

# **OUTLOOK FOR CRUDE OIL AND NATURAL GAS MARKETS: 19<sup>TH</sup> NERVOUS BREAKDOWN (...AND COUNTING)**

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**October 8, 2014**

**Data and closing prices as of October 6, 2014**

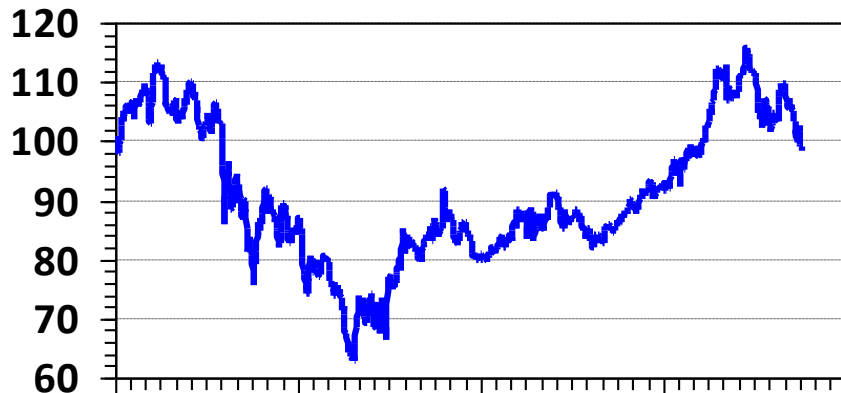
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# CAN'T GET NO SATISFACTION? MARKETS HAVE RETRENCHED

- Global equity markets have been under pressure in recent weeks; Canadian energy taking a beating.
  - Macroeconomic worries – Europe, China.
  - Surging U.S. dollar.
  - Fed's timing on rate increases.
  - Geopolitics (Iraq, IS, Iran, Ukraine, Libya, etc.).

**FCC Can. Gas-Weighted Equity Index**

1/1/ 2011 = 100

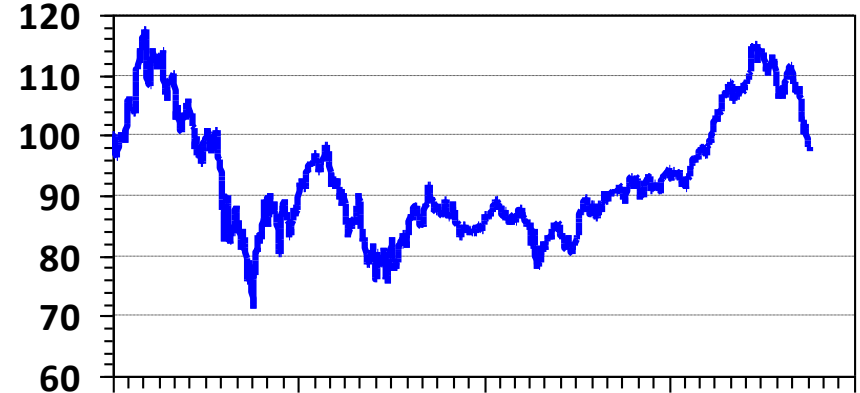


Jan-11 Jan-12 Jan-13 Jan-14 Jan-15

Source: FirstEnergy Capital Corp., Bloomberg

**FCC Can. Oil-Weighted Equity Index**

1/1/ 2011 = 100



Jan-11 Jan-12 Jan-13 Jan-14 Jan-15

Source: FirstEnergy Capital Corp., Bloomberg

- We think the negativity has been overdone and that selling pressures will ease soon.
  - Crude Oil
    - Emerging market demand is still doing well.
    - Canadian price spreads very attractive.
    - U.S. still has room to move in dealing with supply growth.
    - Inventory builds not critical in U.S. or globally.
    - OPEC will act by year end, if needed.
  - Natural Gas
    - Prices still well ahead of last year.
    - Storage has not caught up to last year.
    - Structural demand continues to improve.
    - Supply growth is the major overhang.

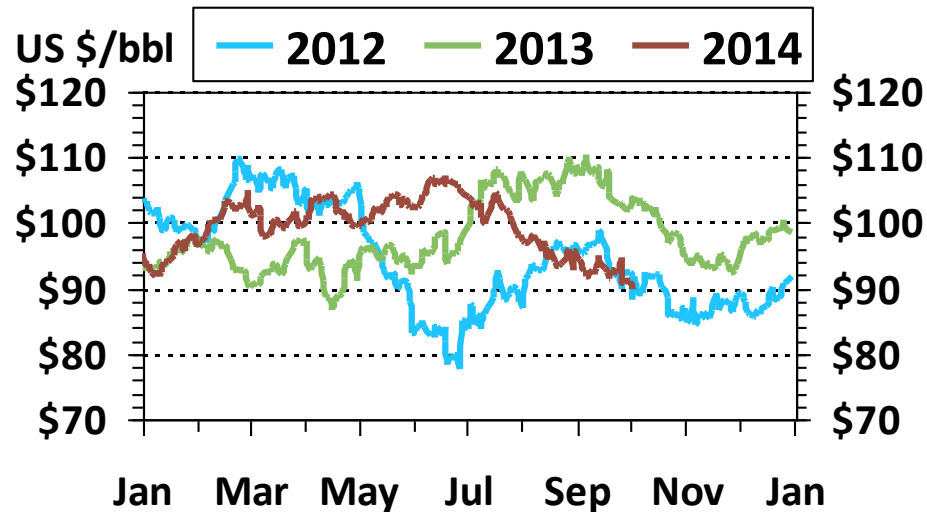
# WORLD CRUDE OIL MARKETS



# CRUDE OIL MARKETS – SELLING PRESSURES ARE EASING

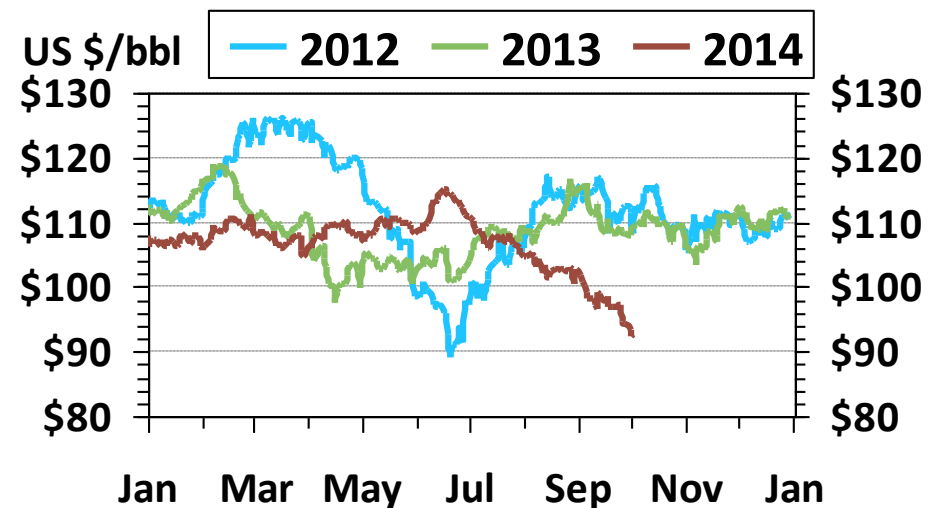
- We think a bottom is being put in for both WTI and Brent near current levels; it will take time to clean up sloppy balances in the Atlantic Basin.
- Brent contango will ease, but it may take actual or threatened OPEC action; slow grind for prices.
- Lower prices will be encouraging demand as we head into winter; refinery upswing is coming.

Nymex WTI Near Month Crude Oil Prices



Source: FirstEnergy Capital Corp., Bloomberg.

ICE Brent Near Month Crude Oil Prices

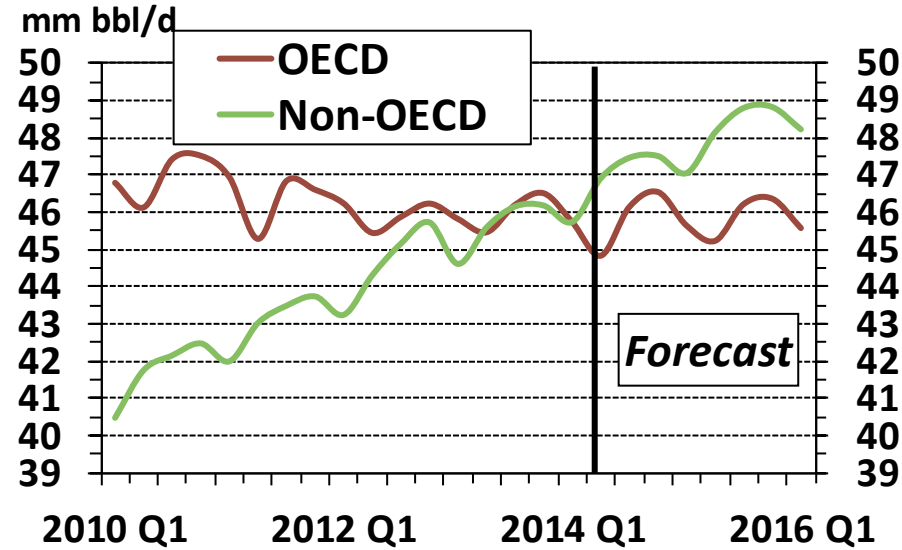


Source: FirstEnergy Capital Corp., Bloomberg.

# CRUDE OIL MARKETS – DEMAND IS NOT REALLY AN ISSUE

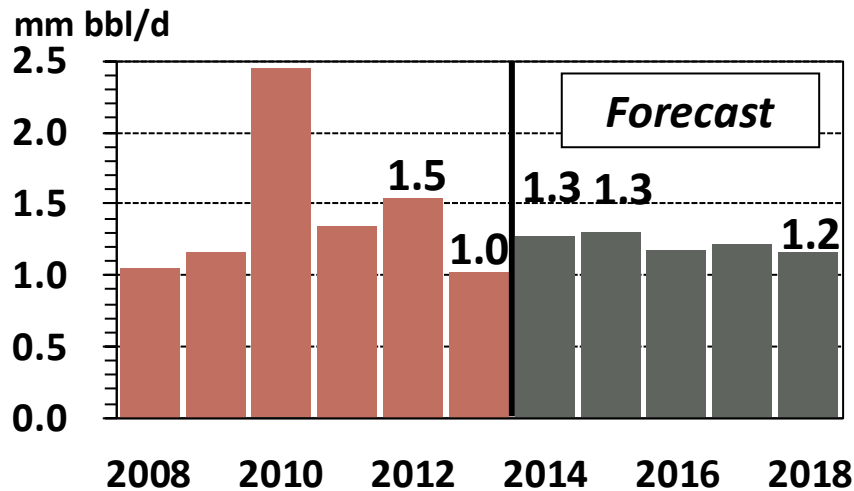
- Despite worries over demand; the marginal barrel of demand strength is in the EMs; these are holding up well.
- Slower China has been factored in long ago.

## OECD and Non-OECD Petroleum Demand



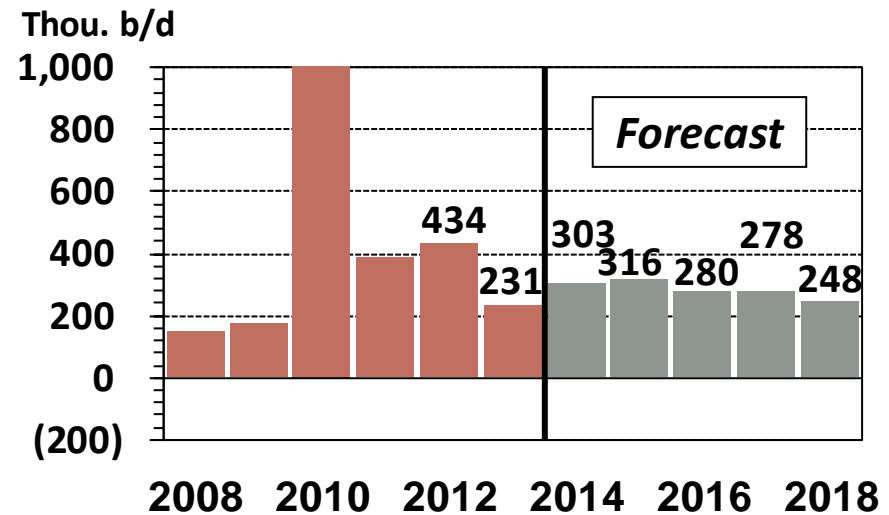
Source: FirstEnergy Capital Corp., IEA, Oil Market Intelligence.

## Emerging Economy Oil Demand Growth



Source: FirstEnergy Capital Corp., IEA.

## Chinese Oil Demand Growth



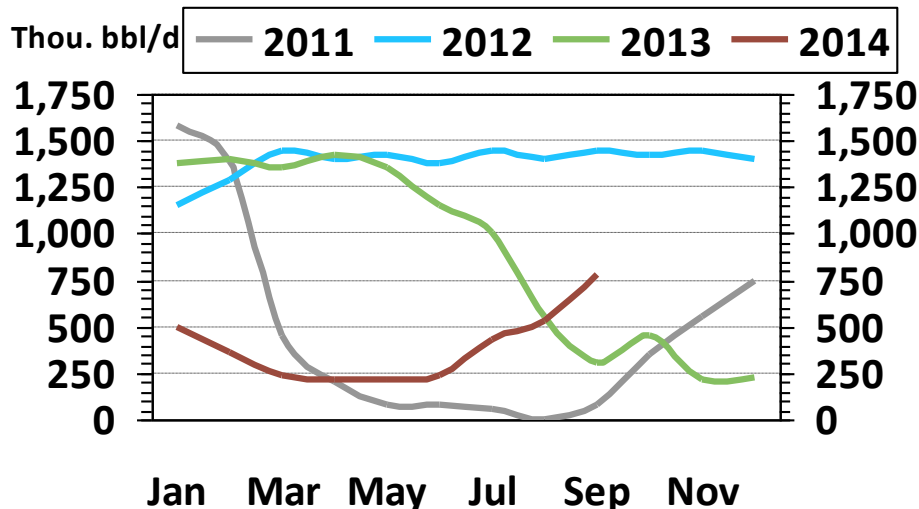
Source: FirstEnergy Capital Corp., IEA.

- It is supply issues, not demand issues, that will be driving WTI and Brent prices for the next 12 to 36 months.
- WTI is dealing with rapid U.S. supply expansion and still has avenues of adjustment.
- For Brent, it is feeling U.S. supply growth to some extent, but has the ultimate fallback position in terms of OPEC actions to rebalance the market.
- We think a Brent price closer to US \$100 makes more sense given some of the inherent challenges for supplies outside of North America; there is actually more upside than downside price risk from overseas supplies (and lack thereof).

# SHORT TERM SUPPLY DRIVERS FOR BRENT

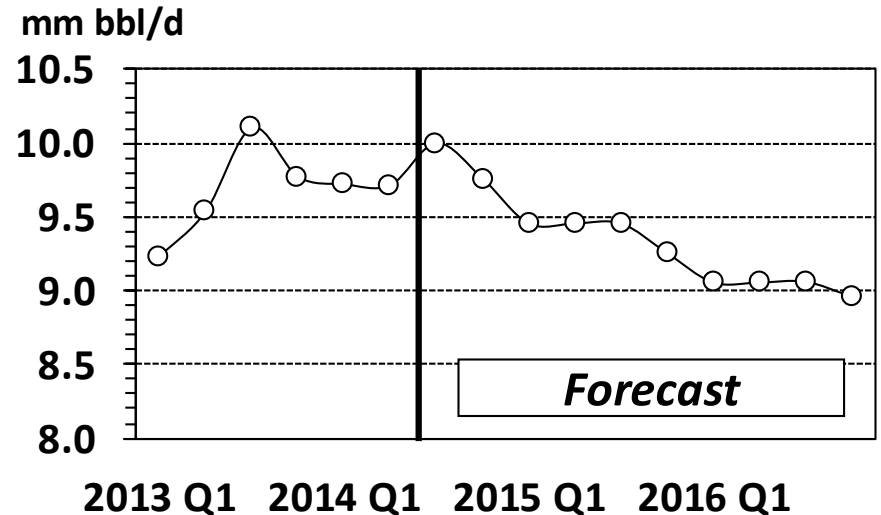
- Short term Brent pricing (next few months) is going to be a geopolitics story (Ukraine, ISIS-Iraq, Libya).
- Libyan supplies have been growing, despite violence, but we think most near term gains have been captured and will top out near 900k bbl/d.
- Additional Libyan barrels will be offset by Saudis (mostly), with output to stay within Saudis comfort range of 8.5-10 million bbl/d; no major oversupply to emerge in 1Q15.

