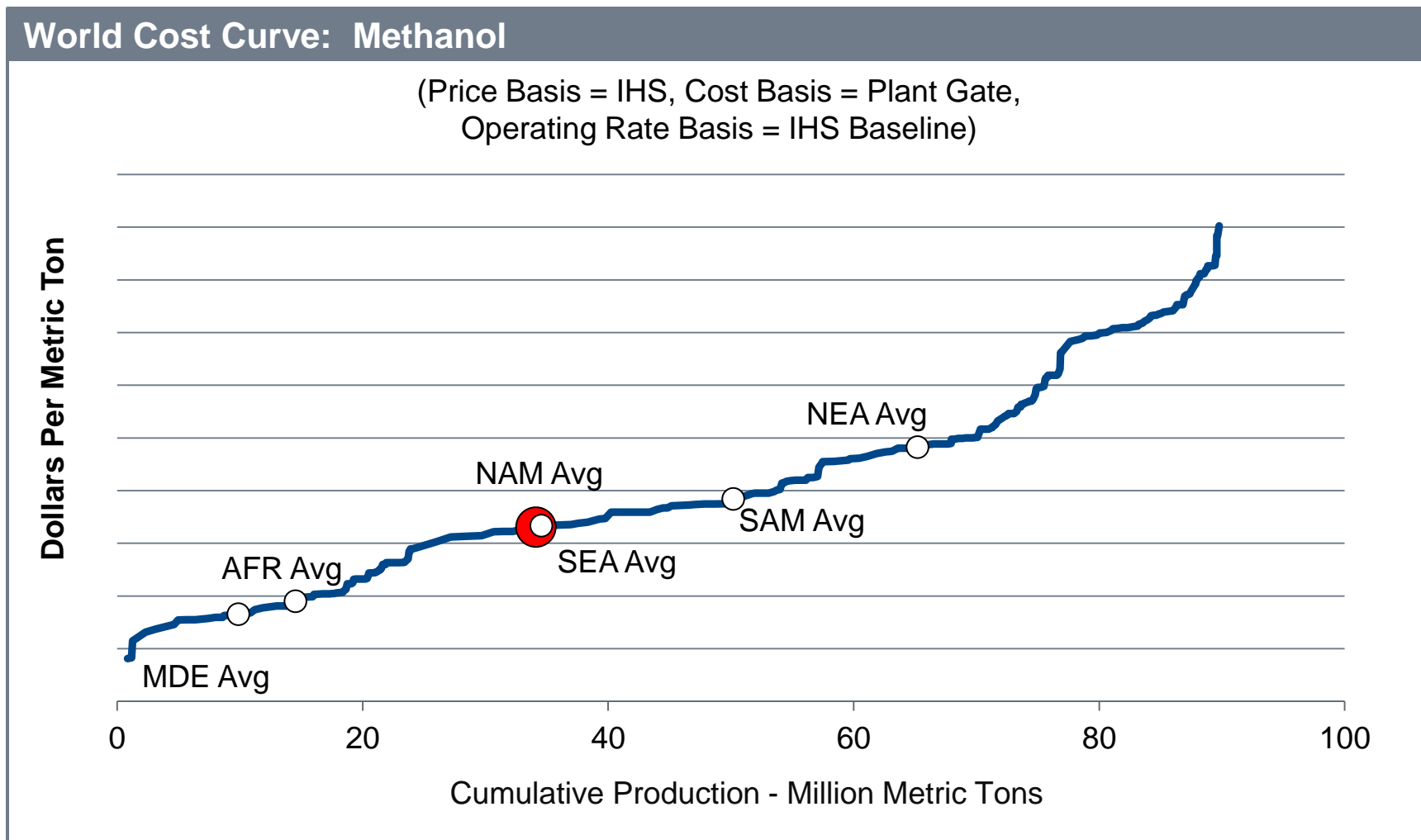


Changed Landscape: US Natural Gas



- Production from unconventional sources will continue to expand rapidly
- By the end of the forecast period, gas production from shale gas and tight oil plays will represent over 75% of total gas production

2019 World Methanol Industry Production Cash Cost



Methanol Trade flows

Global Methanol Trade Shift – South America



2014

Global Methanol Trade Shift – South America



2014

2015

Global Methanol Trade Shift – 2020 North & South America



Global Methanol Trade Shift – 2020 North & South America



An Update on Iranian Sanctions



Iran: Sanctions Update

- Iran and the P5+1 countries reached a historic agreement on 14 July 2015 that curbs Iran's nuclear programme in return for sanctions relief
- The agreement has now effectively passed US Congress
- The US and Iran adopted the nuclear agreement on the official “Adoption Day”, 18 October 2015
- “Implementation Day” is likely to be between in the first half of 2016, IF Iran satisfies the IAEA it has fulfilled its nuclear obligations
- However, these are only part of a network of sanctions; earlier US sanctions will remain in place, as will congressional restrictions on US companies and their subsidiaries' ability to do business in Iran

Iran: Impact on the Methanol Market

- Short-term:
 - Rather than being mainly restricted to China and India, Iran could export to other markets, maximising its netbacks
 - This is likely to have the effect of minimising regional price differentials
 - Plant reliability could improve if Iran has better access to items such as spare parts, catalyst charges etc.
 - Current margins are breakeven at best for importing into China at a price of \$215 CFR
- Longer-term:
 - Iran could add to its current 5m tpa methanol capacity
 - Existing projects could be re-invigorated
 - New projects, potentially with overseas finance and know-how, could be implemented
 - By 2025-2030 Iran's methanol capacity could grow by more than 10m tpa

