

Market Outlook

2018 North America Perforating Symposium
Galveston, TX

July, 31 2018

Richard Spears & David Otte
Spears & Associates

Otte & Spears are biased



Agenda

Overview

NAM O&G/Perforating Markets

Back to the Future?

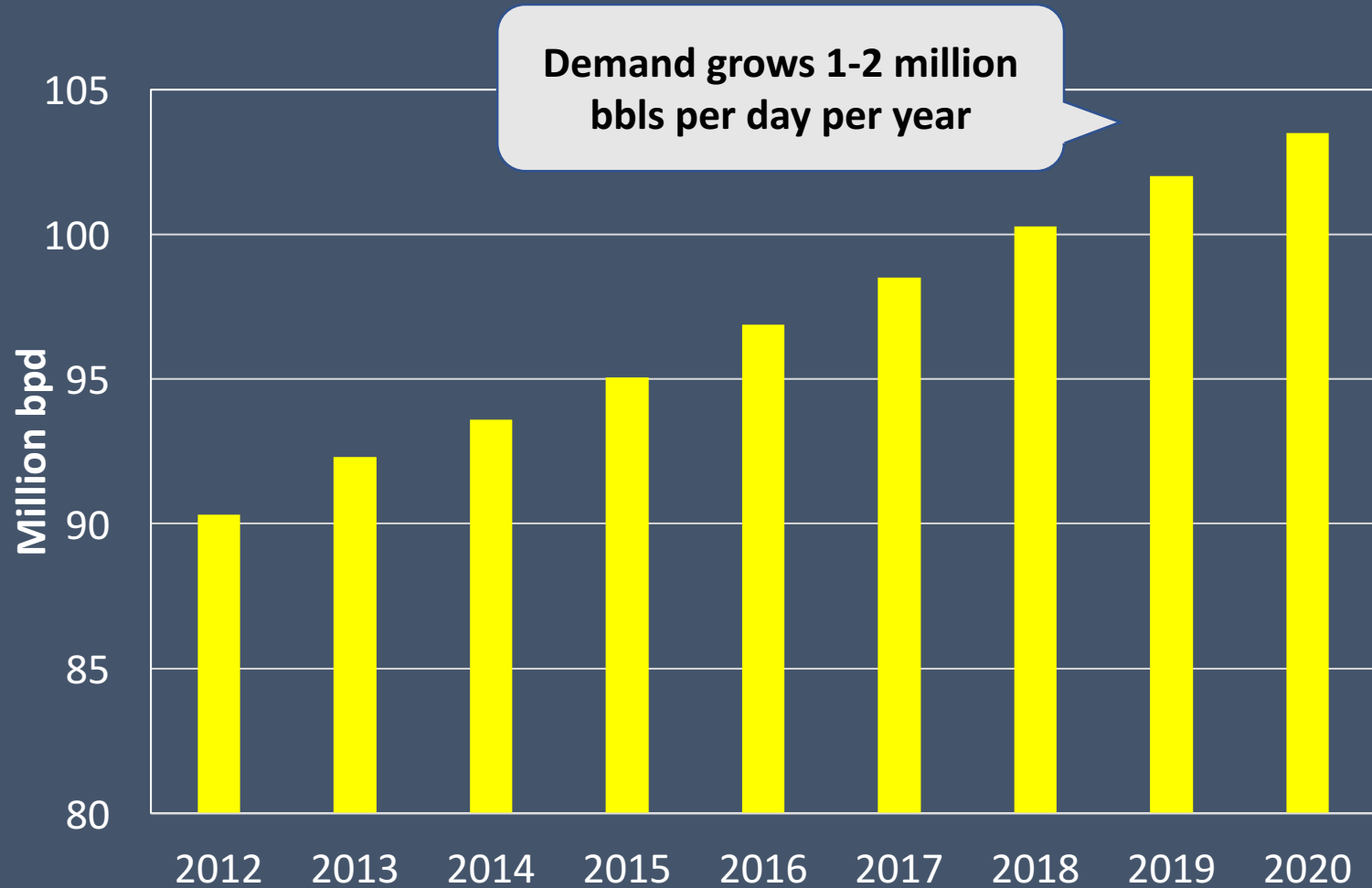
The world WANTS solar