Libya Crude Oil Supply



Source: FirstEnergy Capital Corp., IEA.

Saudi Arabia Quarterly Crude Oil Supply



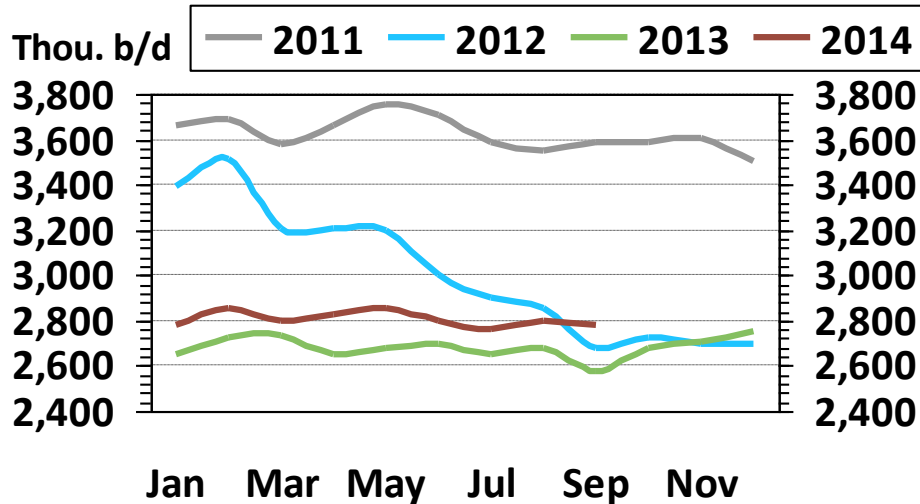
Source: FirstEnergy Capital Corp., IEA.



# MEDIUM TERM SUPPLY DRIVERS FOR BRENT

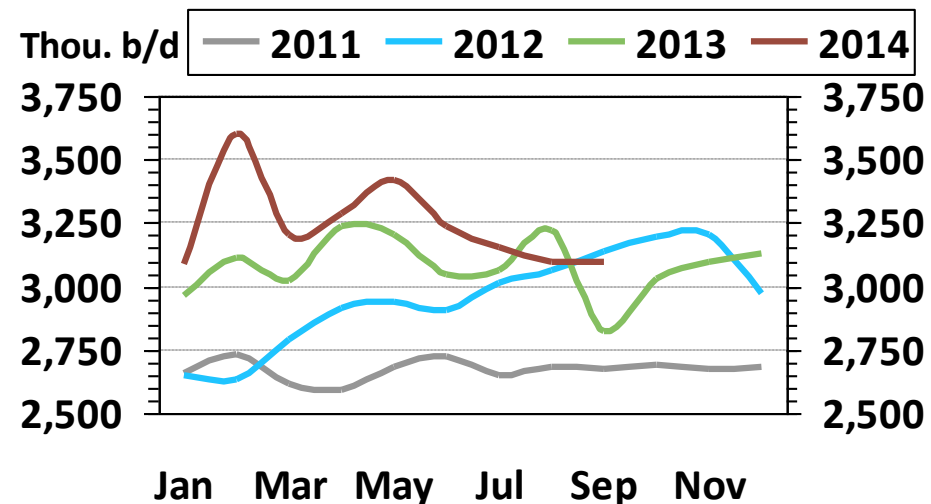
- Movement on the Iran nuclear issue has been glacial; unlikely to achieve a breakthrough by mid-2015; could take up to six months for Iranian supplies to recover if there is a lifting of sanctions; Saudis can adjust for some of this supply as well.
- Iraq has massive internal security concerns; IS and Kurd issues will not be going away anytime soon; these represent real threats to any long term supply upside for Iraq.
- Iraq's long term supply viability is a major worry.

**Iran Crude Oil Supply**



Source: FirstEnergy Capital Corp, IEA.

**Iraq Crude Oil Supply**

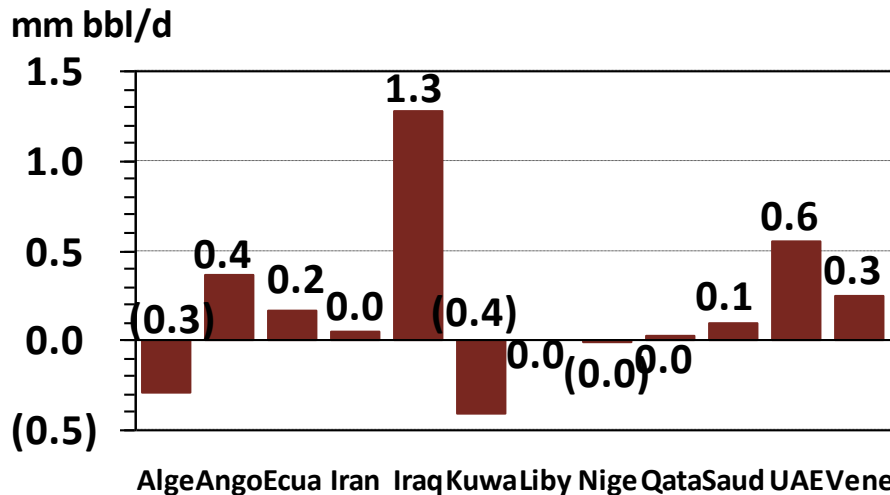


Source: FirstEnergy Capital Corp, IEA.

# LONG TERM SUPPLY DRIVERS FOR BRENT

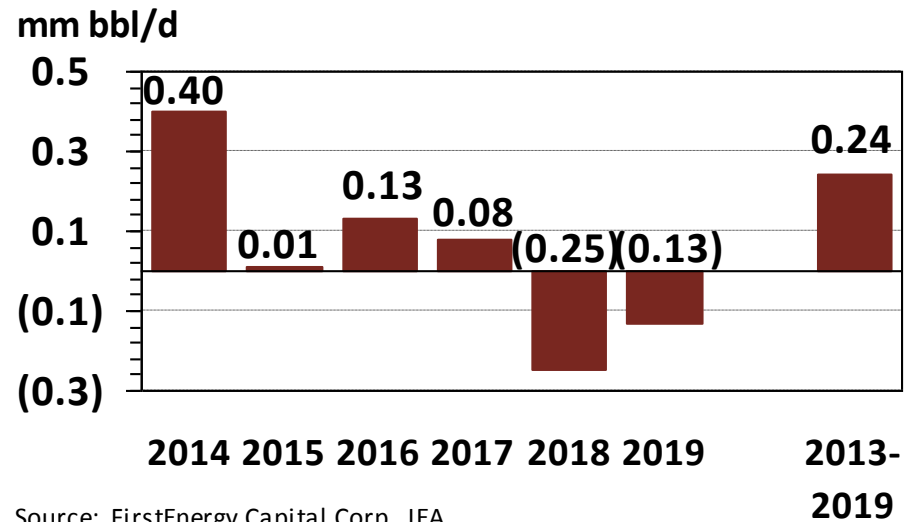
- Iraq provides the biggest capacity add for OPEC in the next five years, if only it can find peace and security.
- Without Iraq's increases or only minimal capacity increases, the rest of OPEC capacity growth is very limited; this could stretch the abilities of the cartel to provide sufficient supplies to emerging markets; another factor to support long term Brent prices.

Net Capacity Adds: OPEC (Total 2.1 mm bbl/d)



Source: FirstEnergy Capital Corp., IEA.

Net Capacity Adds: Saudi, Kuwait, UAE



Source: FirstEnergy Capital Corp., IEA.

# OTHER BRENT DRIVERS – THE CHINA EXAMPLE

- China has plans to double strategic crude holdings from current levels by 2020; could be 250 to 500k bbl/d of build depending on market (price) and economic considerations.

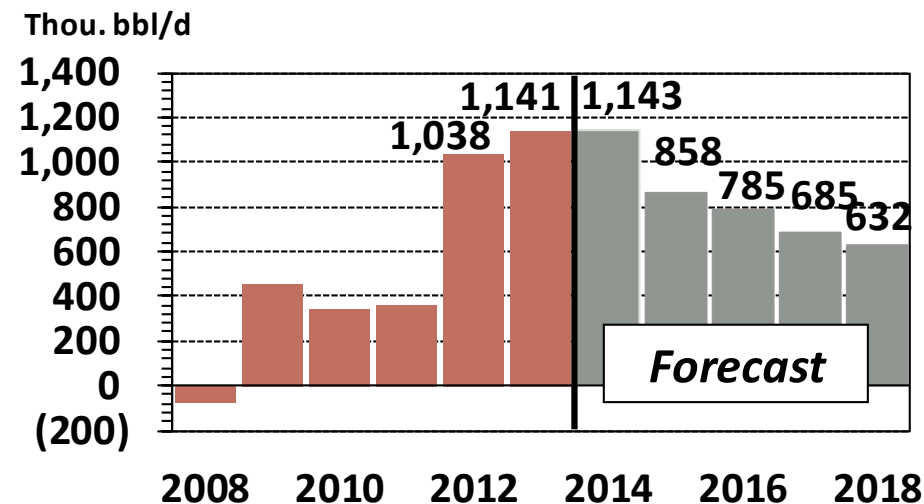
<b>Chinese Strategic Petroleum Reserve Sites</b>					
(million barrels)					
	<u>Operator</u>	<u>Location</u>	<u>Capacity</u>	<u>Status</u>	<u>Completion</u>
<b>Phase 1</b>	Sinopec	Zhenhai, Zhejiang	32.7	filled	3Q06
	Sinochem	Zhoushan, Zhejiang	31.4	filled	4Q07
	Sinopec	Huangdao, Shandong	20.1	filled	4Q07
	CNPC	Dalian, Liaoning	<u>18.9</u>	filled	4Q08
<b>Total Phase 1</b>			<b>103.1</b>		
<b>Phase 2</b>	CNPC	Lanzhou, Gansu	18.9	filled	1H11
	CNPC	Dushanzi, Xinjiang	18.9	filled	1H11
	Sinopec	Tianjin Phase 1	20.1	filled	2014
	CNPC	Shanshan, Xinjiang	39.0	filling, under construction	2014
	Sinopec	Huangdao, Shandong*	18.9	filling, test phase	2014
	CNPC	Jintan, Jiangsu	15.7	under construction	2014
	CNOOC	Huizhou, Guangdong	31.4	under construction	2014
	CNPC	Jinzhou, Liaoning	18.9	under construction	2014
	Sinopec	Zhoushan, Zhejiang	19.0	under construction	2014
	Sinopec	Zhanjiang, Guangdong	<u>44.0</u>	under construction	2015
	<b>Total Phase 2</b>			<b>244.8</b>	
<b>Phase 3</b>	Sinopec	Tianjin Phase 2	20.1	planned	2015
	unknown	Wanzhou, Chongqing		planned	2020
	Sinopec	Caofeidian, Hebei	38.0	planned	2020
	Sinopec	Yangpu, Heinan		planned	2020
	CNPC	Rizhao, Shandong		planned	2020
	CNPC	Daqing, Heilongjiang		planned	2020
	CNPC	Yunnan province		planned	2020
	CNPC	Qinzhou, Guangxi		planned	2020
<b>Total Phase 3 (est.)</b>			<b>152.1</b>		
<b>Total SPR</b>			<b>500.0</b>		2020

Source: IEA World Oil Market Report (July 2014)

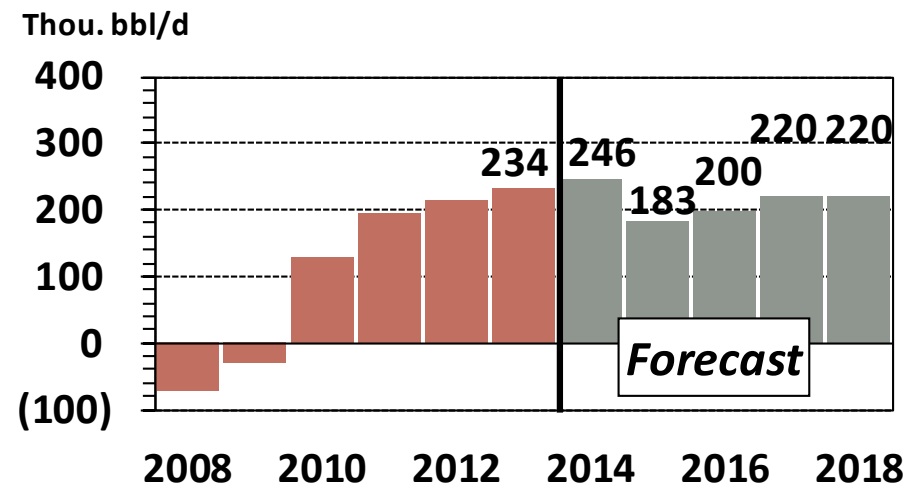
# WTI'S WORRIES ARE ALSO SUPPLY, NOT DEMAND RELATED

- U.S. domestic demand is holding up very well, including external demand for refined products.
- Main concern is that with the growth in light crude oil supplies, is there enough room to accommodate all the supply without a price implosion?
- Canadian supply growth feeding into a market which is already seeing record supply expansion.

### U.S. Crude Oil Supply Growth



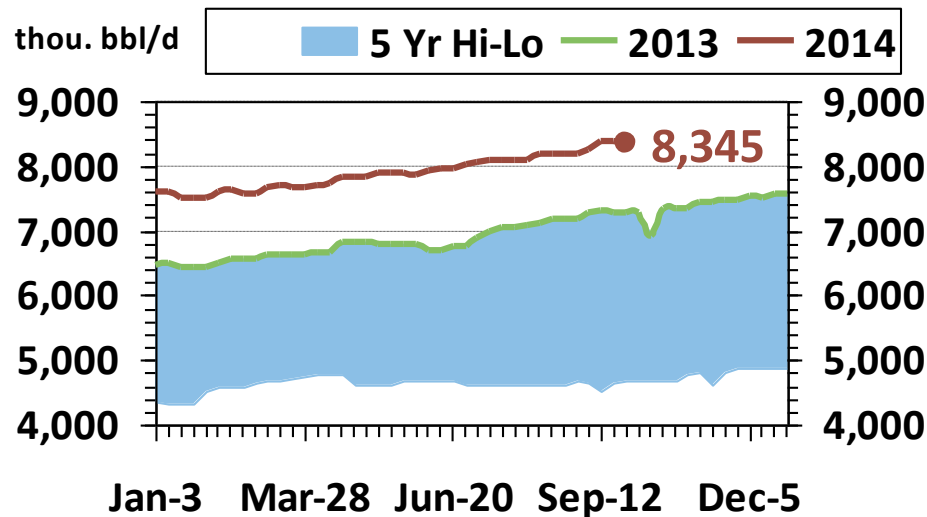
### Canadian Crude Oil Supply Growth



# IT IS LIGHT OIL SUPPLY GROWTH THAT IS THE CONCERN

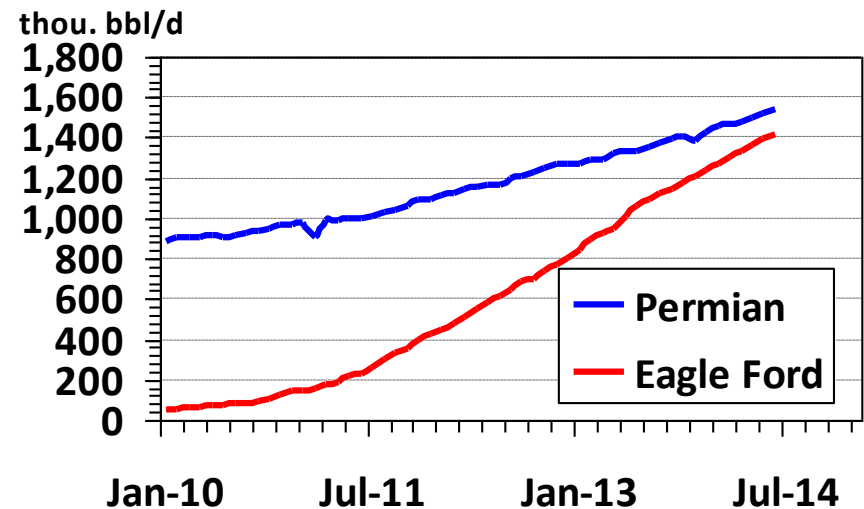
- U.S. supply growth has been primarily powered by lighter barrels and condensate (Bakken, Permian and Eagle Ford volumes).
- U.S. refinery market in the Midwest and Gulf Coast is geared toward medium and heavy barrel use; West and East Coast more geared to medium and light barrels.