Methanol Projects Announced in Iran

Company	Project	Capacity in Kta	Timeframe
Kaveh Methanol Co	New Facility	2,300	Medium Term
Marjan PC	New Facility	1,650	Medium Term
Fanavaran PC	Expansion	1,650	Long Term
Kharg	Expansion	1,400	Long Term
Sabalan PC	New Facility	1,650	Long Term
Siraf Energy Invest.	New Facility	1,650	Long Term

Methanol Pricing and Margins

US METHANOL PRICING

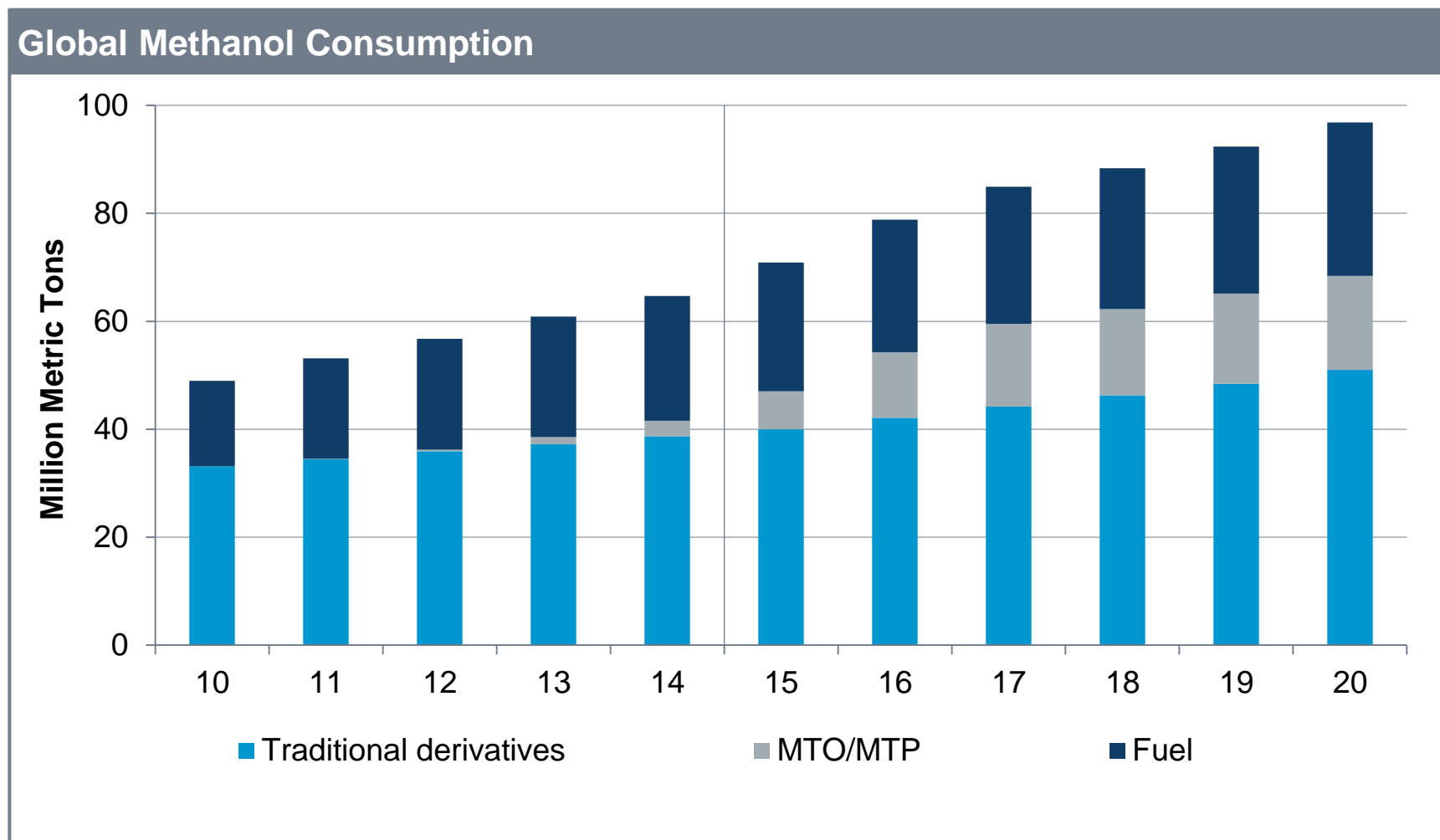
The 4Q 2015 US spot methanol price was **\$269** vs **\$415** in 4Q of 2014 and that is approximately **\$80** lower than we expected six months ago.

Our outlook for 2016 pricing is **\$263** vs **\$327** in 2015.