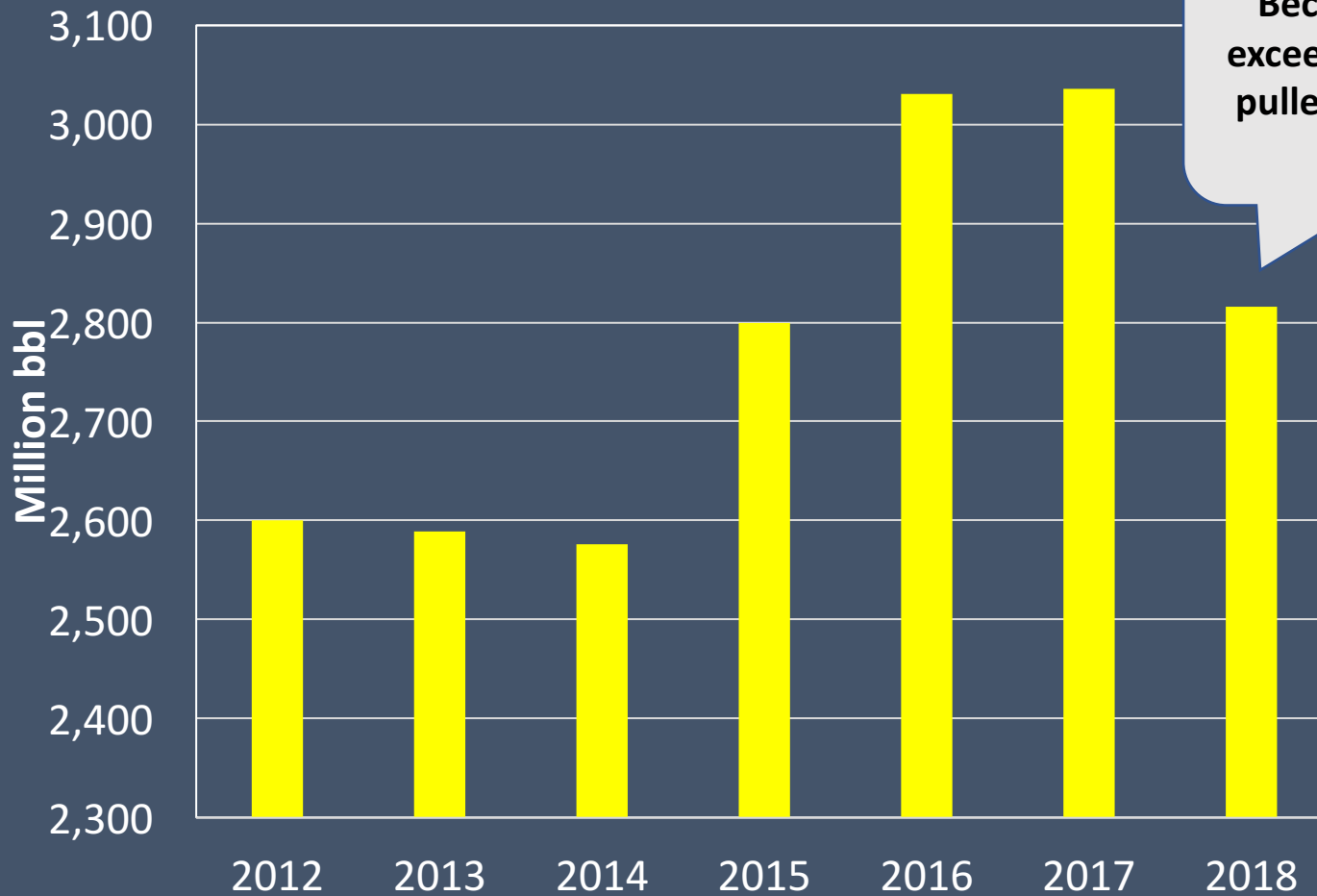
But it NEEDS oil



Global Oil Demand

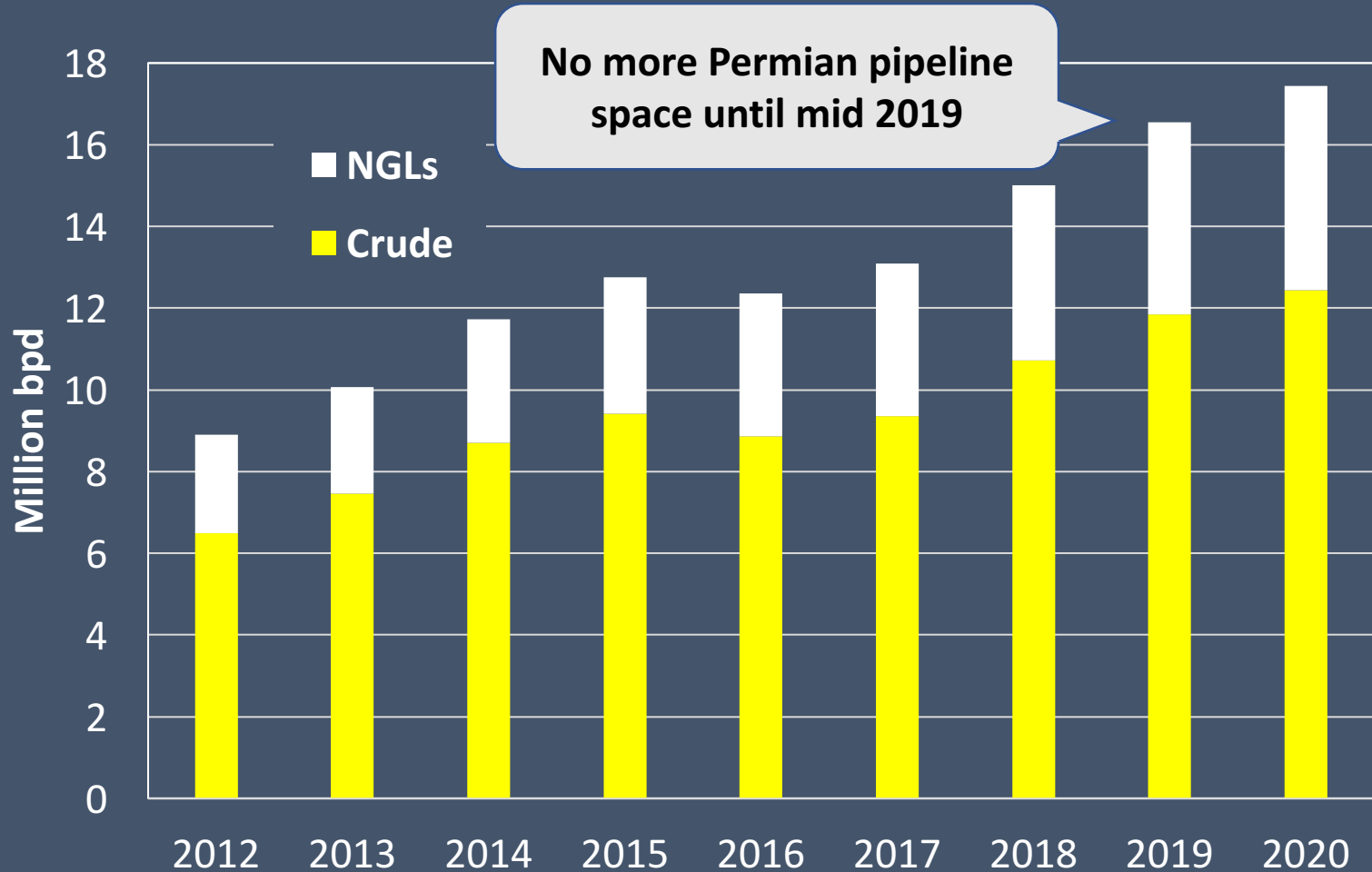


OECD Oil Inventories