U.S. Lower 48 Crude Oil Production



Source: FirstEnergy Capital Corp., US DOE/EIA.

Permian and Eagle Ford Liquids Production

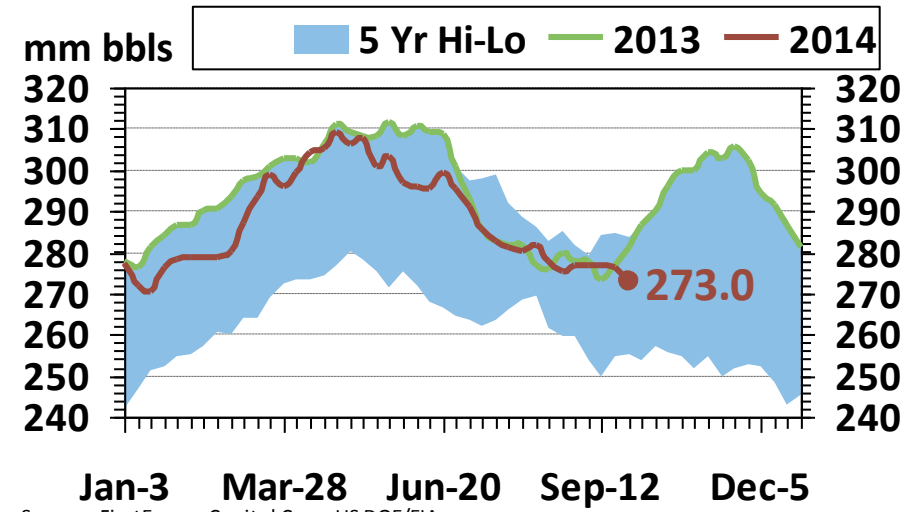


Source: FirstEnergy Capital Corp., U.S. DOE/EIA.

# WTI DOES HAVE OTHER AVENUES TO AVOID MELTDOWN

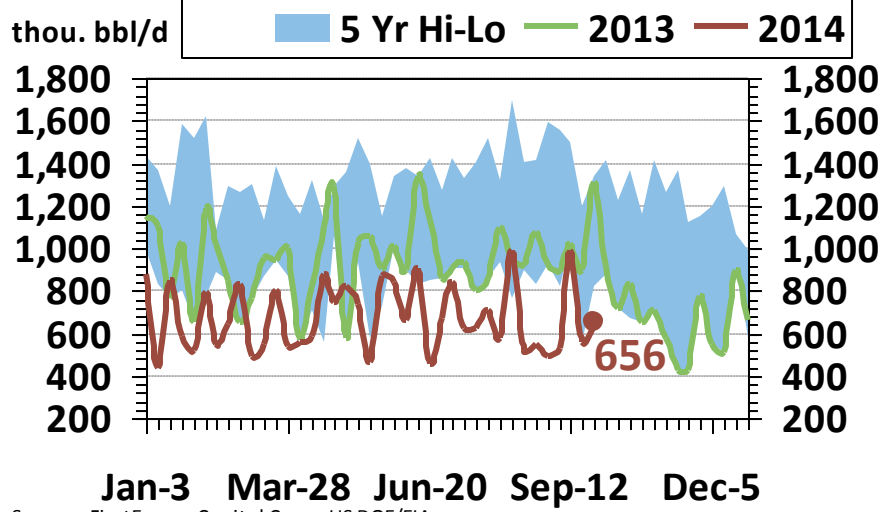
- The U.S. still has room to move to accommodate light supply growth.
  - More pipe and rail.
  - Plenty of storage.
  - Re-exports of Can. crude.
  - Exports to Mexico.
  - Higher refinery use.

U.S. Crude Oil Inventories PADD 2 + 3



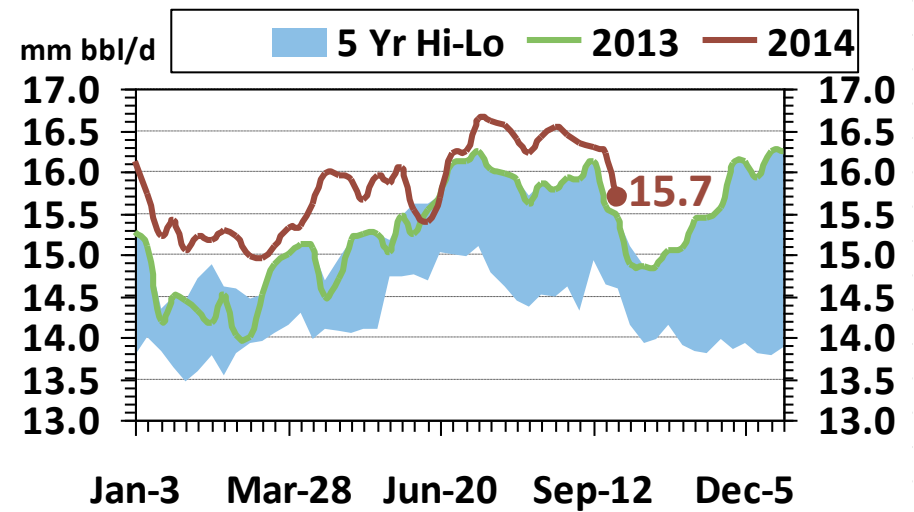
Source: FirstEnergy Capital Corp., US DOE/EIA.

U.S. PADD 1 Waterborne Crude Oil Imports



Source: FirstEnergy Capital Corp., US DOE/EIA.

U.S. Total Refinery Runs

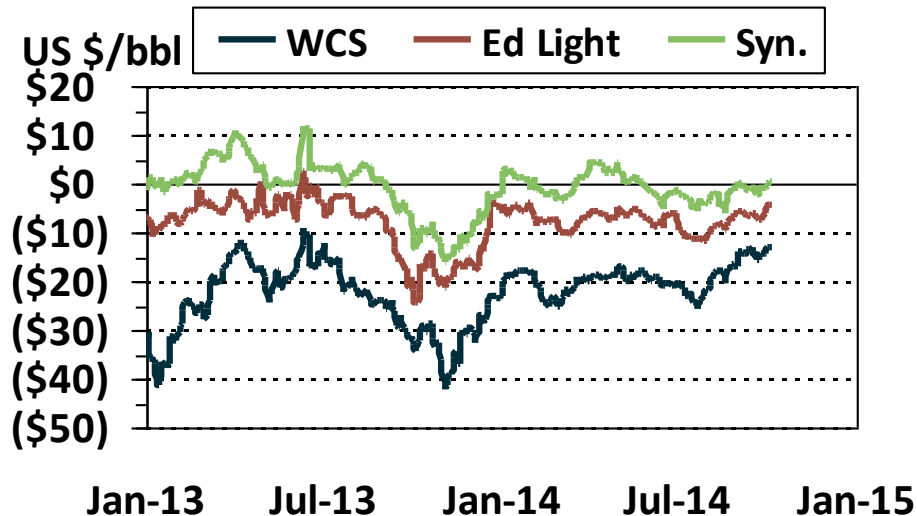


Source: FirstEnergy Capital Corp., US DOE/EIA.

# HEAVY OIL IS DOING NICELY BY COMPARISON

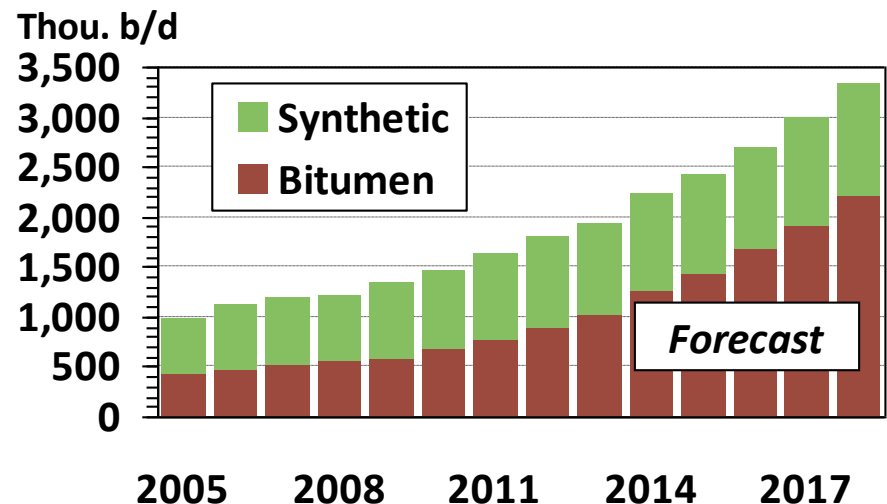
- In contrast, Canadian absolute prices and differentials are holding up much better than expected.
- Supply outlets have been steadily expanding in the past two years and with Canadian supply geared toward heavy, it is ideal for capturing more market share in the U.S.
- Latest tightening is driven by linefill needs for Flanagan South startup (Midwest to Cushing).

WTI vs. Canadian Crude Oil Prices



Source: FirstEnergy Capital Corp., Bloomberg.

Oilsands Production Growth

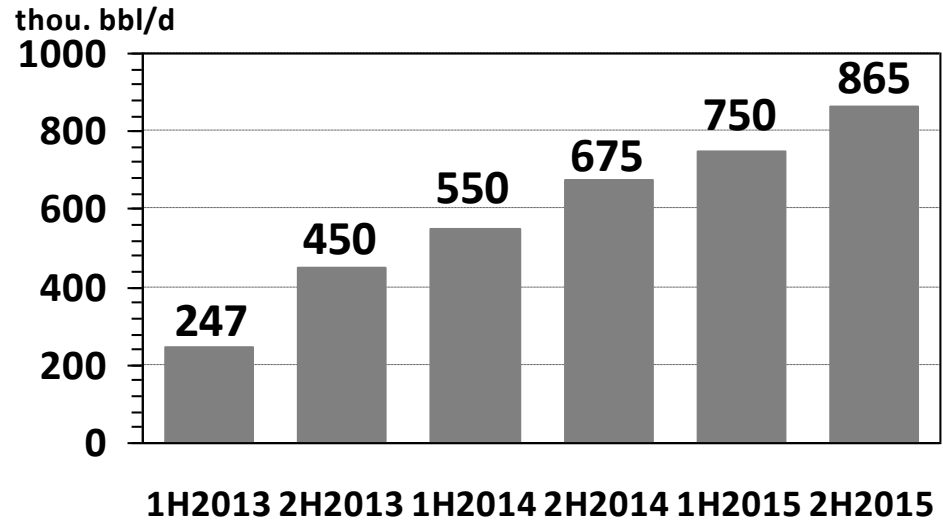


Source: FirstEnergy Capital Corp., National Energy Board.

# MORE CAPACITY TO MOVE CANADIAN CRUDE OIL

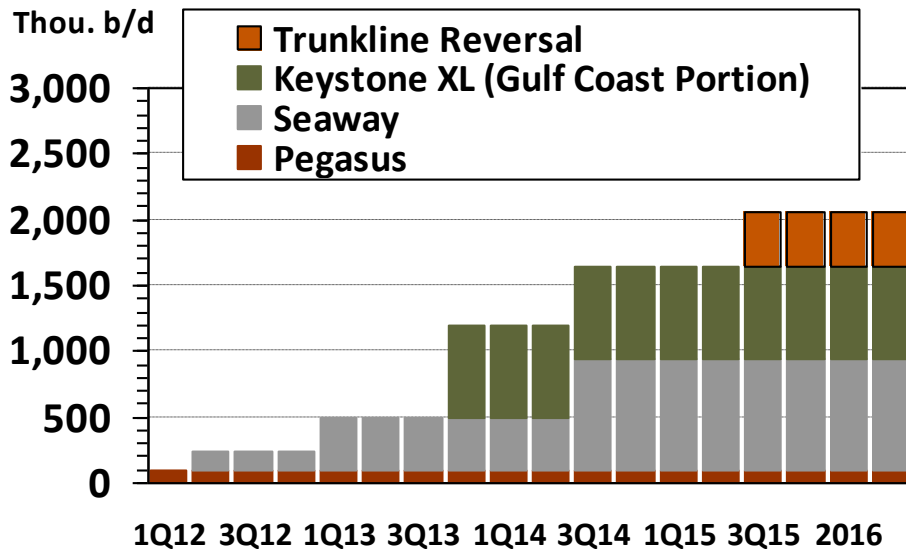
- Railing capacity is expanding rapidly.
- More will be needed to accommodate supply growth.
- Rail car changes will slow expansion, but not stop it.

## Crude Oil Railing Capacity from Western Canada



Source: FirstEnergy Capital Corp.

## Pipeline Expansions from Cushing to G. Coast



Source: FirstEnergy Capital Corp.

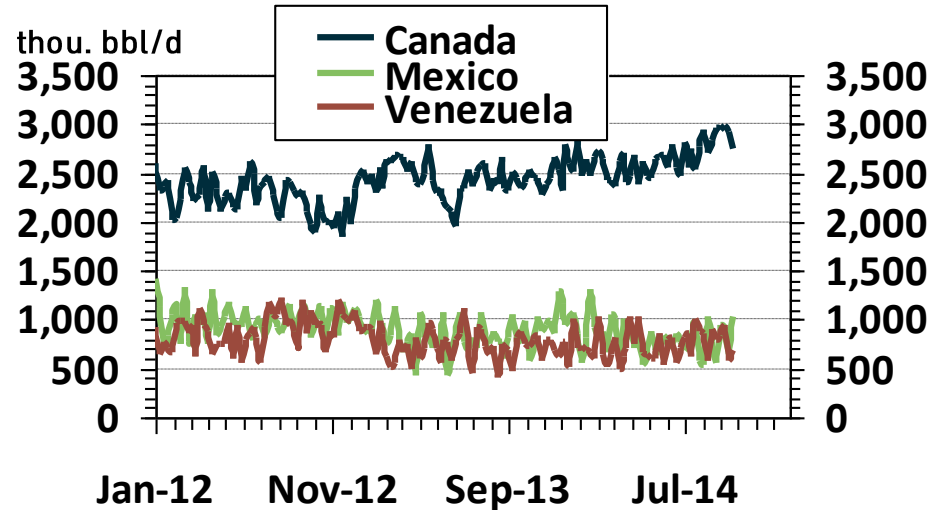
- More pipe capacity into the U.S. will allow for greater market capture.
- More pipe will be needed inside Canada (for export) as U.S. upside will be limited by 2019/2020.



# MORE MARKET CAPTURE BY CANADIAN CRUDE IN THE U.S.

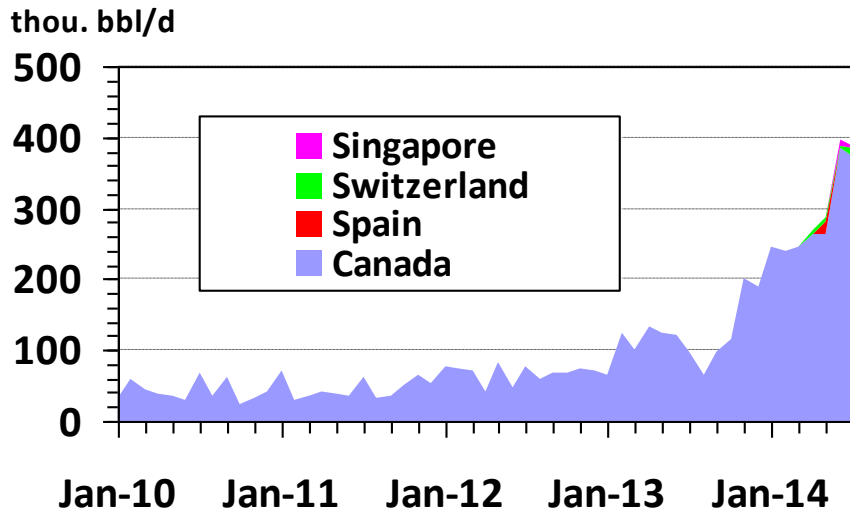
- Canada will be taking market share from other primary heavy oil suppliers such as Ven. and Mexico.
- Security of supply and prices will be attractive for Canadian crudes.