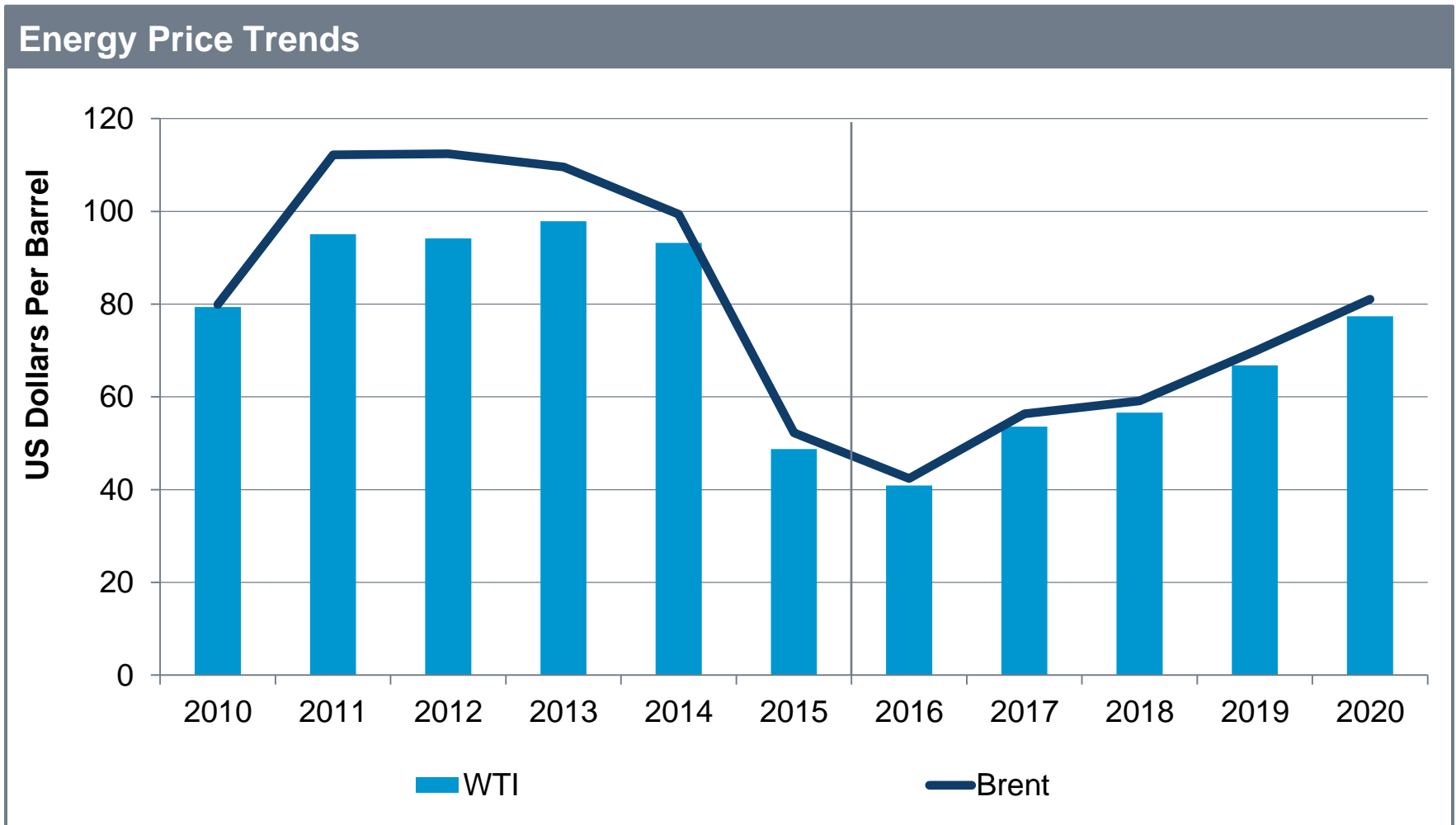
In general the US methanol market came under significant pressure at the end of 2015.

- WHY?
 - Planned: new capacity onstream in the US
 - Environmental: further falls in the crude oil price
 - Unplanned: postponement of some MTO unit start-ups in China

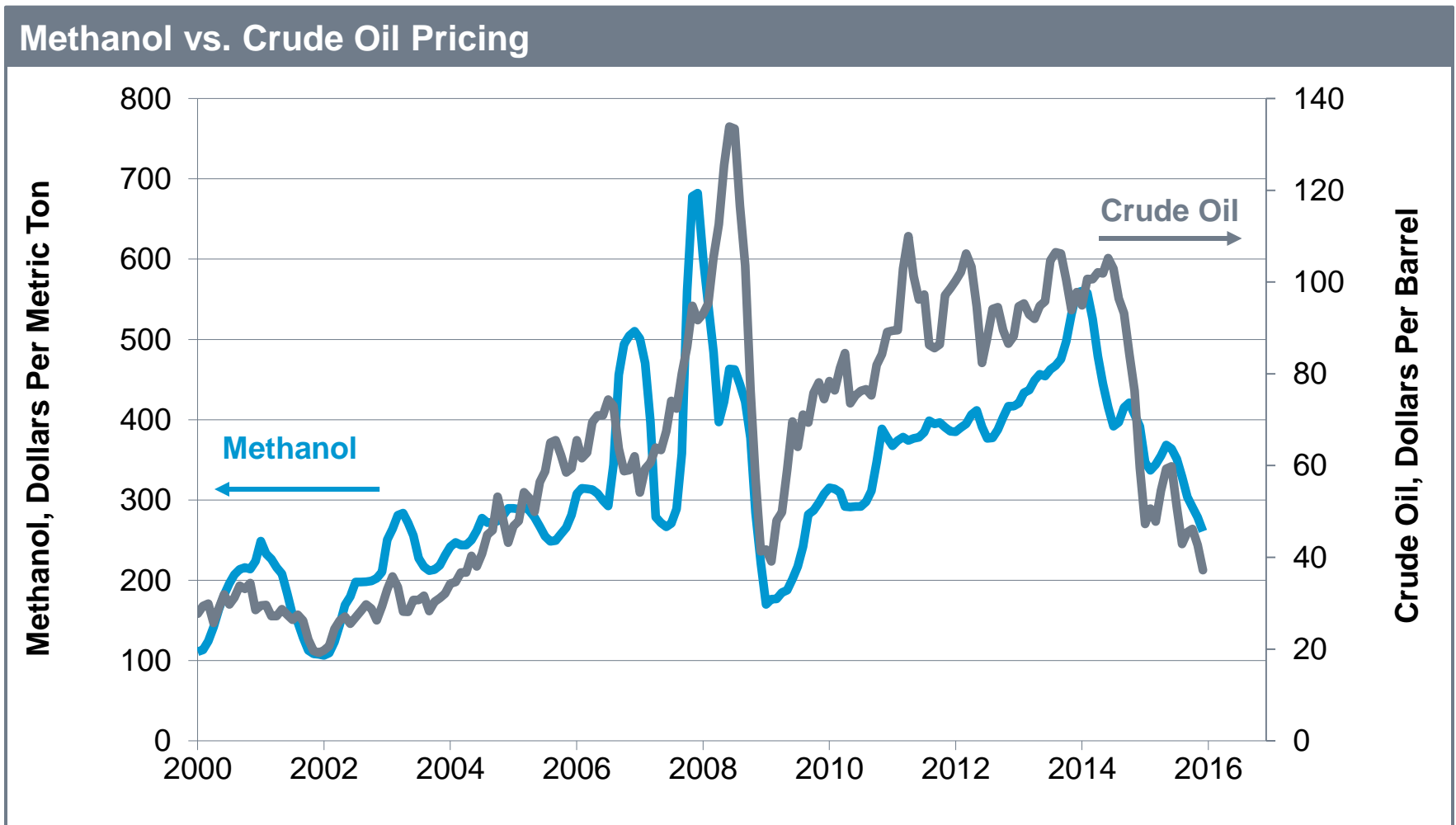
Global Methanol Demand Crude Derivatives vs. Traditional