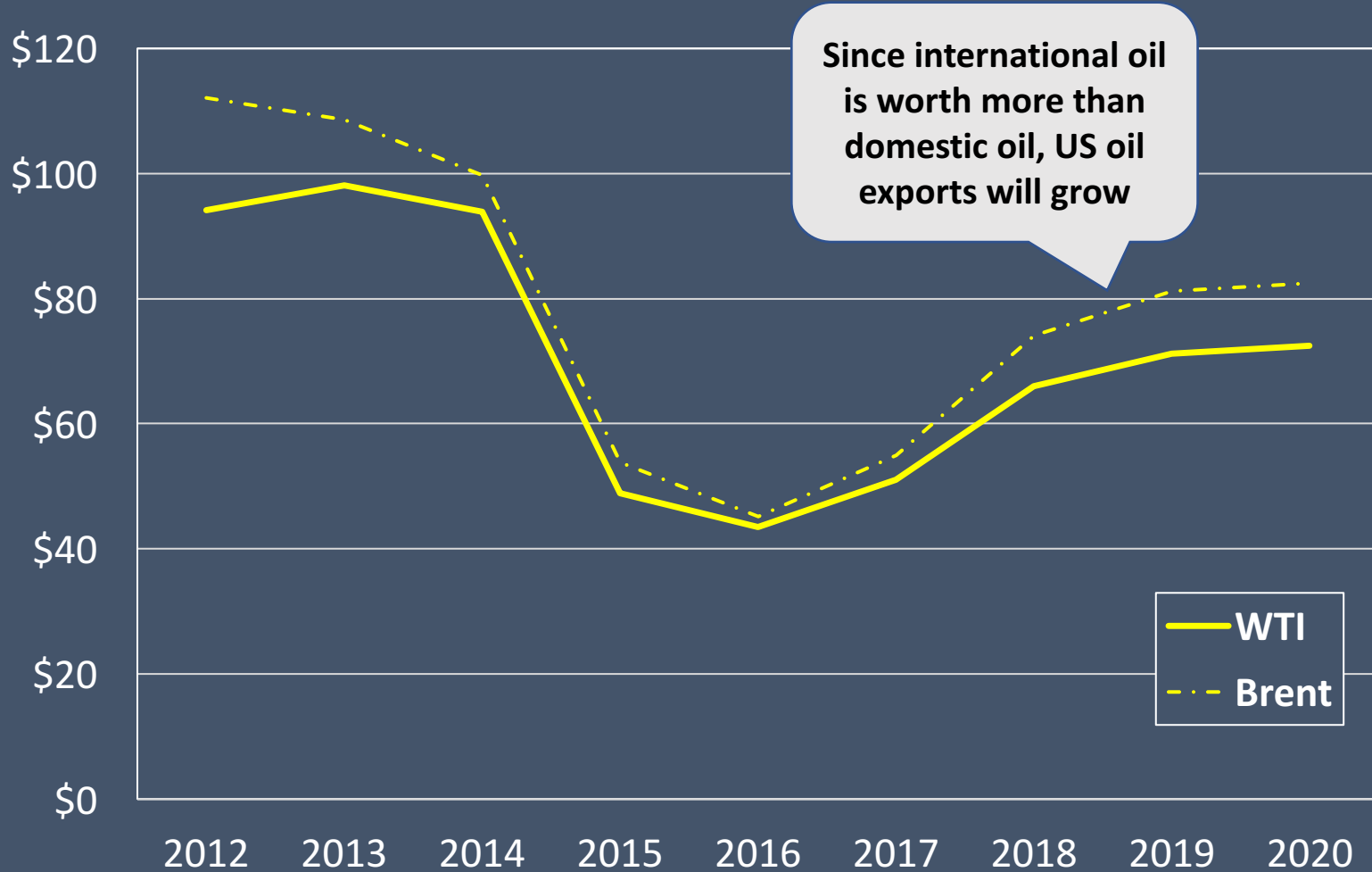


Because demand exceeds supply, oil is pulled from storage tanks

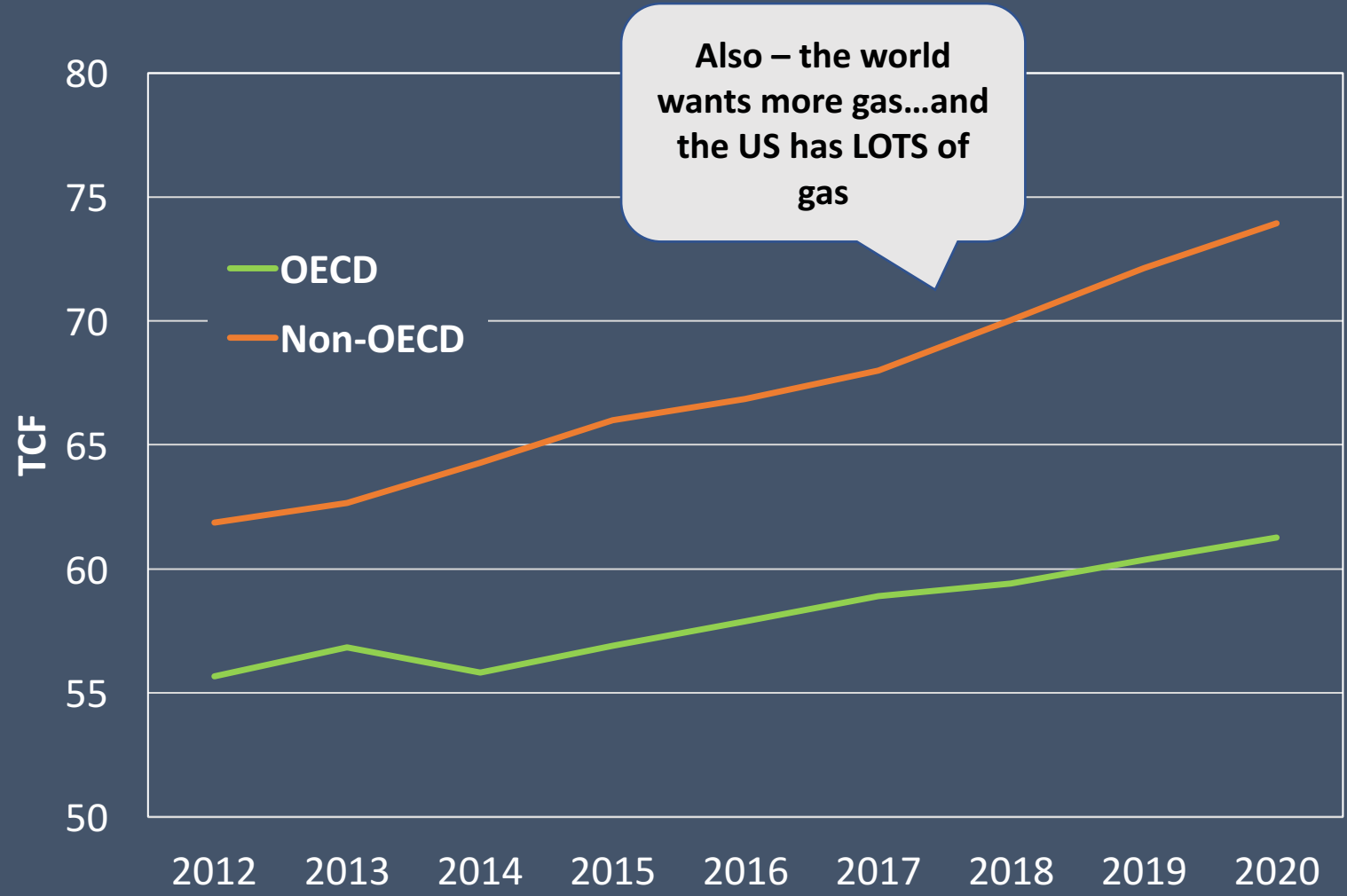