## U.S. Oil Imports Canada vs. Mexico/Ven.



Source: FirstEnergy Capital Corp., U.S. DOE/EIA.

## U.S. Exports of Crude Oil



Source: FirstEnergy Capital Corp., U.S. DOE/EIA.

- For now, this is the single greatest market opportunity for Canadian crude: re-exports via the U.S. Gulf Coast.
- Captures something closer to world prices; upside is only limited by rail and pipe capacity.

# FOR CANADA, THE CRUDE OIL PICTURE IS ATTRACTIVE

- Between rail and pipe, we think diff blowouts will be rare and have chosen diffs based on a blended transport cost.

FirstEnergy Crude Oil Price Differential Outlook					
		WTI-SCO US\$		WTI-WCS US\$	
	\$/bbl	<i>Old</i>	<i>NEW</i>	<i>Old</i>	<i>NEW</i>
<u>2013</u>	Average	\$0.12	\$0.12	\$25.34	\$25.34
<u>2014</u>	Q1	\$0.38	\$0.38	\$22.11	\$22.11
	Q2	(\$2.26)	(\$2.17)	\$22.38	\$22.69
	Q3 est.	(\$0.67)	(\$0.17)	\$21.33	\$20.48
	Q4 est.	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$22.00</u>	<u>\$19.17</u>
	<b>Average est.</b>	<b>(\$0.64)</b>	<b>(\$0.49)</b>	<b>\$21.95</b>	<b>\$21.11</b>
<u>2015</u>	Q1 est.	(\$0.33)	(\$0.33)	\$20.00	\$20.00
	Q2 est.	(\$0.33)	(\$0.33)	\$18.00	\$18.00
	Q3 est.	(\$1.00)	(\$1.00)	\$18.00	\$18.00
	Q4 est.	<u>\$0.33</u>	<u>\$0.33</u>	<u>\$19.00</u>	<u>\$19.00</u>
	<b>Average est.</b>	<b>(\$0.33)</b>	<b>(\$0.33)</b>	<b>\$18.75</b>	<b>\$18.75</b>
<u>2016</u>	<b>Average est.</b>	<b>(\$1.00)</b>	<b>(\$1.00)</b>	<b>\$19.25</b>	<b>\$19.25</b>
<u>2017</u>	<b>Average est.</b>	<b>(\$1.00)</b>	<b>(\$1.00)</b>	<b>\$18.25</b>	<b>\$18.25</b>

Notes: All historical averages computed using weekday data only.  
 Source: FirstEnergy Capital Corp., Bloomberg; est. refers to forecasted value.

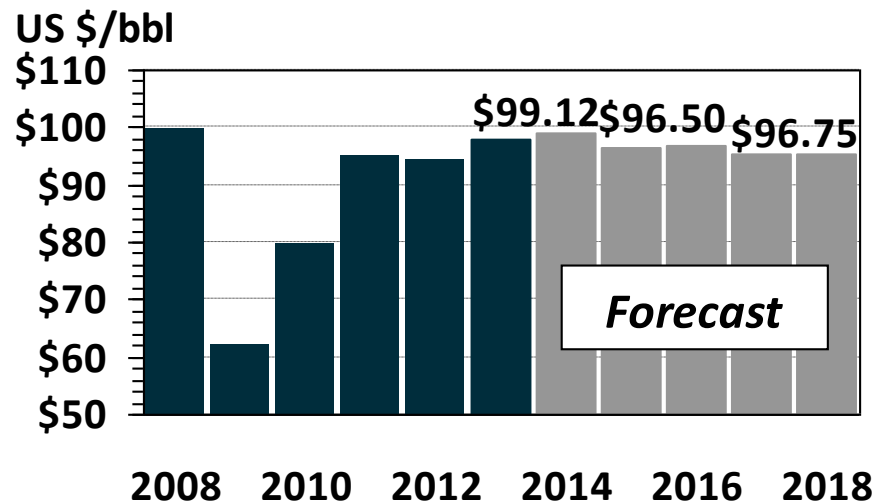
## CRUDE OIL MARKET CONCLUSIONS

- We think that selling pressures on WTI and Brent are easing; market has over done it to downside; now more price risk to upside than downside.
- Brent prices to find support by OPEC actions and little supply growth outside of North America; demand is holding up well.
- WTI prices still have wiggle room as there is still more adjustments that can be made in the U.S. market to accommodate U.S. and Canadian supply growth.
- Looking at the possibility of U.S. crude exports post Obama, late 2017 or early 2018.
- U.S. crude exports might be needed should Iraq growth fail to materialize; more condensate exports coming.
- Canadian crude supply will need more export outlets via U.S. Gulf and Canadian coasts.

# FIRSTENERGY WTI AND BRENT PRICE FORECASTS

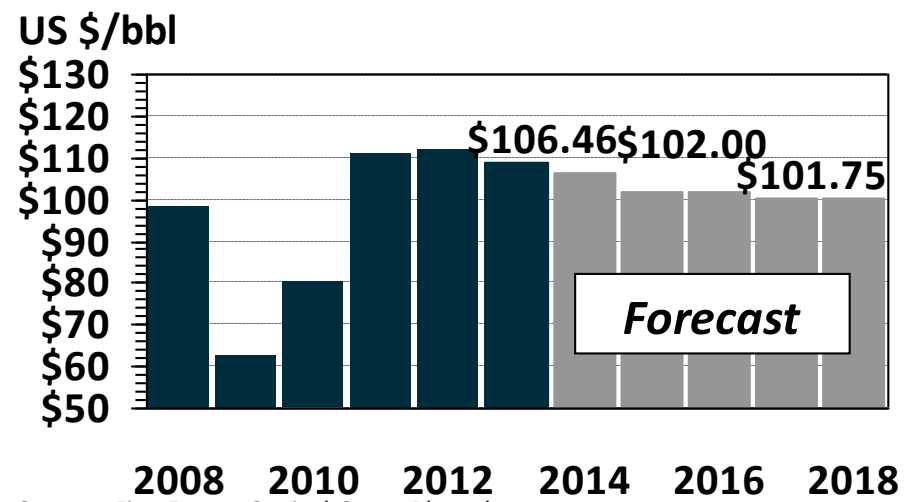
- US \$100+ per barrel world for Brent going forward; if more supply tightness and capacity issues emerge, this outlook could prove to be too conservative.
- For WTI, we think mid-US \$90s makes more sense given steady pull for exports of refined products, refining margins, and still solid U.S. demand growth.
- U.S. can handle the supply growth and hold these prices.

### Nymex WTI Price Outlook



Source: FirstEnergy Capital Corp., Bloomberg.

### ICE Brent Price Outlook



Source: FirstEnergy Capital Corp., Bloomberg.

## FirstEnergy Crude Oil Price Outlook

		West Texas		Brent	
	US \$/bbl	<i>Old</i>	<i>NEW</i>	<i>Old</i>	<i>NEW</i>
<b><u>2013</u></b>	Average	\$98.05	\$98.05	\$108.70	\$108.70
<b><u>2014</u></b>	Q1	\$98.61	\$98.61	\$107.87	\$107.87
	Q2	\$102.36	\$102.99	\$109.19	\$109.76
	Q3 est.	\$100.08	\$97.82	\$107.08	\$104.19
	Q4 est.	<u>\$98.93</u>	<u>\$97.00</u>	<u>\$105.93</u>	<u>\$104.00</u>
	<b>Average est.</b>	<b>\$100.00</b>	<b>\$99.11</b>	<b>\$107.52</b>	<b>\$106.46</b>
<b><u>2015</u></b>	Q1 est.	\$98.00	\$96.00	\$104.00	\$102.00
	Q2 est.	\$98.00	\$97.00	\$104.00	\$103.00
	Q3 est.	\$98.00	\$97.00	\$103.00	\$102.00
	Q4 est.	<u>\$99.00</u>	<u>\$96.00</u>	<u>\$104.00</u>	<u>\$101.00</u>
	<b>Average est.</b>	<b>\$98.25</b>	<b>\$96.50</b>	<b>\$103.75</b>	<b>\$102.00</b>
<b><u>2016</u></b>	<b>Average est.</b>	<b>\$96.75</b>	<b>\$96.75</b>	<b>\$101.75</b>	<b>\$101.75</b>
<b><u>2017</u></b>	<b>Average est.</b>	<b>\$95.50</b>	<b>\$95.50</b>	<b>\$100.50</b>	<b>\$100.50</b>

Notes: All historical averages computed using weekday data only.

Source: FirstEnergy Capital Corp., Bloomberg; est. refers to forecasted value.

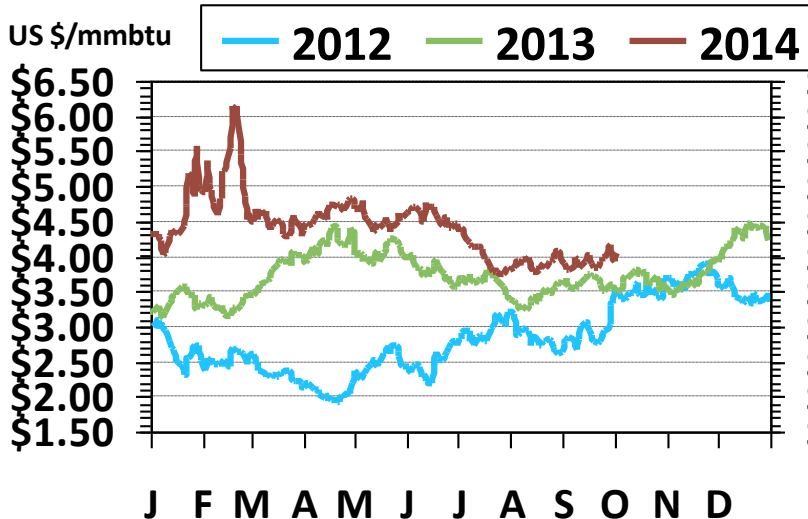
# NORTH AMERICAN NATURAL GAS MARKETS



# NATURAL GAS AND A NERVOUS BREAKDOWN

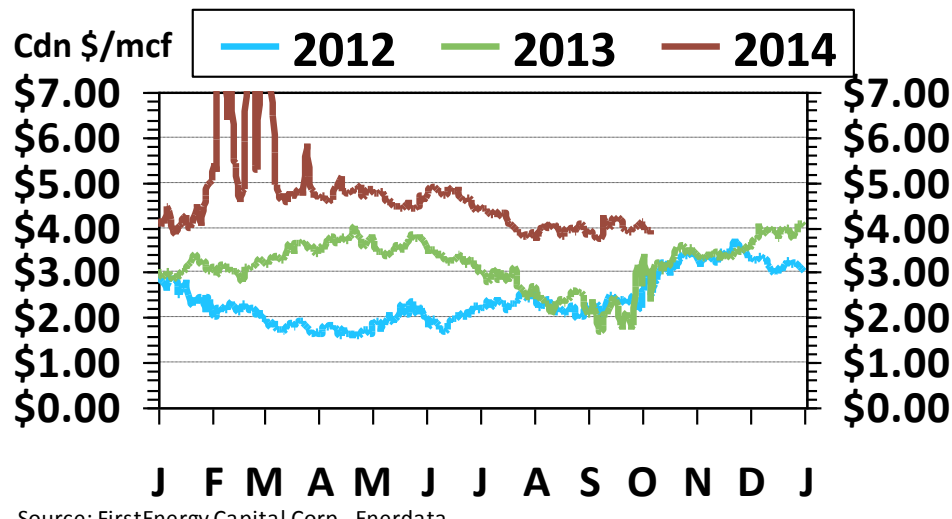
- After extraordinary winter of 2013/14, prices have been trending lower on impressive U.S. supply growth, rapid storage refill and lack of summer in U.S.
- There has also been a psychological shift in terms of pricing gas that has emerged over the past six to nine months, placing less emphasis on storage levels and storage deficits.
- Pricing more driven by need to incentivize demand.

**Nymex Near Month Natural Gas Prices**



Source: FirstEnergy Capital Corp., Bloomberg.

**AECO Daily Natural Gas Price**

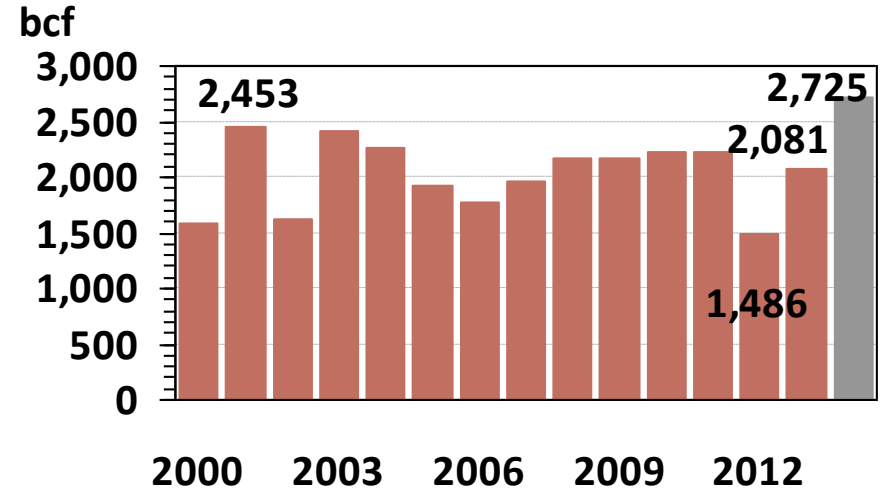


Source: FirstEnergy Capital Corp., Enerdata.

# STORAGE DYNAMICS AND PRICING

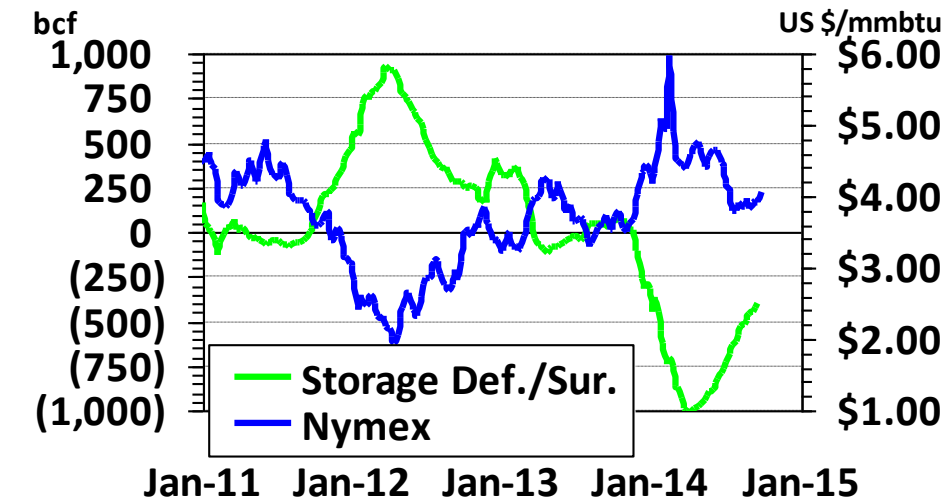
- Largest U.S. storage refill on record.
- Thought impossible as recently as May/June.
- Cool summer allowed for about 200 bcf more gas to reach storage.

## U.S. Storage Summer Injections



Source: FirstEnergy Capital Corp., US DOE/EIA.

## Natural Gas Price vs. 5 Yr. Storage Def/Surp.



Source: FirstEnergy Capital Corp., U.S. DOE/EIA.

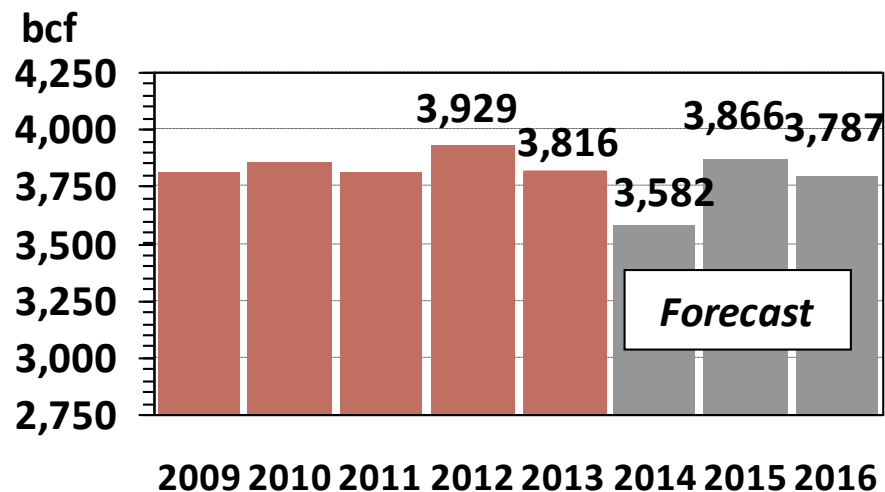
- Although less emphasis on storage than in the past, the rapid elimination of the storage deficit by December will still foster a neutral to bearish outlook for prices.