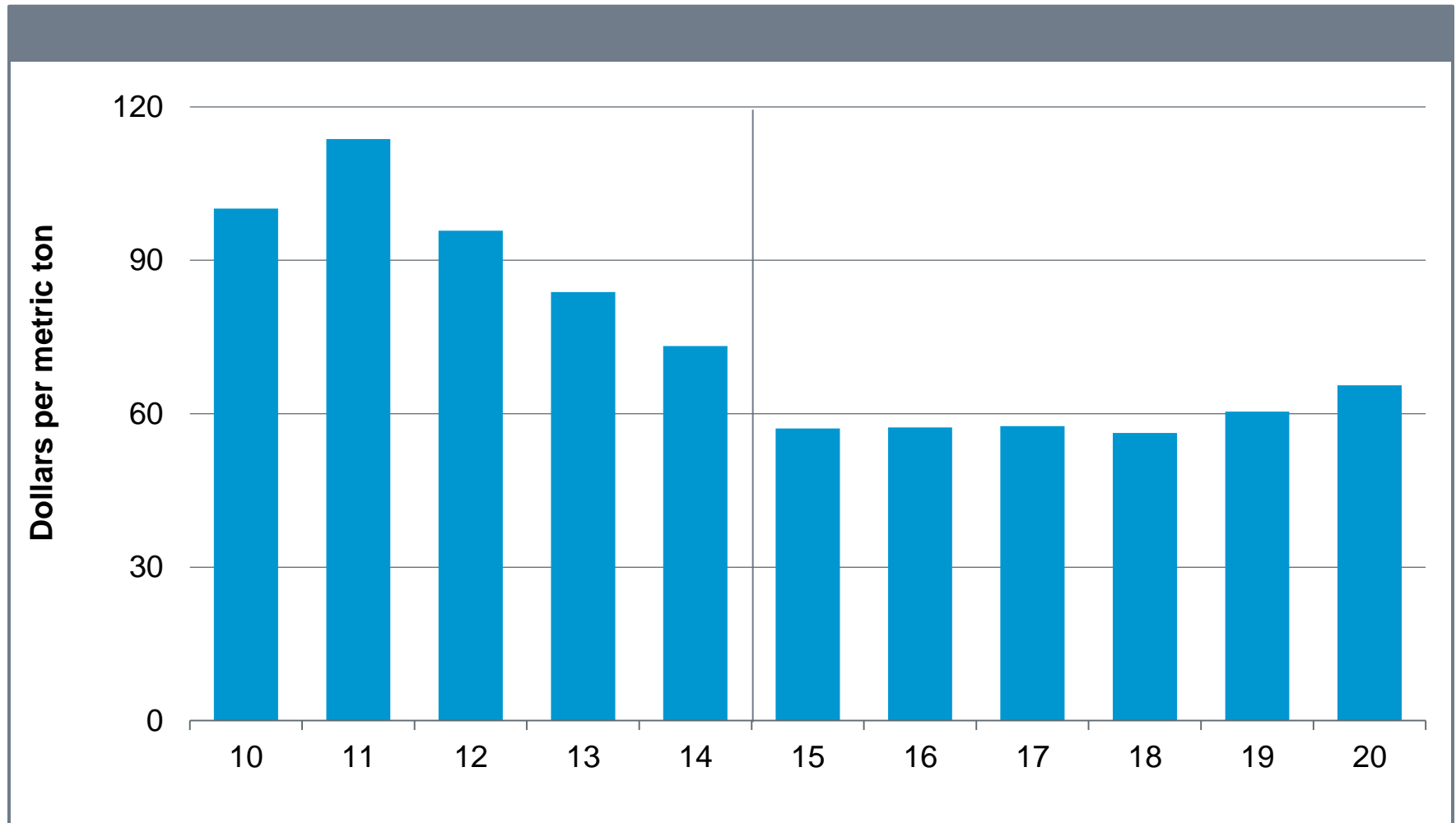
The crude oil supply glut is not expected to be absorbed before late 2016