US Oil Production



Oil Prices

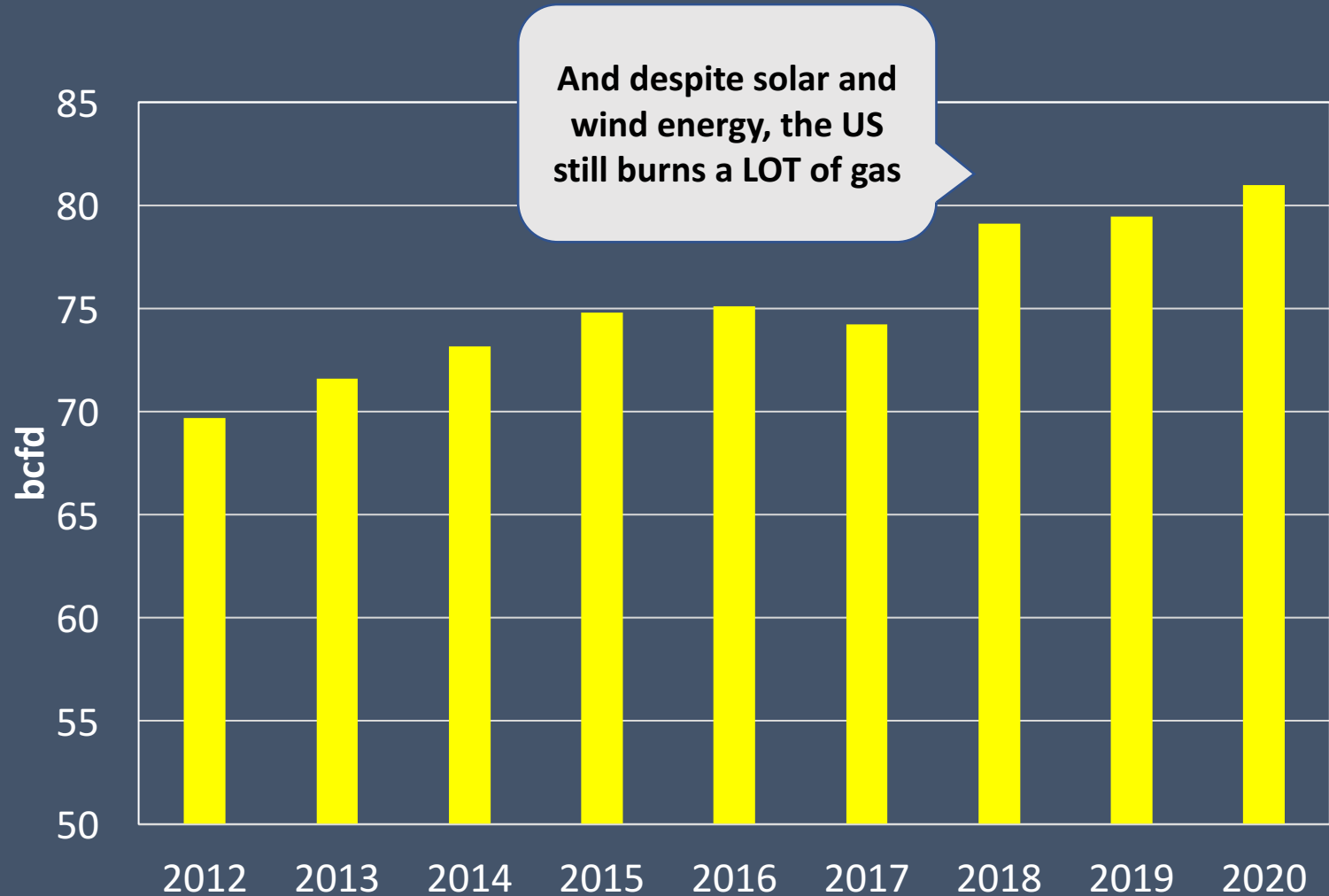


Global Gas Demand

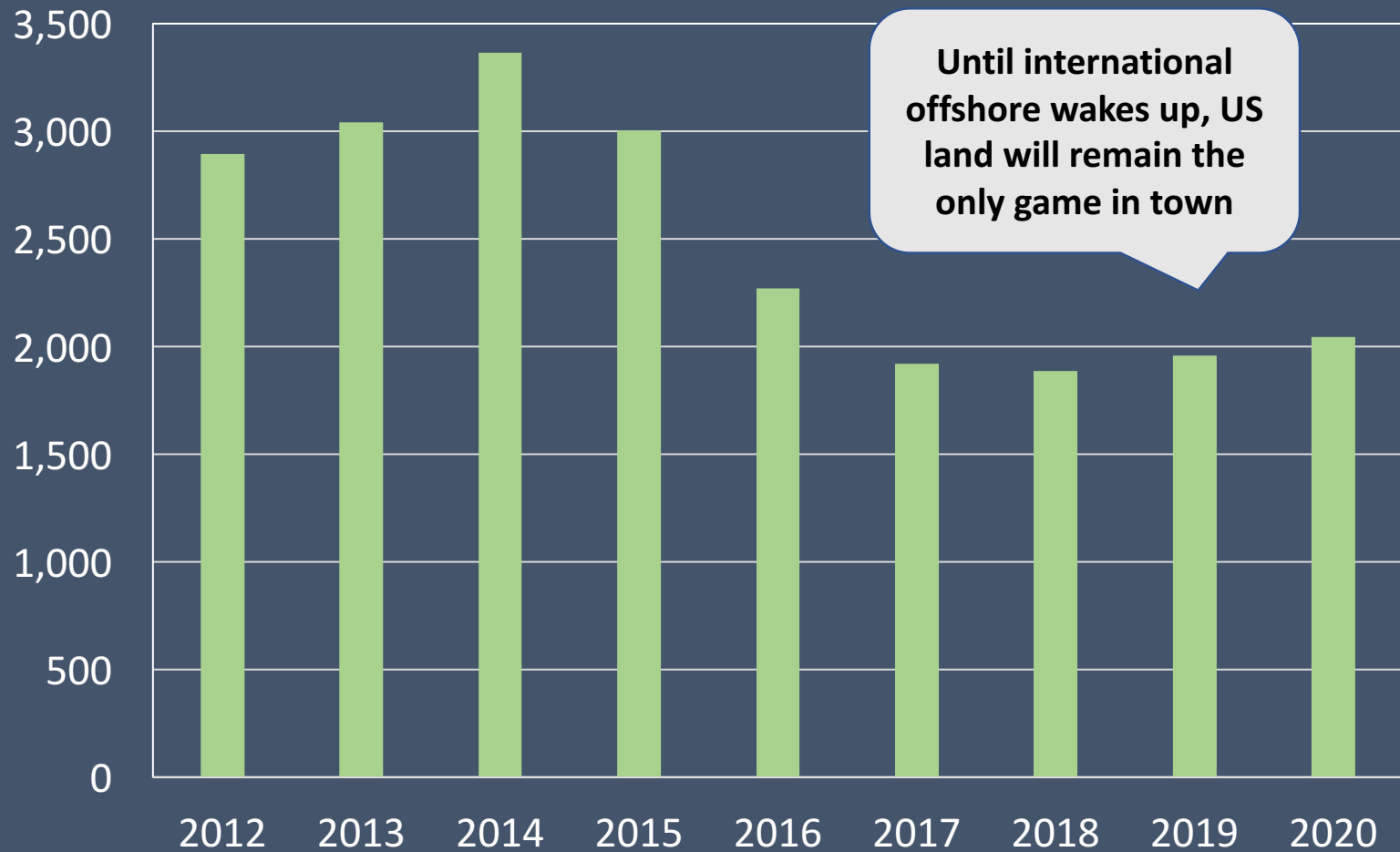