# THE PRICE FOCUS HAS SHIFTED

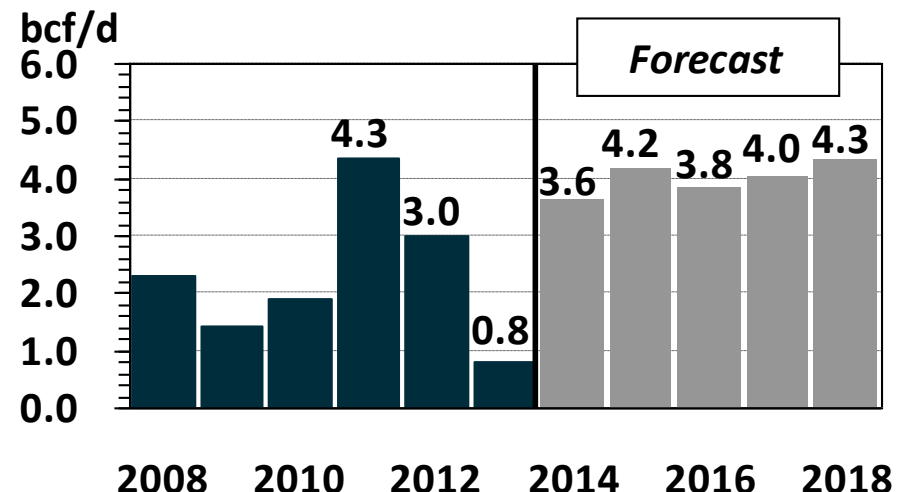
- We think that 2014 has seen a gradual shift in market pricing psychology with less emphasis on storage levels and relative storage; it is still important, just less so.
- With supply growth looking relatively price insensitive, but assured in fairly large quantities going forward, then pricing has become more of incentivizing demand to soak up supply growth, where possible.

### U.S. End-October Storage Outcomes



Source: FirstEnergy Capital Corp., US DOE/EIA.

### U.S. Natural Gas Supply Growth

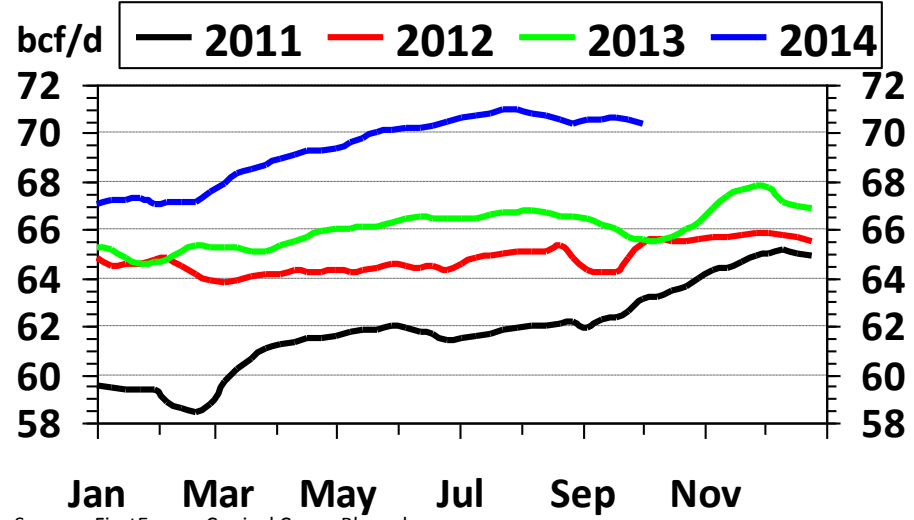


Source: FirstEnergy Capital Corp., US DOE/EIA.

# U.S. GAS SUPPLY RULES THE ROOST

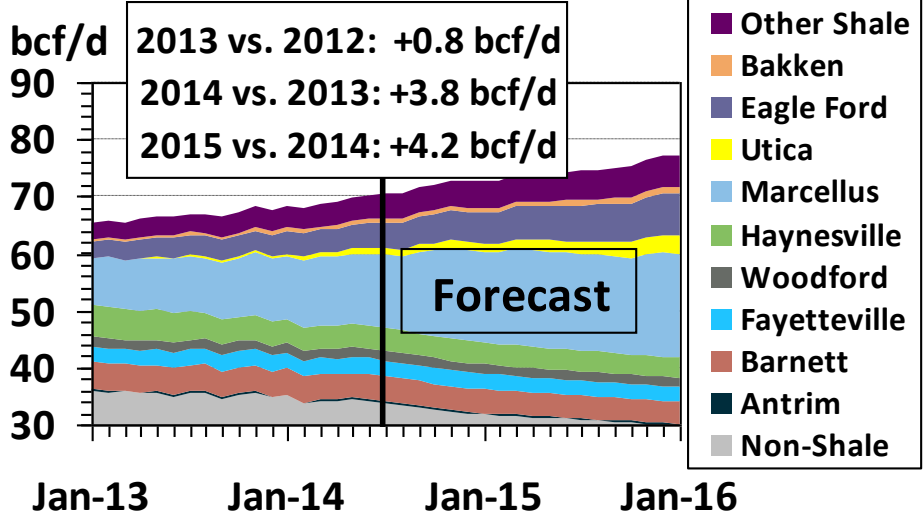
- The tremendous upside that has come from Marcellus and especially Utica supplies has been an eye opener.
- Less constraints on Utica supply going south and west than Marcellus going NE.

## U.S. Weekly Dry Marketable Gas Supply



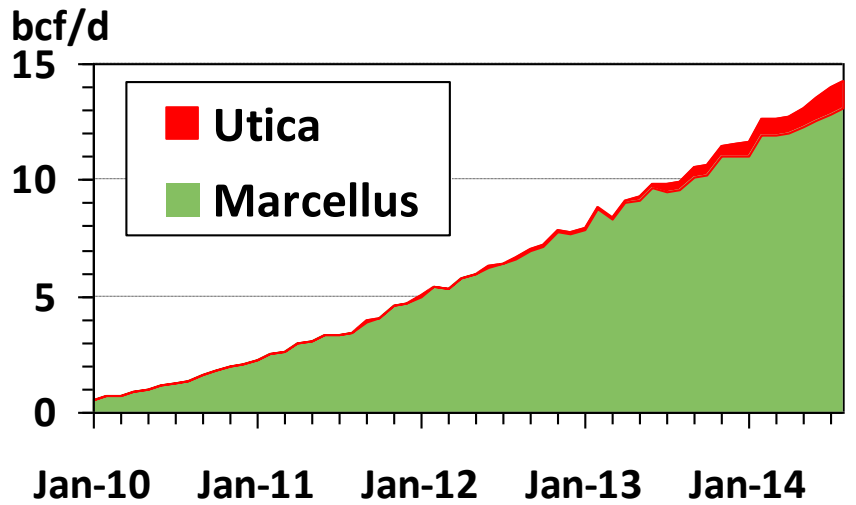
Source: FirstEnergy Capital Corp., Bloomberg.

## U.S. Total Marketable Gas and Shale Gas



Source: FirstEnergy capital Corp., U.S. DOE/EIA.

## Marcellus/Utica Marketable Gas Supply

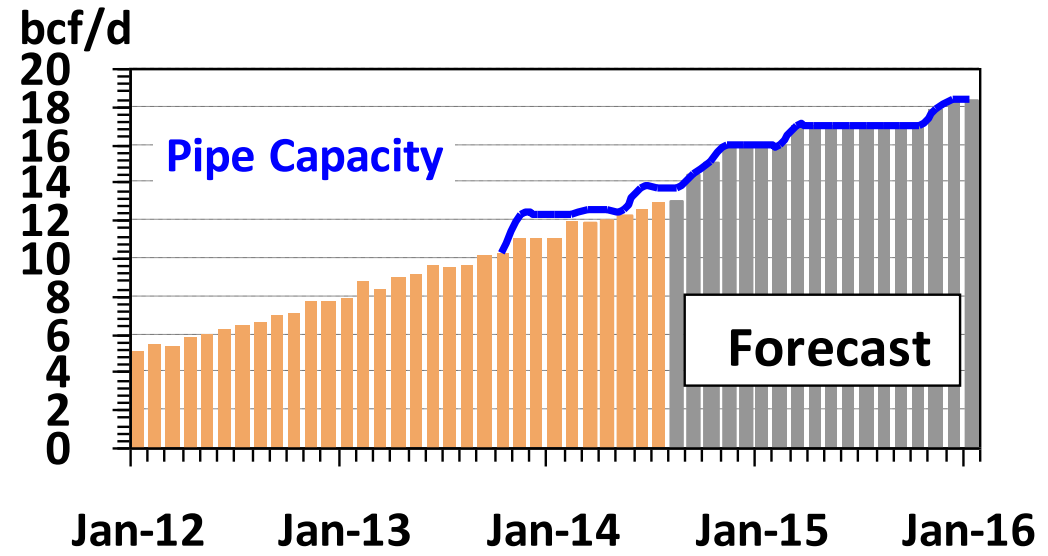


Source: FirstEnergy Capital Corp., U.S. DOE/EIA.

# IF NOT FOR PIPES, U.S. SUPPLY COULD EXPAND EVEN MORE

- Marcellus growth has been more liquids rich and focused toward NE Pennsylvania; is having trouble exiting due to pipeline constraints and expansion into NE markets has been slow; winter 2014/15 NE basis at US \$10+.
- Constraints not likely to ease until late 2016 and into 2017.
- Utica has been mostly dry gas and has fewer constraints from W. Penn. and Ohio to markets further West and South; its recent growth is what has driven U.S. supply well beyond most forecasts.

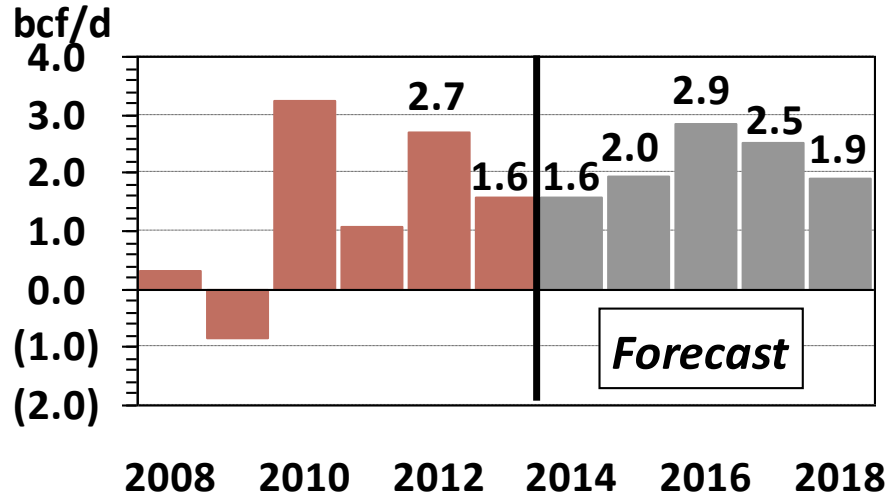
**Historical/Forecast Marcellus/Utica Supply**



Source: FirstEnergy Capital Corp., U.S. DOE/EIA.

# GAS IS BEING PRICED TO GROW DEMAND

## U.S. Natural Gas Demand Growth

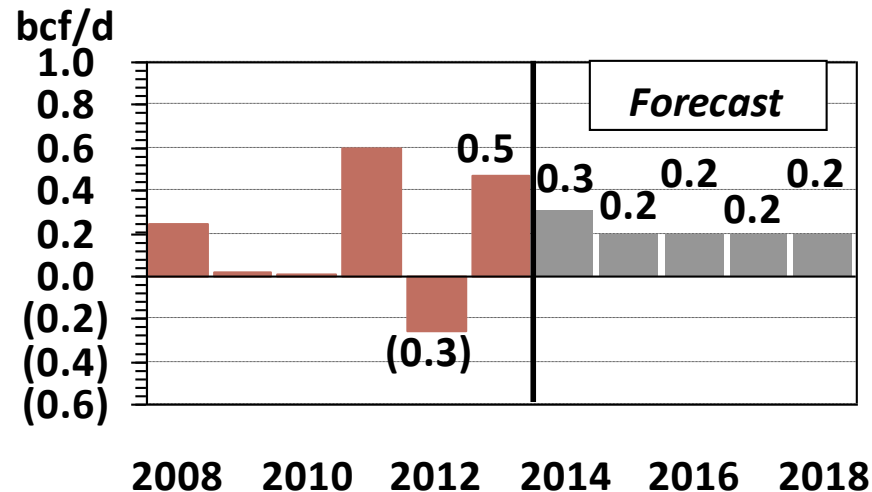


Source: FirstEnergy Capital Corp., US DOE/EIA.

- There is little structural demand growth for the Canadian market beyond oil sands and Alberta power market expansion.
- Mostly a weather driven market.

- U.S. demand has expanding options for gas use.
- Cheapest gas in the world is driving new markets in power, industrial, transport, and for export.

## Canadian Natural Gas Demand

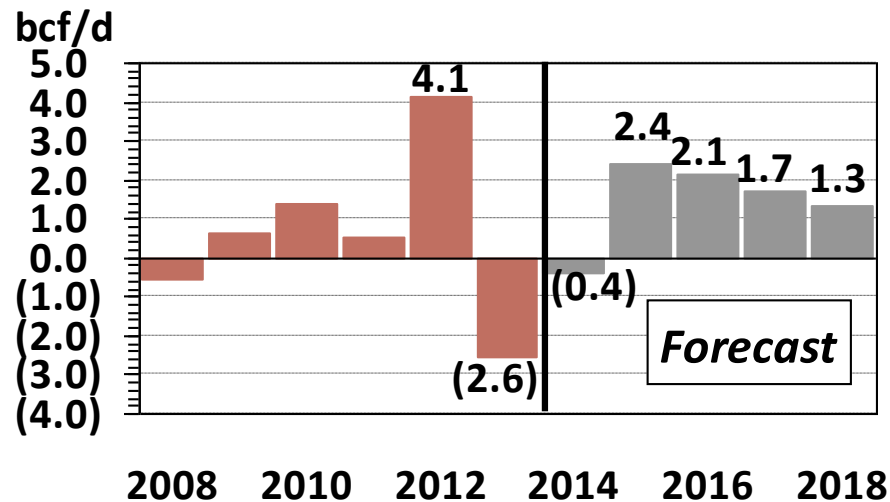


Source: FirstEnergy Capital Corp.

# U.S. NATURAL GAS DEMAND IN THE POWER SECTOR

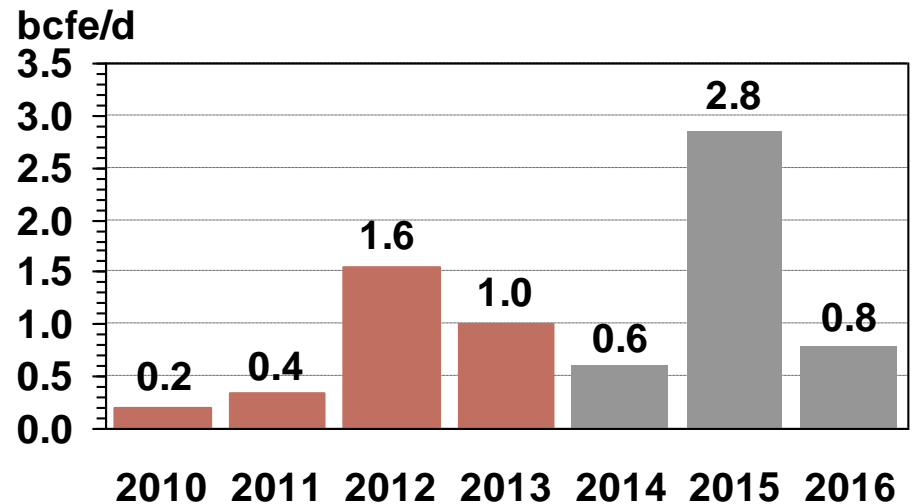
- We think U.S. gas demand for power will be expanding on coal retirements, new build generation, further economic expansion and future emission restrictions.
- Renewables and efficiency have taken a bite out of demand growth, but gas is still needed as a back up for the grid.
- Most coal retirements are lower utilization, so overall gas pick up will be less; coal stocks are at multi-year lows.
- Price incentive also plays a big role.