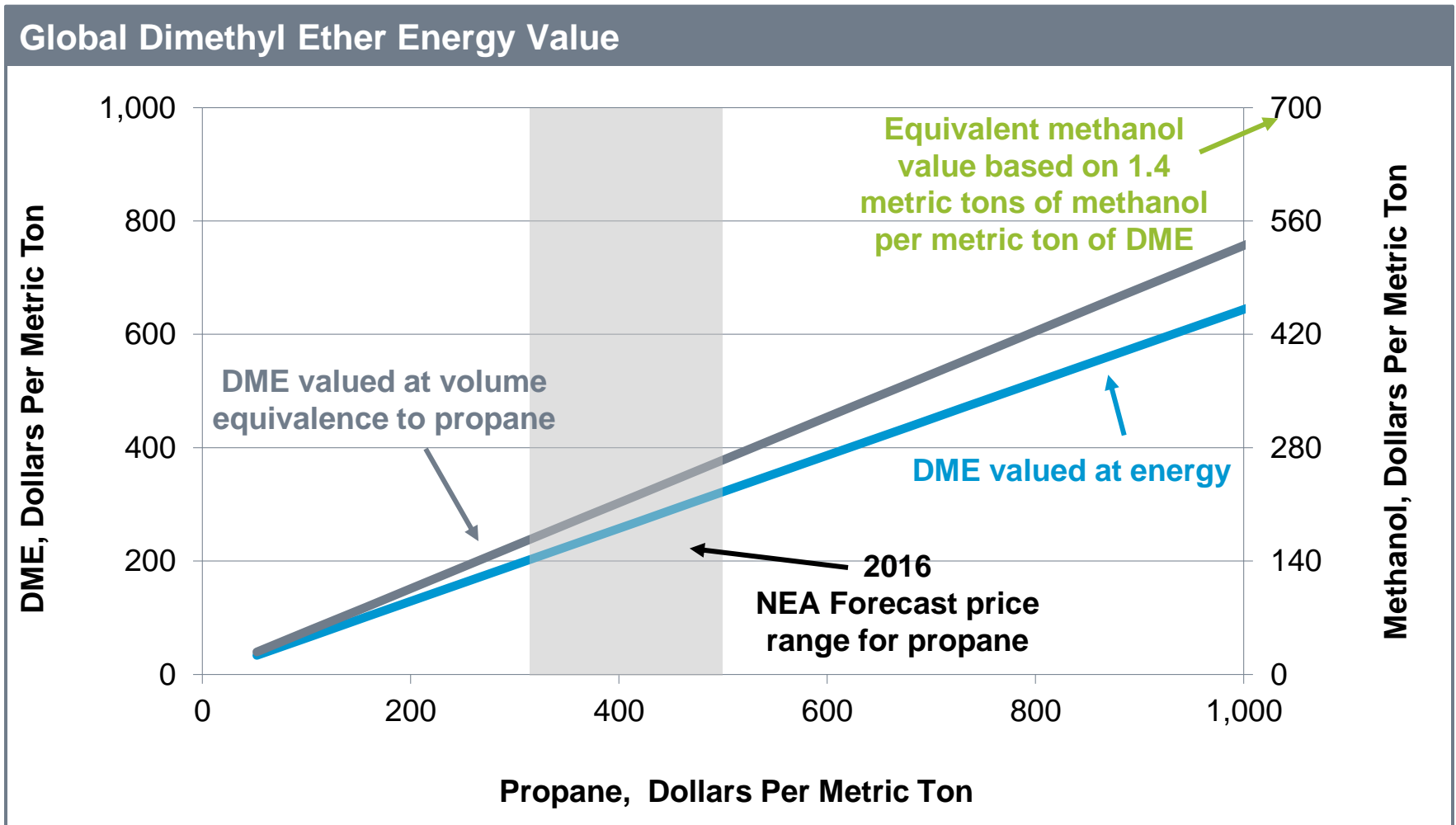
Methanol vs Crude Oil



Lower Production Costs and Oversupply are Expected to Keep Coal Prices Low

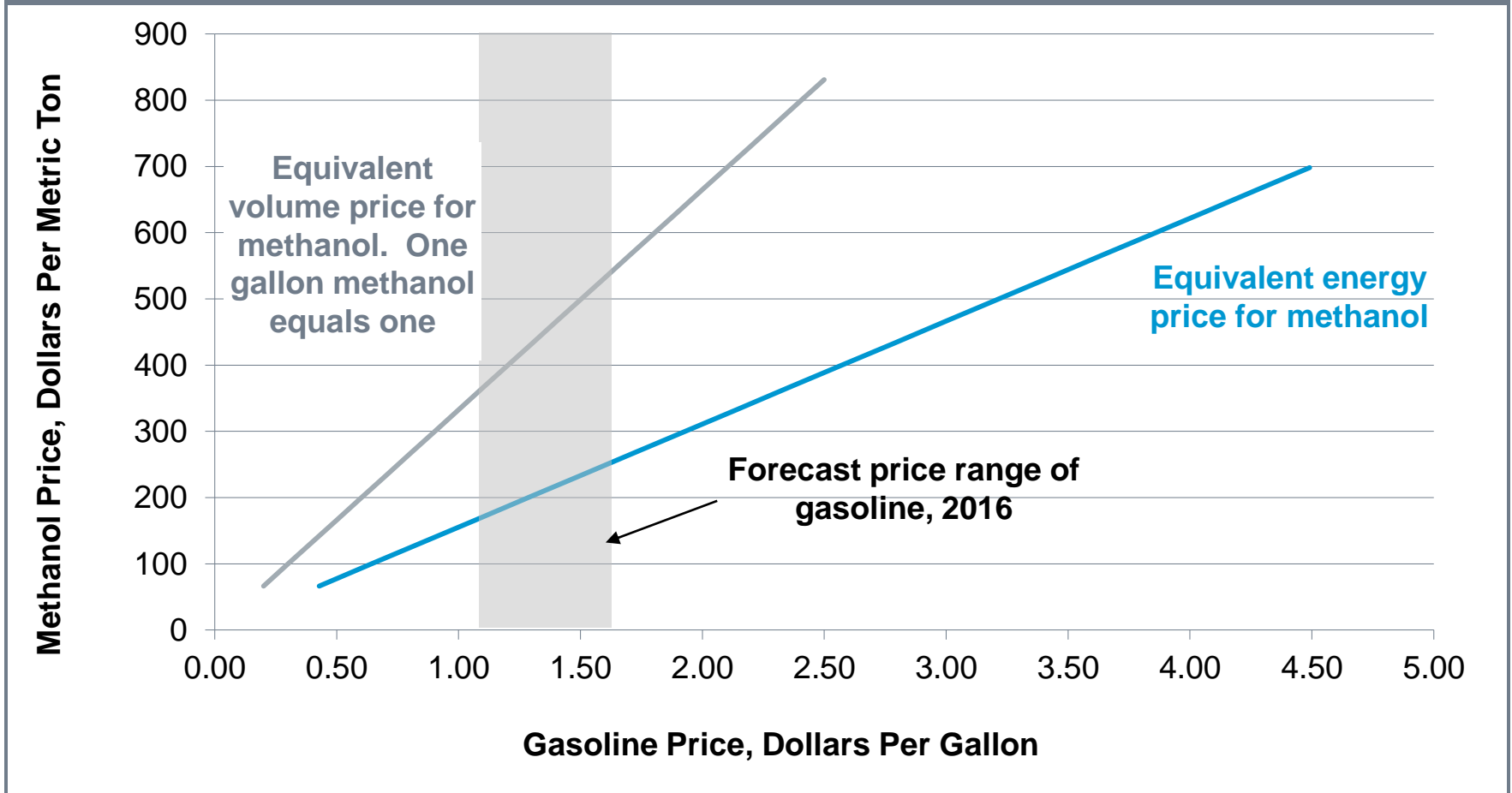