Also – the world wants more gas...and the US has LOTS of gas

US Gas Demand



Offshore Wells Drilled



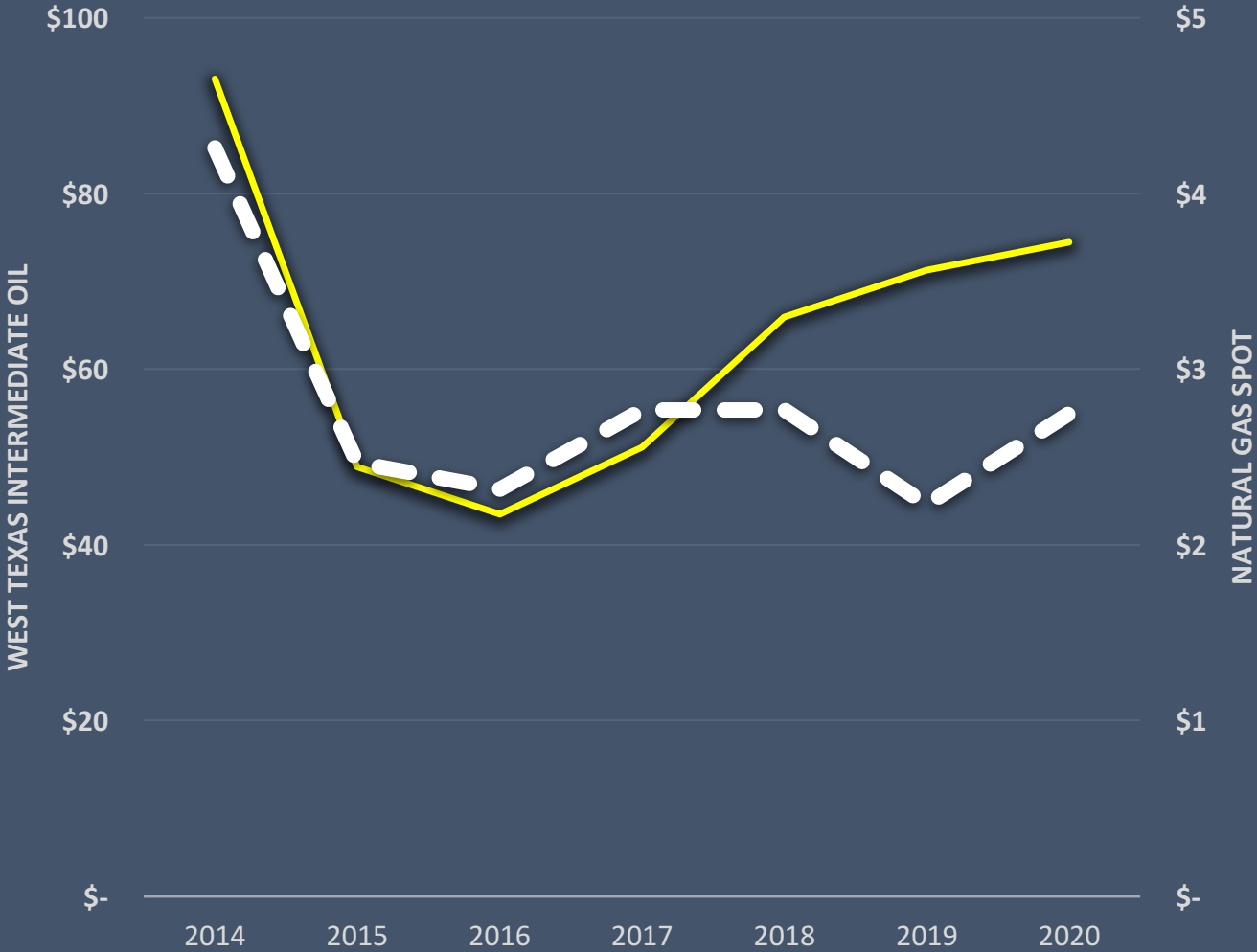
Here's how boards think:

- Capex discipline assuming \$60 oil
- Worries about “peak demand” and climate change
- No major technological leaps coming
- Offshore exploration takes 8-10 years for first oil
- Technology-based efficiency gains
- Therefore, focus is on **SHORT TERM**

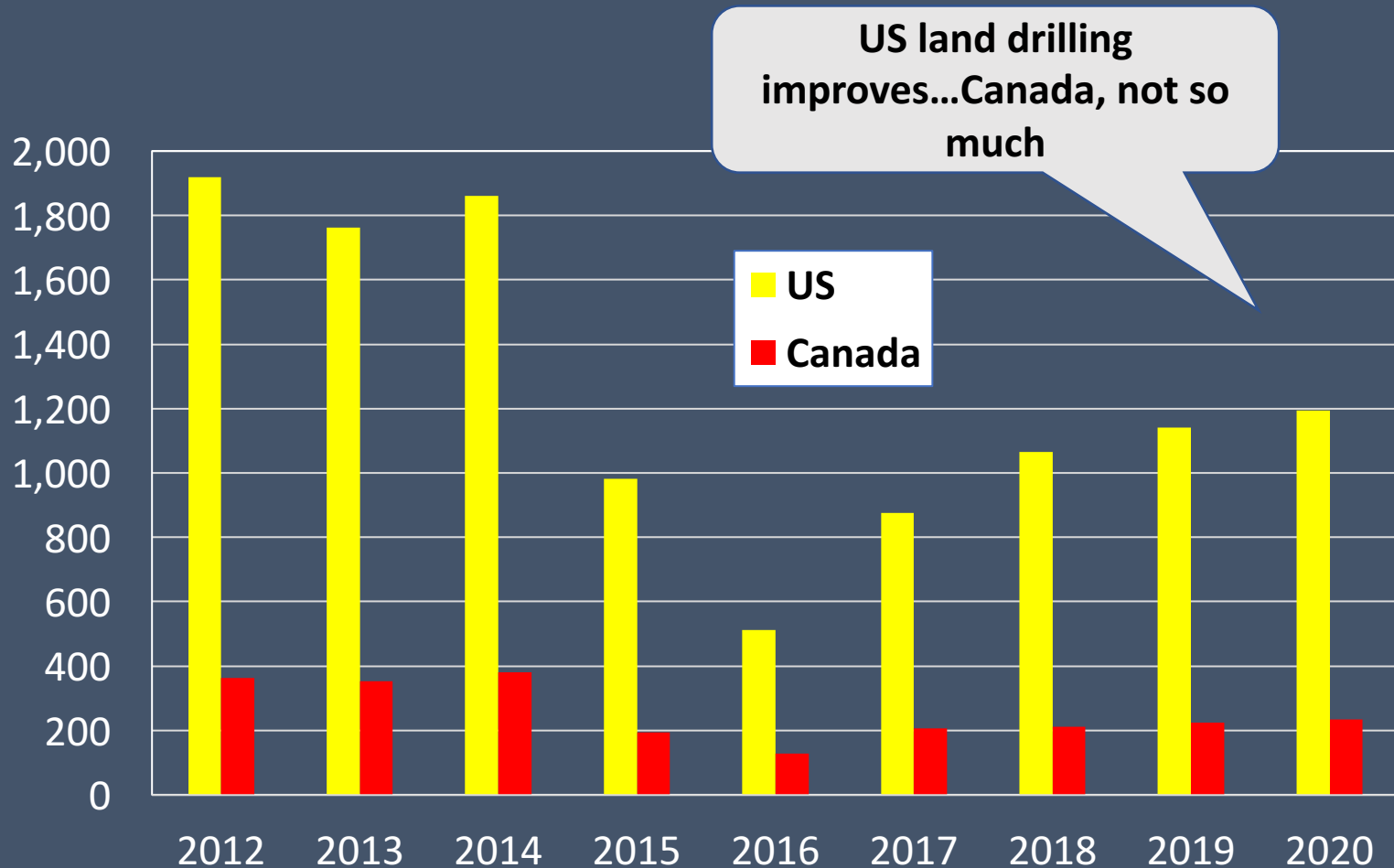
NAM O&G/Perforating

- **2018 provides ~965 thousand Hydraulic Fracturing Stages in NAM from the ~24,000 horizontal wells drilled.