U.S. Power Gen. Gas Demand Growth



Source: FirstEnergy Capital Corp., US DOE/EIA.

U.S. Coal-Fired Generation Retirements

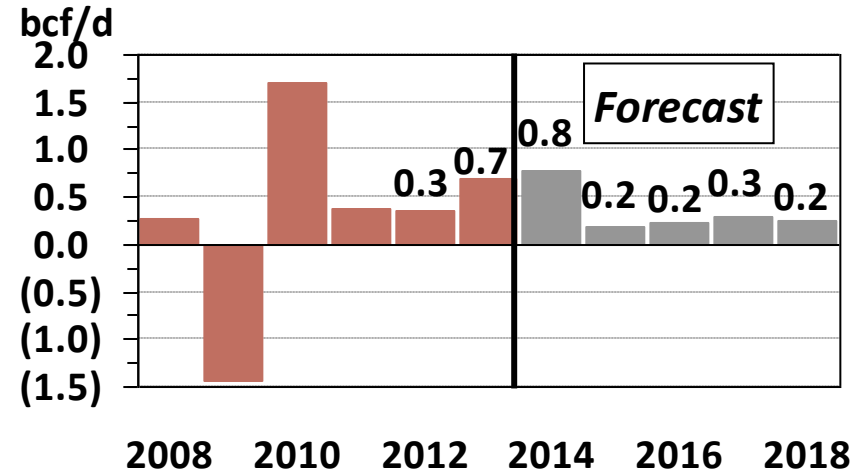


Source: FirstEnergy Capital Corp., U.S. DOE/EIA.

# U.S. INDUSTRIAL NATURAL GAS DEMAND

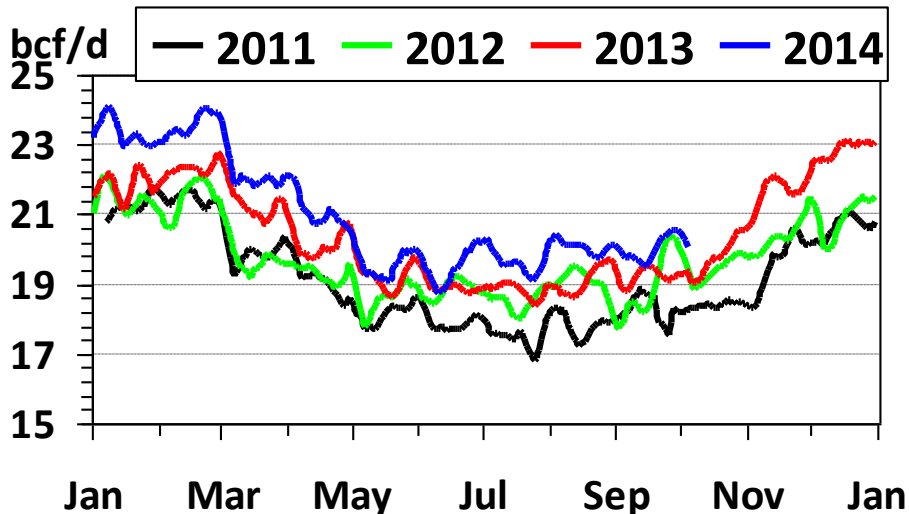
- We are conservative compared to some estimates for industrial demand growth.
- Next three years alone could see demand expand by more than 1.5 bcf/d by some estimates.

## U.S. Industrial Gas Demand Growth



Source: FirstEnergy Capital Corp., US DOE/EIA.

## U.S. Daily Industrial Gas Demand

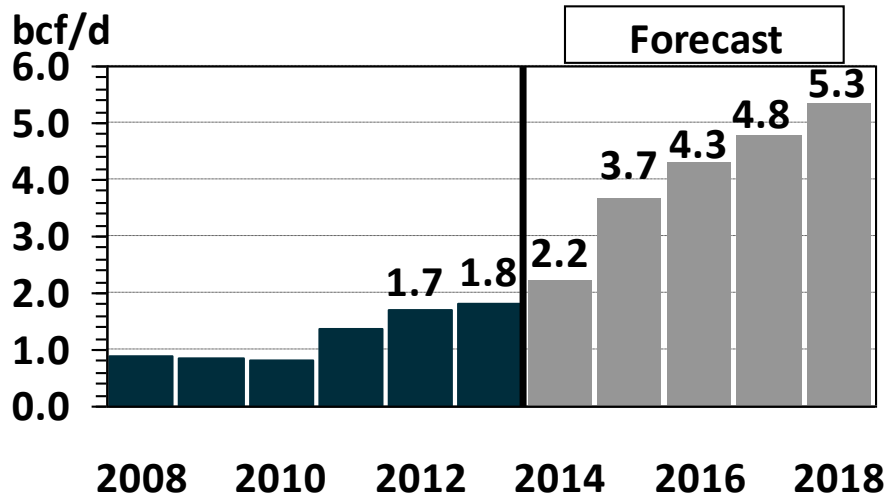


Source: FirstEnergy Capital Corp., Bloomberg.

- Real time data is pointing to steady growing expansion of demand that is not weather related.
- New plant expansions will be readily “visible” in the demand data.

# U.S. GAS EXPORTS TO MEXICO

## U.S. Net Gas Exports to Mexico

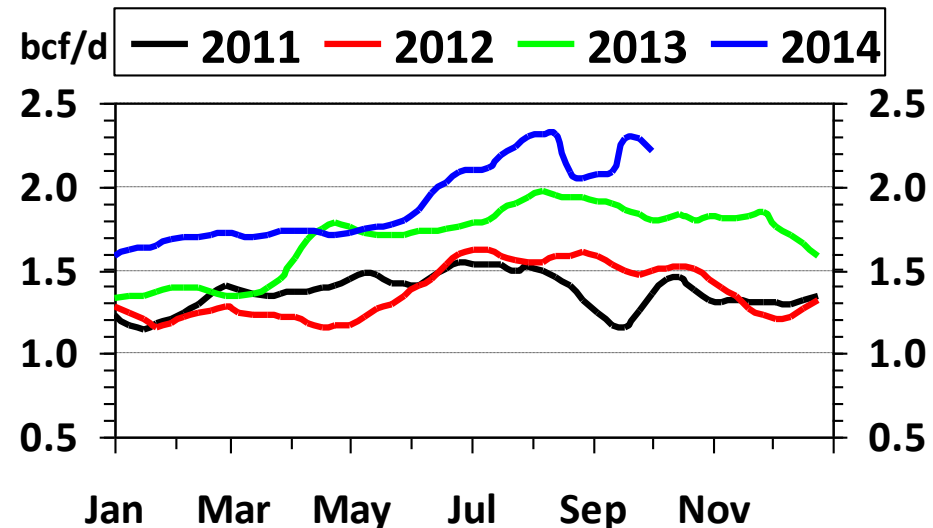


Source: FirstEnergy Capital Corp., U.S. DOE/EIA.

- Once new pipeline capacity is added at the end of the year, the upswing in Mexican exports should be readily apparent.
- Important in terms of draining away supply growth in Texas (i.e. Eagle Ford).

- New pipe export capacity totaling 1.5 bcf/d expected online by end of 2014.
- Some concerns as to whether Mexico can take all the gas immediately or not.

## U.S. Weekly Gas Exports to Mexico

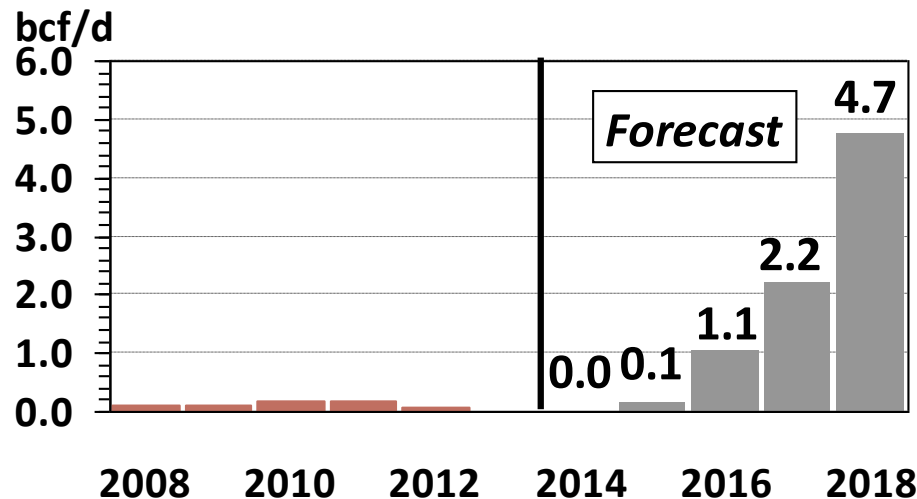


Source: FirstEnergy Capital Corp., Bloomberg.

# U.S. LNG EXPORTS

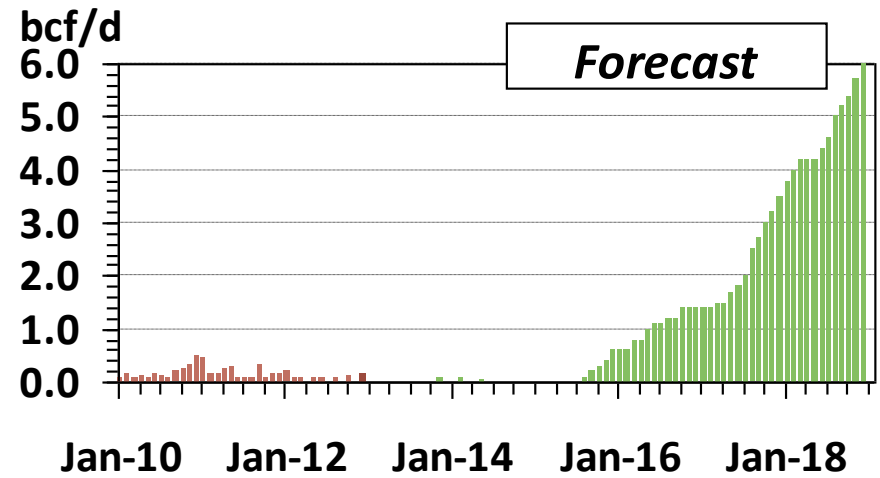
- U.S. is moving rapidly ahead with LNG export plans with still more room to expand.
- Looking at export capacity over 6 bcf/d by end-2018.
- Represents the single biggest challenge and opportunity for U.S. supply growth.
- Notionally appears to be soft export cap at around 10 bcf/d; another export impact assessment possible.
- Market still has appetite for more financing and innovative export pricing schemes.

U.S. Annual LNG Exports



Source: FirstEnergy Capital Corp., US DOE/EIA.

U.S. Monthly Gross LNG Exports



Source: FirstEnergy Capital Corp., U.S. DOE/EIA.



# U.S. LNG EXPORT PROJECTS

- U.S. west coast export terminals have real opportunity to pick up Canadian gas supplies if export deals are concluded.

## United States LNG Export Proposals

### Under Construction or Very Likely to Proceed to Construction

<u>Project</u>	<u>Owners</u>		<u>Capacity (mmcf/d)</u>	<u>Status</u>
Sabine Pass	Cheniere		2,200	Under Construction, finish late 2015 (T 1 & 2), mid-late 2017 (T 3 & 4).
Freeport LNG	Freeport LNG		2,800	DOE approved; pending FERC approval; financing well advanced; early 2018 completion.
Lake Charles	Energy Transfer		2,000	DOE approved; pending FERC approval; early 2018 completion.
Dominion Cove Point	Dominion		700	DOE approved; pending FERC approval; mid-2018 completion.
Cameron LNG	Sempra		1,700	DOE approved; FERC approved; late 2017 early 2018 completion.
Jordan Cove Energy	Jordan Cove Energy		1,200	DOE approved; pending FERC approval; early 2019 completion.
<b>Total</b>			<b>10,600</b>	

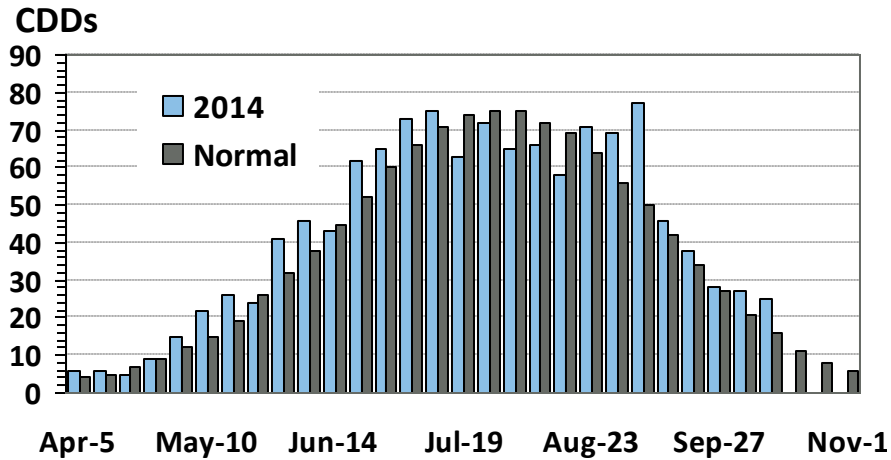
### Likely to Receive

#### Approval

Oregon LNG	Oregon LNG Partners	1,200	Pending DOE & FERC approval.
<b>Total</b>		<b>1,200</b>	
<b>Grand Total</b>		<b>11,800</b>	

# WEATHER IS STILL THE WILDCARD AND ALWAYS WILL BE

## U.S. 2014 Cooling Degree Days

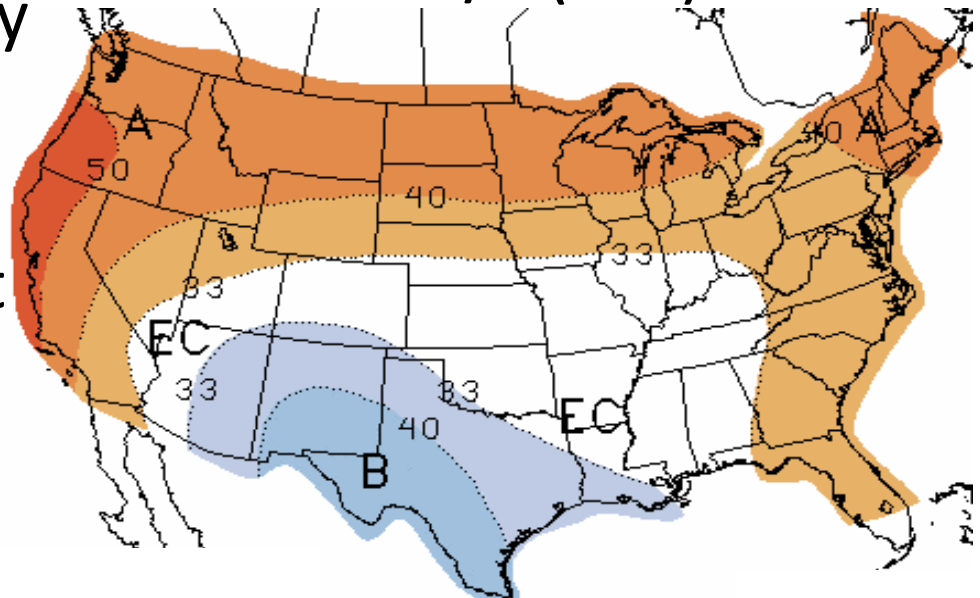


Source: FirstEnergy Capital Corp., U.S. NOAA.

- Weather will always produce some price volatility up or down.
- Recent U.S. summer was the coolest in more than a decade.

- This winter outlook is clearly bearish, but these seasonal outlooks have proven to be far off the mark for the past several years.
- El Nino or none?
- No one really knows.