Methanol Affordability Into DME



Methanol Affordability Into Gasoline

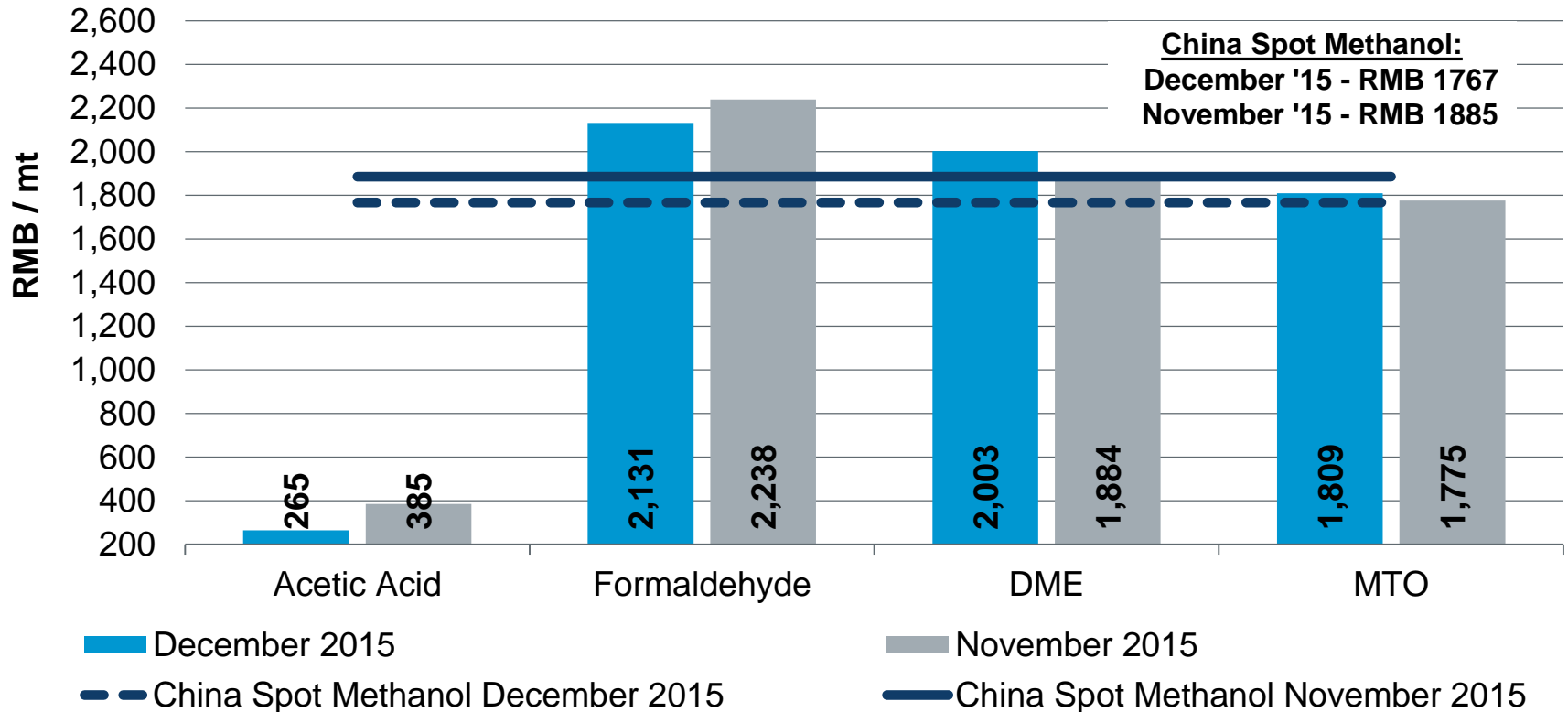
Methanol Values Into Direct Gasoline Blending



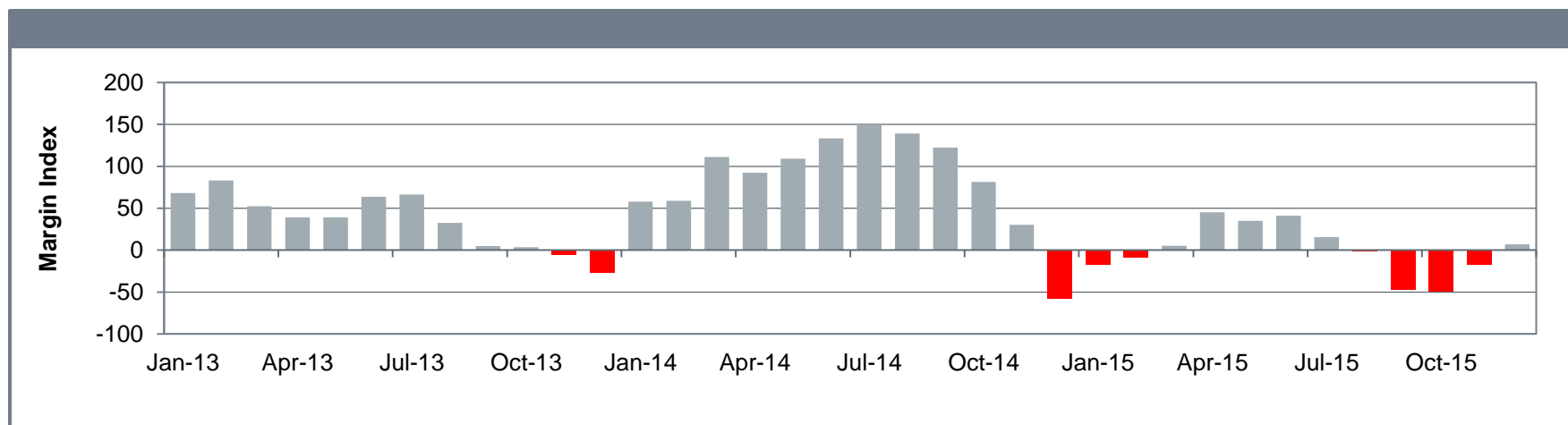
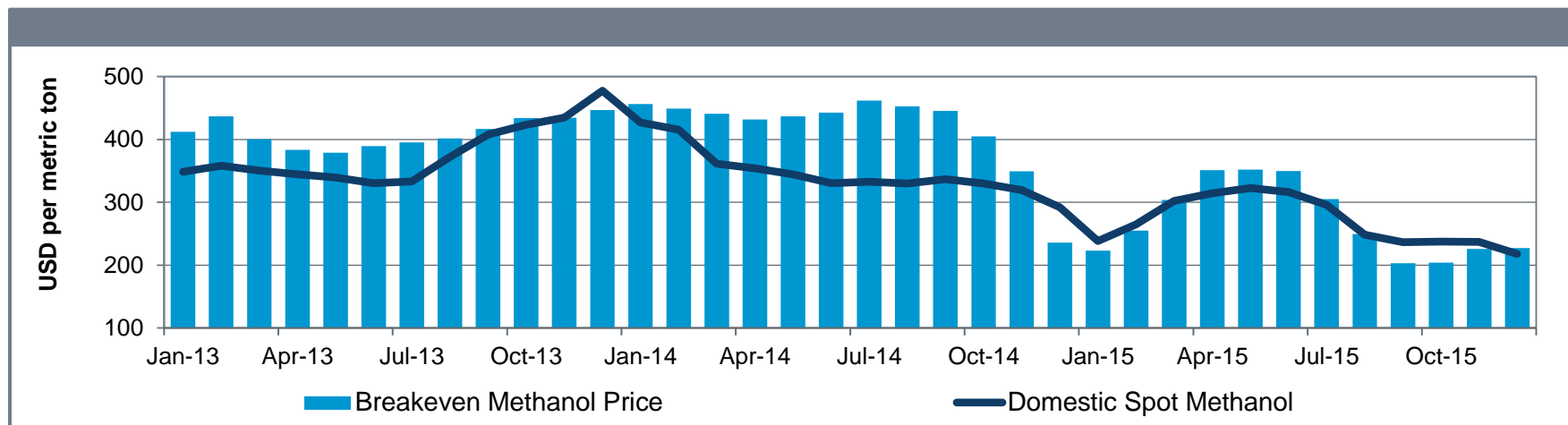
Methanol Affordability

Domestic Methanol Spot Affordability: December 2015 vs. November 2015 (based on spot domestic derivative pricing)

Descriptor: Price in columns indicates what the maximum price is for methanol based on cash cost and price for each derivative before consumers operate at a loss



Methanol Affordability Into MTO



How has the low oil price affected methanol demand?