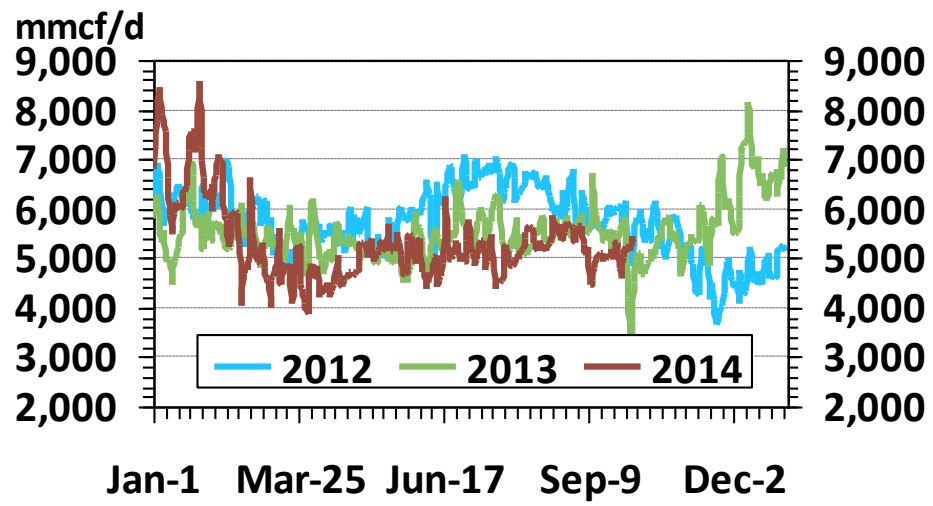
## U.S. Winter 2014/15 (N-D-J) Outlook



Source: U.S. NOAA. (Sep 18, 2014 update.)

# WHERE DOES THIS LEAVE CANADA IN THE GAS EQUATION?

## Canadian Net Gas Exports to the U.S.

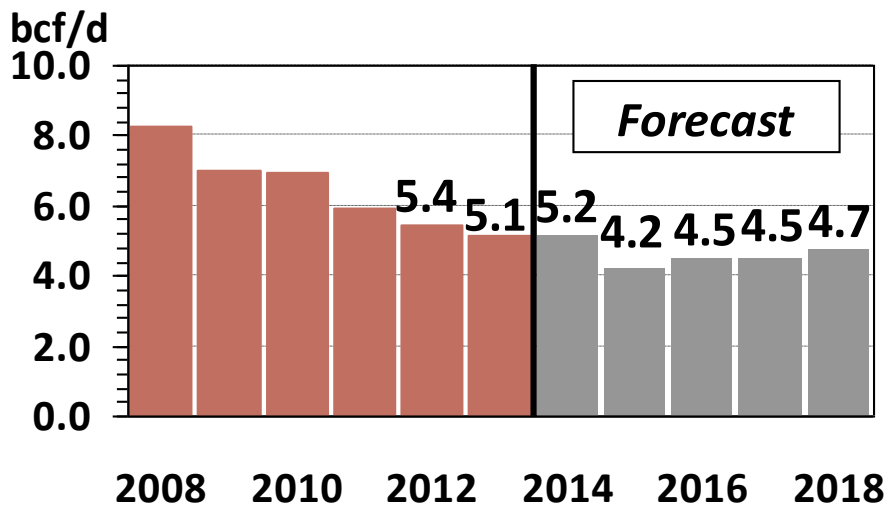


Source: FirstEnergy Capital Corp.

- Canadian exports this year were lifted at the start by cold winter; held in check by cool U.S. summer.
- Oddly, it has been Midwest that has provided most of the lift this year, offsetting weak East/West.

- Going forward, outlook is poor for Canadian exports.
- Likely to be backed out further from NE and MW, especially given Utica growth.
- Long term stability on growth in U.S. end use demand.

## U.S. Net Gas Imports from Canada

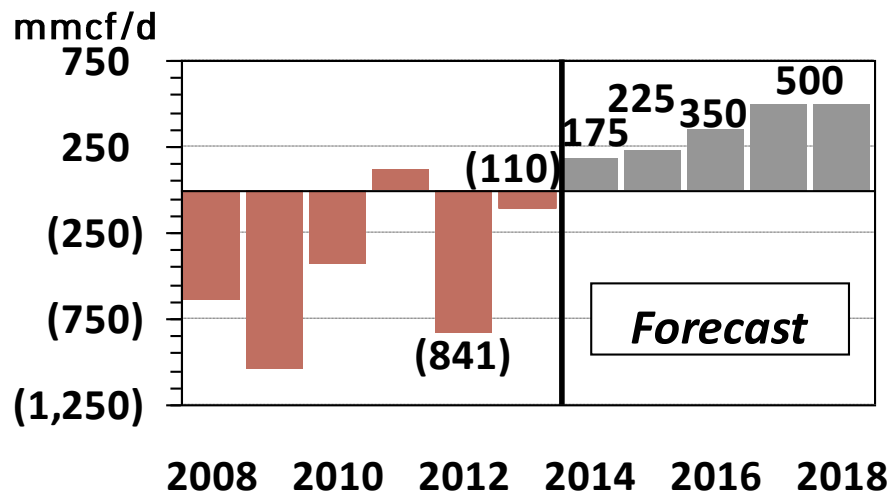


Source: FirstEnergy Capital Corp., U.S. DOE/EIA.

# CANADIAN NATURAL GAS SUPPLIES

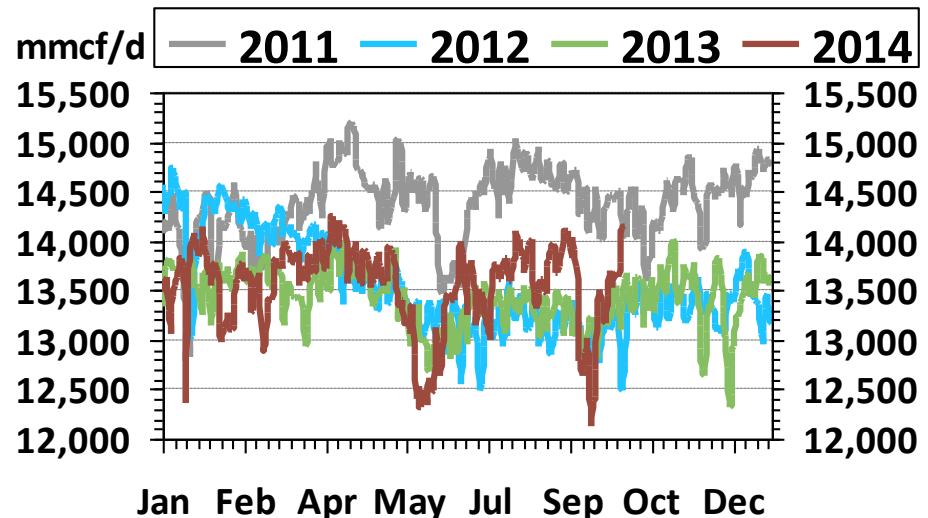
- Growing emphasis on low cost shale growth is turning around years of supply decline at a time when the U.S. is needing less Canadian gas.
- Some supply growth can be absorbed domestically.
- Strong drilling activity of past year also appears to be partly related to proving up of reserves for potential LNG export plants on B.C. west coast.

### WCSB Natural Gas Supply Growth



Source: FirstEnergy Capital Corp., company pipeline postings.

### WCSB Daily Natural Gas Supply



Source: FirstEnergy Capital Corp.

## MORE OUTLETS NEEDED FOR CANADIAN GAS

- It has been clear for a year or more that Canadian natural gas is facing a crisis with respect to its long term trading partner (i.e. United States).
- U.S. future supply growth could potentially back Canada out of the Midwest and Northeast completely within 3 to 4 years impacting 2.5 bcf/d of exports (net); more U.S. supplies will be entering Ontario and Quebec markets driven by Marcellus/Utica.
- Structural demand growth in Canada is very limited and focused mostly in Alberta (power and oil sands).
- If Canadian supplies are to grow again, another outlet for exports in the form of LNG will be needed in Canada, the U.S. or both.
- Recent strong statements from Petronas suggest that the most viable Canadian LNG export project is under threat of not proceeding (Pacific NW project).

# CANADIAN LNG EXPORT PROPOSALS

- There is no shortage of proposals, just a shortage of real advancement.

<b>Table 2: Canada LNG Export Proposals</b>					
<b>Project</b>	<b>Partners</b>	<b>Location</b>	<b>Capacity<sup>1</sup> mmcf/d</b>	<b>Approval to Export?</b>	<b>Potential On Stream</b>
<b>Kitimat LNG</b>	<b>Apache, Chevron Canada</b>	<b>Kitimat</b>	<b>1,300</b>	<b>Yes (20 YR)</b>	<b>mid-2020</b>
<b>Pacific Northwest LNG</b>	<b>PETRONAS, Progress Energy, SINOPEC, JAPEX, Petroleum Brunei, Indian Oil Corp.</b>	<b>Prince Rupert</b>	<b>2,600</b>	<b>Yes (25 YR)</b>	<b>mid-2019</b>
LNG Canada	Shell Canada, KOGAS, Mitsubishi, PetroChina	Kitimat	3,200	Yes (25 YR)	
Prince Rupert LNG	BG Group	Prince Rupert	2,800	Yes (25 YR)	
West Coast Canada LNG Ltd.	Imperial Oil, ExxonMobil	N/A	3,900	Yes (25 YR)	
Aurora LNG	Nexen (CNOOC), INPEX, JGC	Prince Rupert	3,200	Yes (25 YR)	
Kitsault Energy Project	Kitsault Energy	Kitsault	2,600	Under Review	
Douglas Channel Energy Project	Gas Suppliers, LNG Buyers	Kitimat	200	Yes (20 YR)	
Woodfibre LNG Project	Woodfibre Natural Gas Limited	Squamish	300	Yes (25 YR)	
Triton LNG Limited Partnership	AltaGas, Idemitsu	N/A	300	Yes (25 YR)	
Stewart Energy LNG	Canada Stewart Energy Group	Stewart	4,041	Under Review	
Discovery LNG	Quicksilver Resources Canada	Campbell River	?	N/A	
Woodside LNG	Woodside Petroleum	Prince Rupert	?	N/A	
Steelhead LNG	Steelhead LNG	N/A	?	N/A	
Goldboro LNG	Pieridae Energy	Nova Scotia	1,300	Under Review	
Jordan Cove LNG <sup>2</sup>	Veresen Inc.	Oregon	1,200	Yes (25 YR)	
Oregon LNG <sup>2</sup>	Oregon LNG Marketing Co., LLC	Oregon	1,296	Yes (25 YR)	

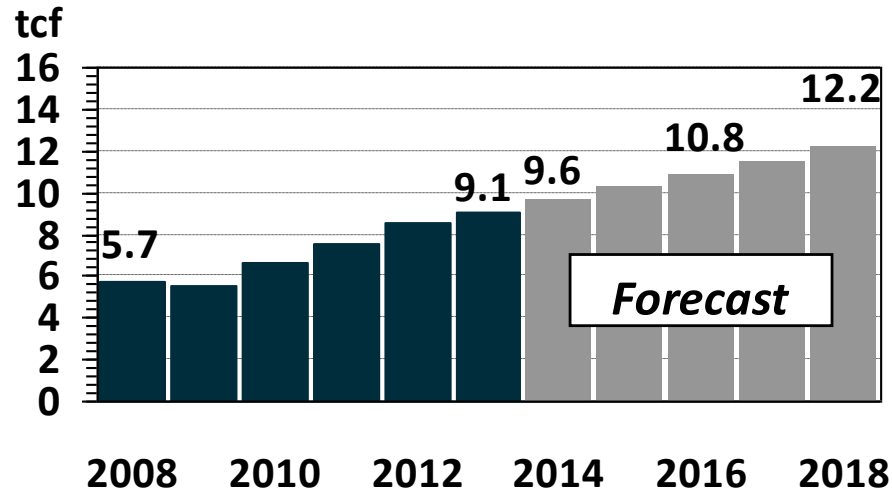
<sup>1</sup> Capacity based on NEB Applications

<sup>2</sup> While Terminal is Located in the U.S., Gas for LNG export will be imported from Canada

Source: National Energy Board, Company Reports, FirstEnergy Capital Corp.

# GLOBAL LNG PROFILE

## Asian LNG Imports

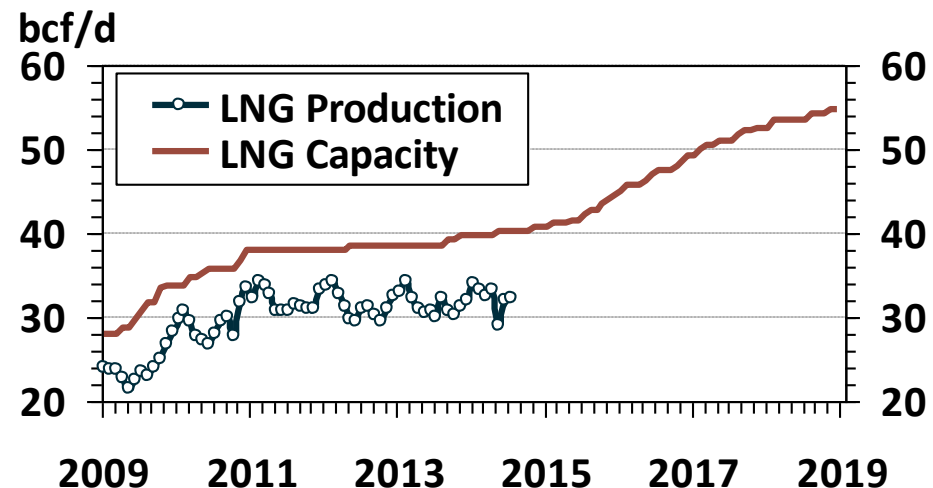


Source: FirstEnergy Capital Corp, Waterborne Energy Inc.

- There is no shortage of LNG demand growth opportunity in Asia, especially China.
- Recent China-Russia deal is small compared to upside of more than 40 bcf/d in China alone by 2030.

- Supply growth is being powered by Australia and U.S. to end of the decade.
- There is definitely room for Canada to join this party.
- This growth might actually be insufficient to meet demand into 2020 and beyond.

## Global LNG Supply and Capacity

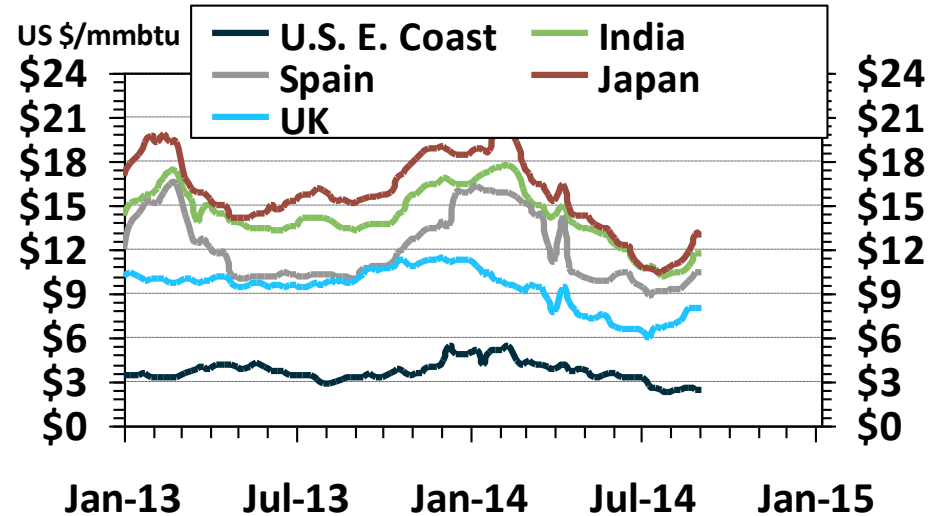


Source: FirstEnergy Capital Corp., Waterborne Energy Inc.