DME

- Profitability poor
 - 2015 demand essentially flat
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- Issue of ongoing profitability: may reduce operating rates
 - Especially for facilities with no units downstream of propylene

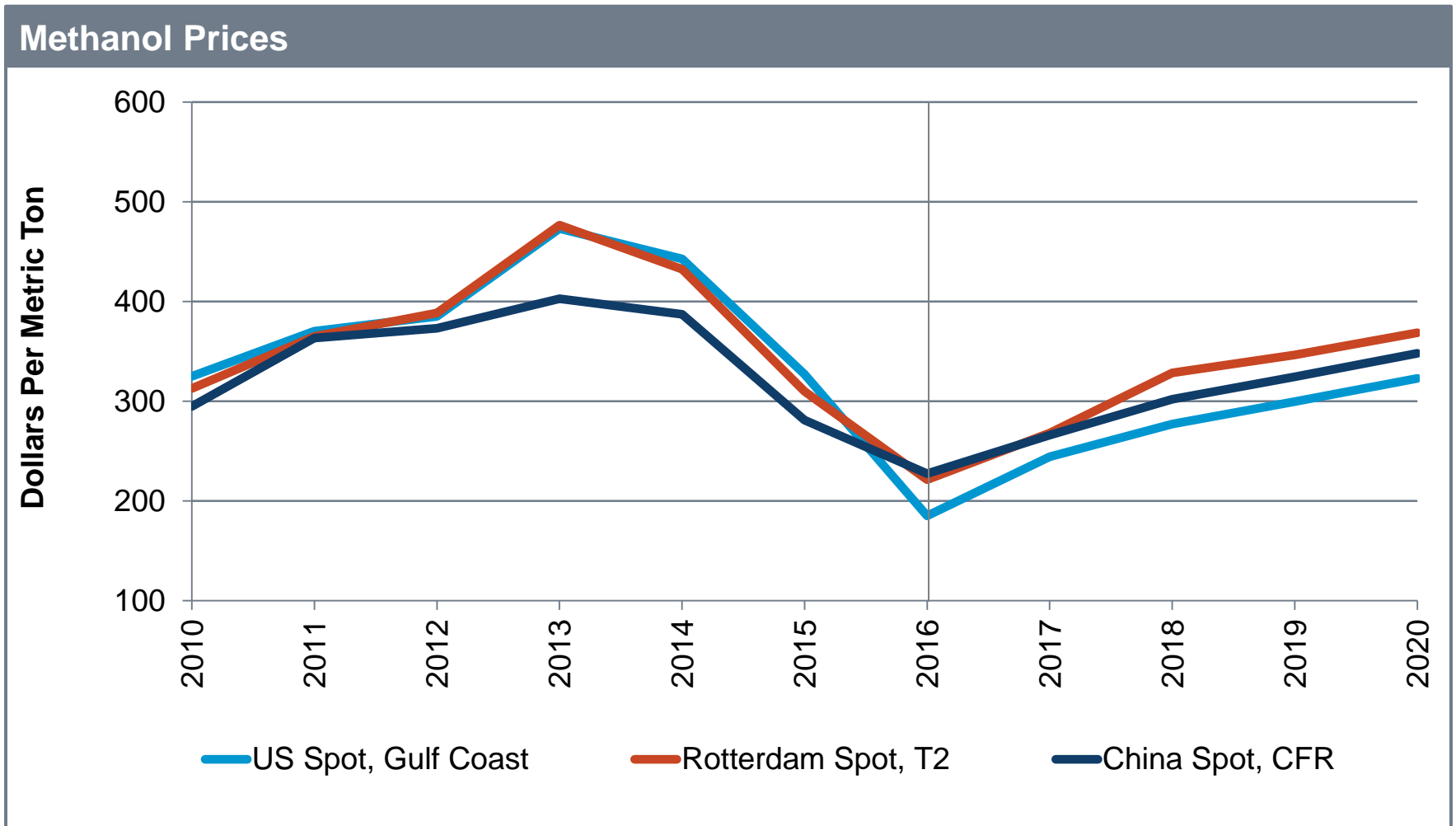
MTO/MTP

Gasoline blending

- Low growth
 - But much blending on a volumetric basis
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- Profitability eroded
 - But gasoline demand healthy given low oil price
 - Healthy growth 2014-15

MTBE

Methanol prices 2010 - 2020



Conclusions

- Demand growth in 2016-2017 depends heavily on the MTO market:
 - New MTO capacity start-up
 - MTO Operating rates/profitability
- Prices forecast to recover slightly but stay in a narrow range in 2016-2017
- New North American projects announced but unlikely to come on stream between now and 2020
- If the Iranian sanctions are permanently suspended:
 - Iran will be free to export to countries other than China and this will reduce regional price differentials
 - Iran will progress its methanol projects and potentially develop new projects



Q & A