# GLOBAL LNG PRICING

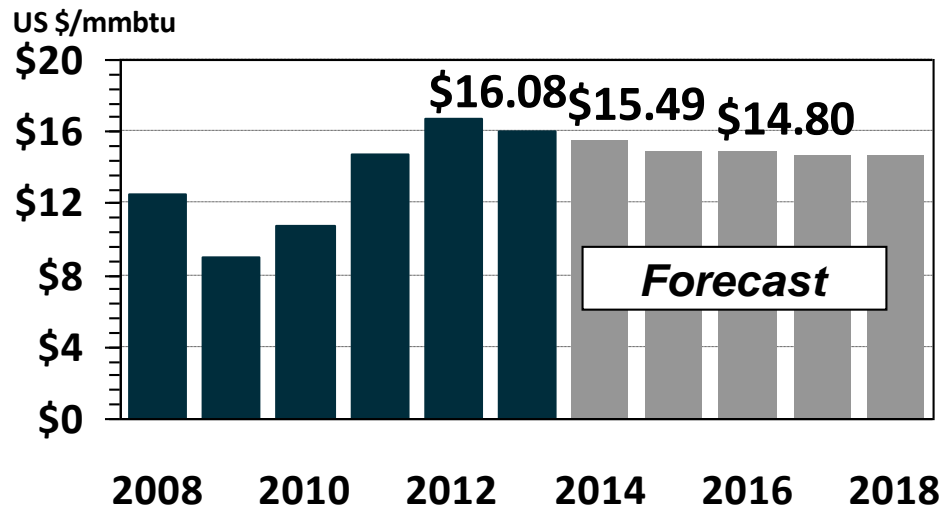
- Recent prices are starting to improve seasonally after weak summer demand and excess of shipping volume.
- Asian buyers looking for more options beyond oil-index linked price deals.

### Global LNG Netbacks



Source: FirstEnergy Capital Corp., Waterborne Energy Inc.

### Asia Landed LNG Prices



Source: FirstEnergy Capital Corp., Bloomberg.

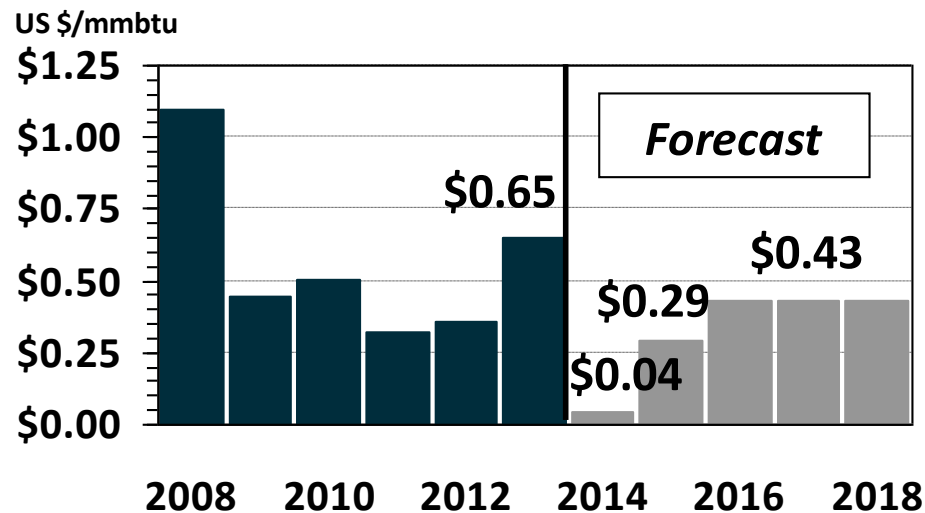
- Pressure is growing to delink LNG prices from oil prices.
- If momentum grows once U.S. supplies hit the market, Asian price downside could be up to 20% versus forecast.



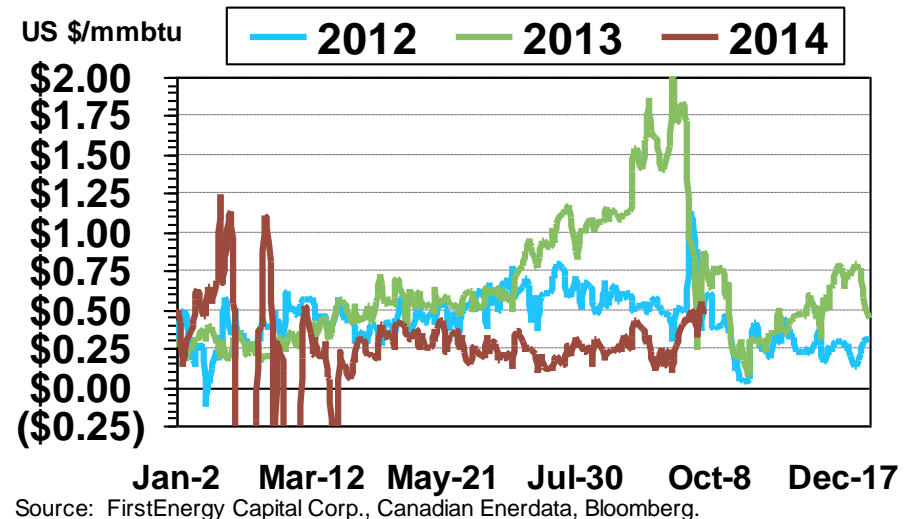
# SHORT TERM AECO CONSIDERATIONS

- One bright spot for Canadian gas prices this year has been a very tight basis (and a declining Canadian dollar).
- Cold winter drained western gas storage to lowest levels in 9 years; steady storage refill demand from Eastern Canada and U.S. Midwest has kept a strong bid under AECO.
- We think basis will widen in 2015, but low storage in the west will be a price positive.

### AECO-Henry Hub Basis



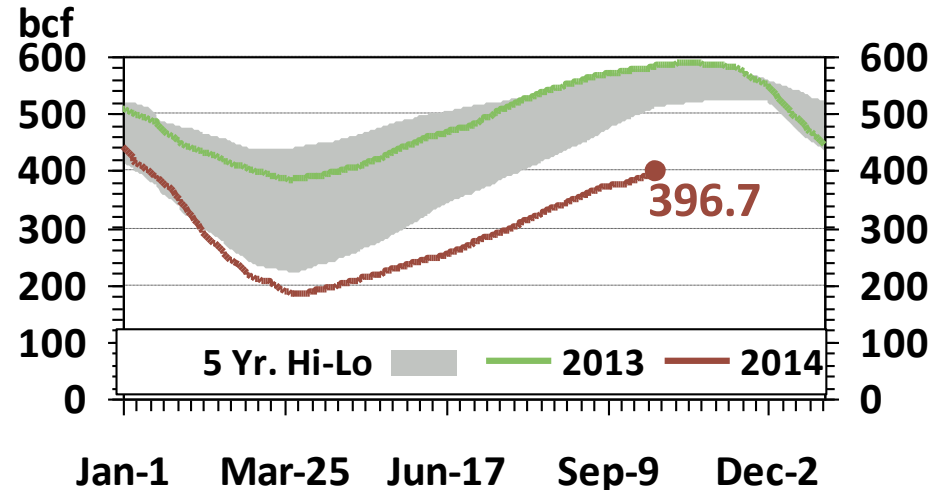
### AECO-Nymex Price Spread



# CANADIAN NATURAL GAS STORAGE

- We see western storage struggling to reach 435 bcf by end October.
- Storage levels to remain at multi-year lows well into 2015.
- More normal refill in 2016.

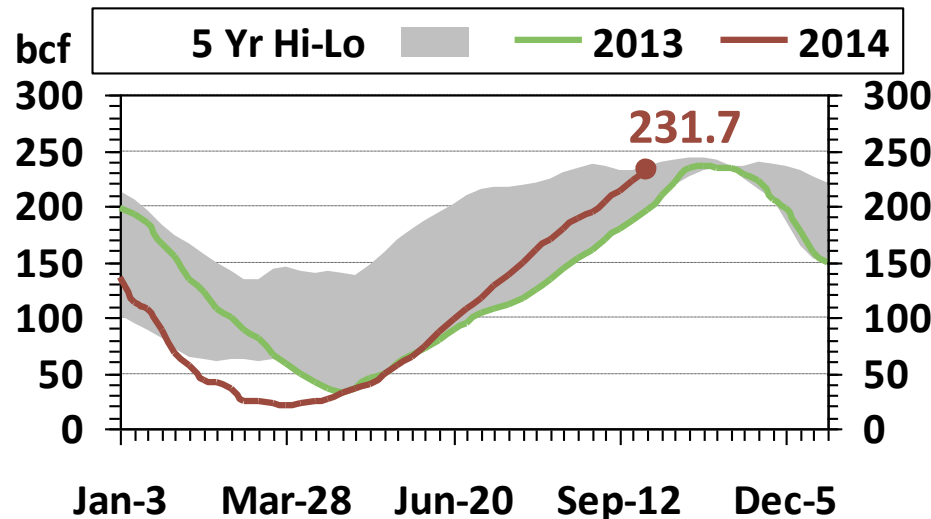
## Canada West Natural Gas Storage



Source: FirstEnergy Capital Corp.

- No surprise in that the utility mandate has driven eastern storage back to normal levels.
- Cool summer and strong bid for western supplies helped the refill.
- U.S. supply growth looking to take some of this action.

## Canada East Natural Gas Storage

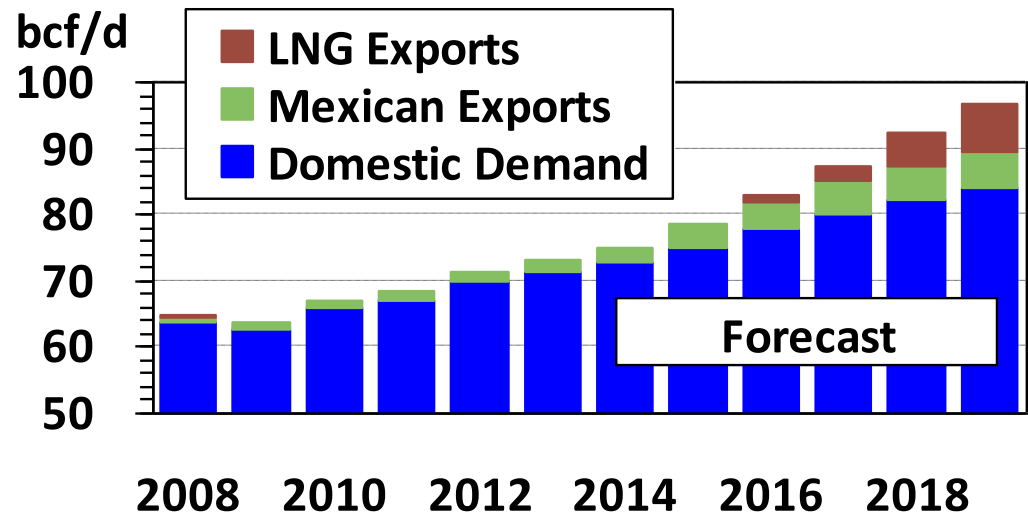


Source: FirstEnergy Capital Corp., Canadian Enerdata Ltd.

# NATURAL GAS MARKET CONCLUSIONS

- Impressive U.S. supply growth has put the kibosh on being price bullish for this year and 2015 at a minimum, helped along by a cool U.S. summer.
- Market has shifted focus away from storage and toward accepting strong supply growth for several more years; emphasis now on incentivizing demand growth where possible.
- Price risks more to the downside than upside; warm winter weather could turn so-so year for prices into another rout.
- Long term picture is still positive given enormity of U.S. needs.

Internal/External Demand for U.S. Gas



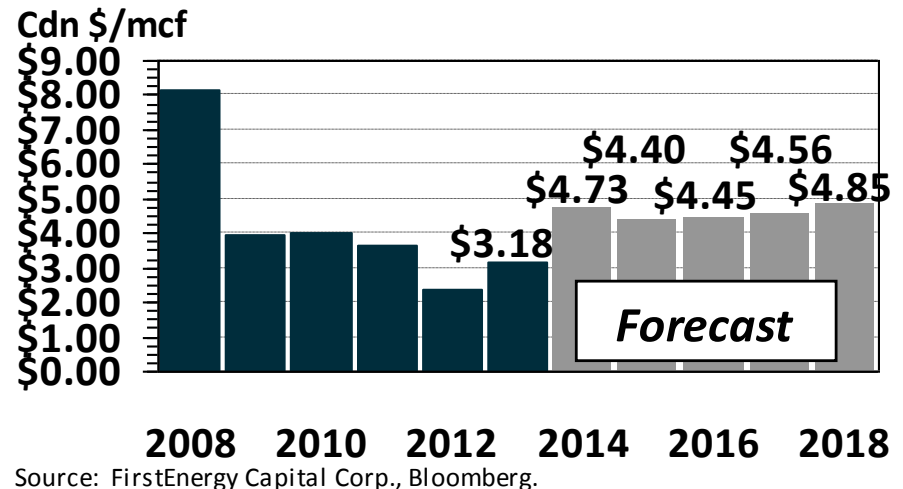
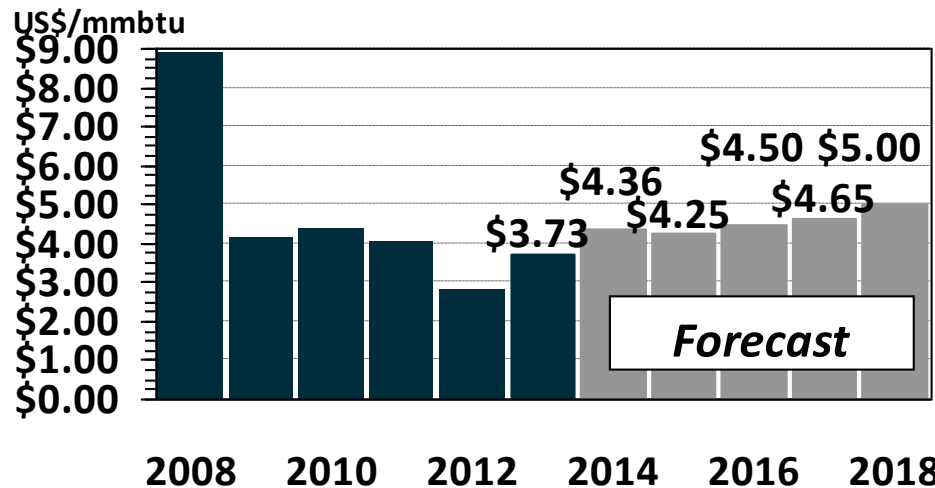
Source: FirstEnergy Capital Corp., U.S. DOE/EIA.

# FIRSTENERGY NATURAL GAS PRICE FORECASTS

- We downgraded our gas price forecast in July just one month after our bullish update of June.
- We are roughly middle of the pack compared to the rest of the Street.
- We think US \$4.00 to US \$4.50 per mmbtu captures a fair balance between supply growth and what will be steadily improving U.S. demand and export upside.
- Canada's role more uncertain, especially if LNG export plans are deferred indefinitely.

Nymex Natural Gas

AECO Natural Gas



## FirstEnergy Natural Gas Price Outlook

		Nymex US\$		Aeco Cdn\$	
	\$/mmbtu	<u>Old</u>	<u>NEW</u>	<u>Old</u>	<u>NEW</u>
<u>2013</u>	Average	\$3.73	\$3.73	\$3.18	\$3.18
<u>2014</u>	Q1	\$4.72	\$4.72	\$5.73	\$5.73
	Q2	\$4.58	\$4.58	\$4.70	\$4.70
	Q3 est.	\$3.85	\$3.94	\$3.96	\$4.06
	Q4 est.	<u>\$4.07</u>	<u>\$4.18</u>	<u>\$4.14</u>	<u>\$4.33</u>
	<b>Average est.</b>	<b>\$4.30</b>	<b>\$4.36</b>	<b>\$4.63</b>	<b>\$4.71</b>
<u>2015</u>	Q1 est.	\$4.25	\$4.25	\$4.32	\$4.38
	Q2 est.	\$4.00	\$4.00	\$4.11	\$4.16
	Q3 est.	\$4.25	\$4.25	\$4.39	\$4.45
	Q4 est.	<u>\$4.50</u>	<u>\$4.50</u>	<u>\$4.54</u>	<u>\$4.60</u>
	<b>Average est.</b>	<b>\$4.25</b>	<b>\$4.25</b>	<b>\$4.34</b>	<b>\$4.40</b>
<u>2016</u>	Average est.	\$4.50	\$4.50	\$4.42	\$4.45
<u>2017</u>	Average est.	\$4.65	\$4.65	\$4.50	\$4.56

Notes: All historical averages computed using weekday data only.

Source: FirstEnergy Capital Corp., Bloomberg, Enerdata; est. refers to forecasted value.

**Questions??**