** Each stage represents a “perforating opportunity” in a plug-n-perf completion.
- **The US land wireline market is *\$3.8 billion in 2018*** which is more than 6x the GOM market of \$.5 billion. There are ~ 500 pump-down wireline units in NAM

Commodity Prices

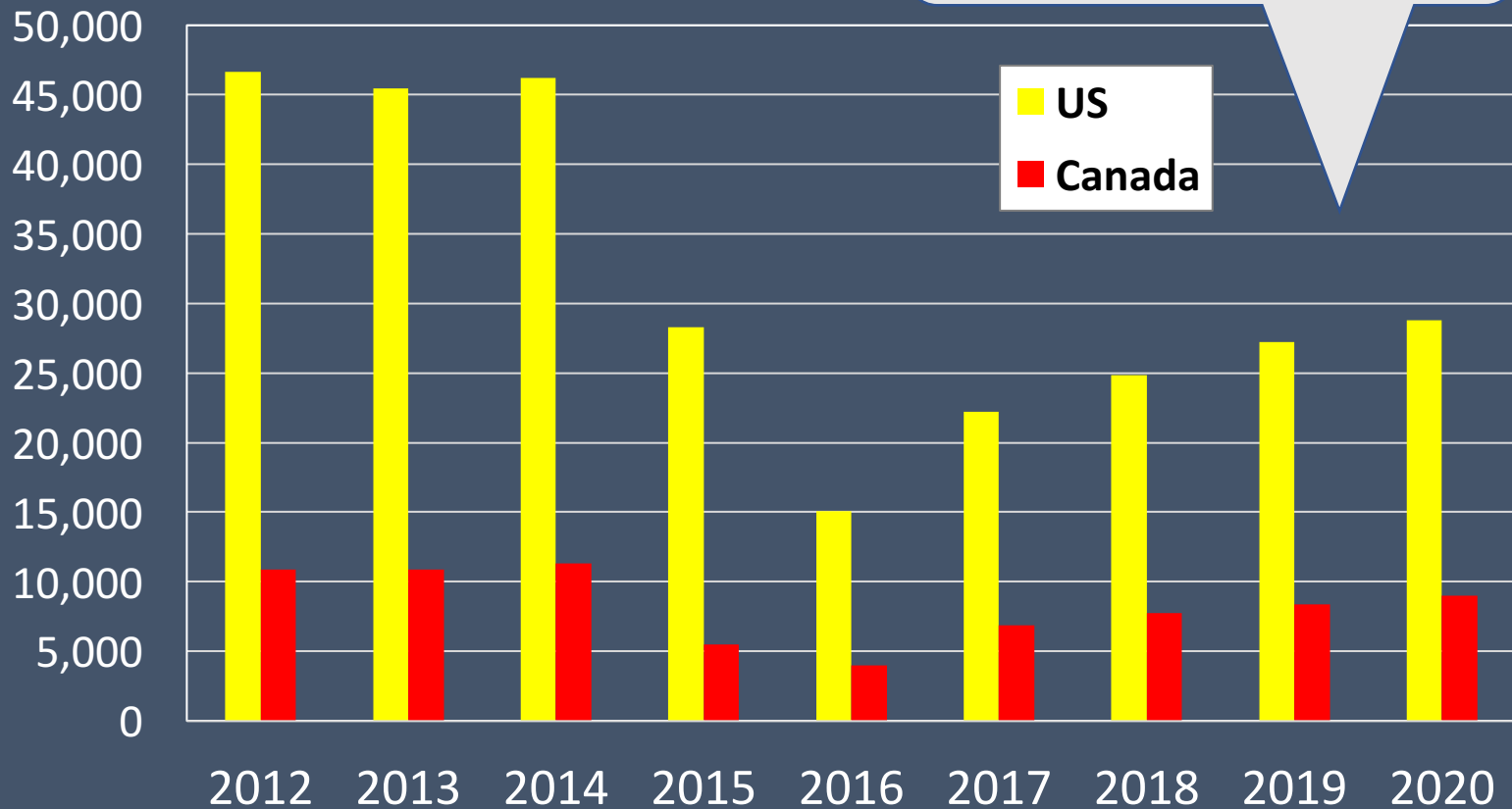


NAM Rig Activity

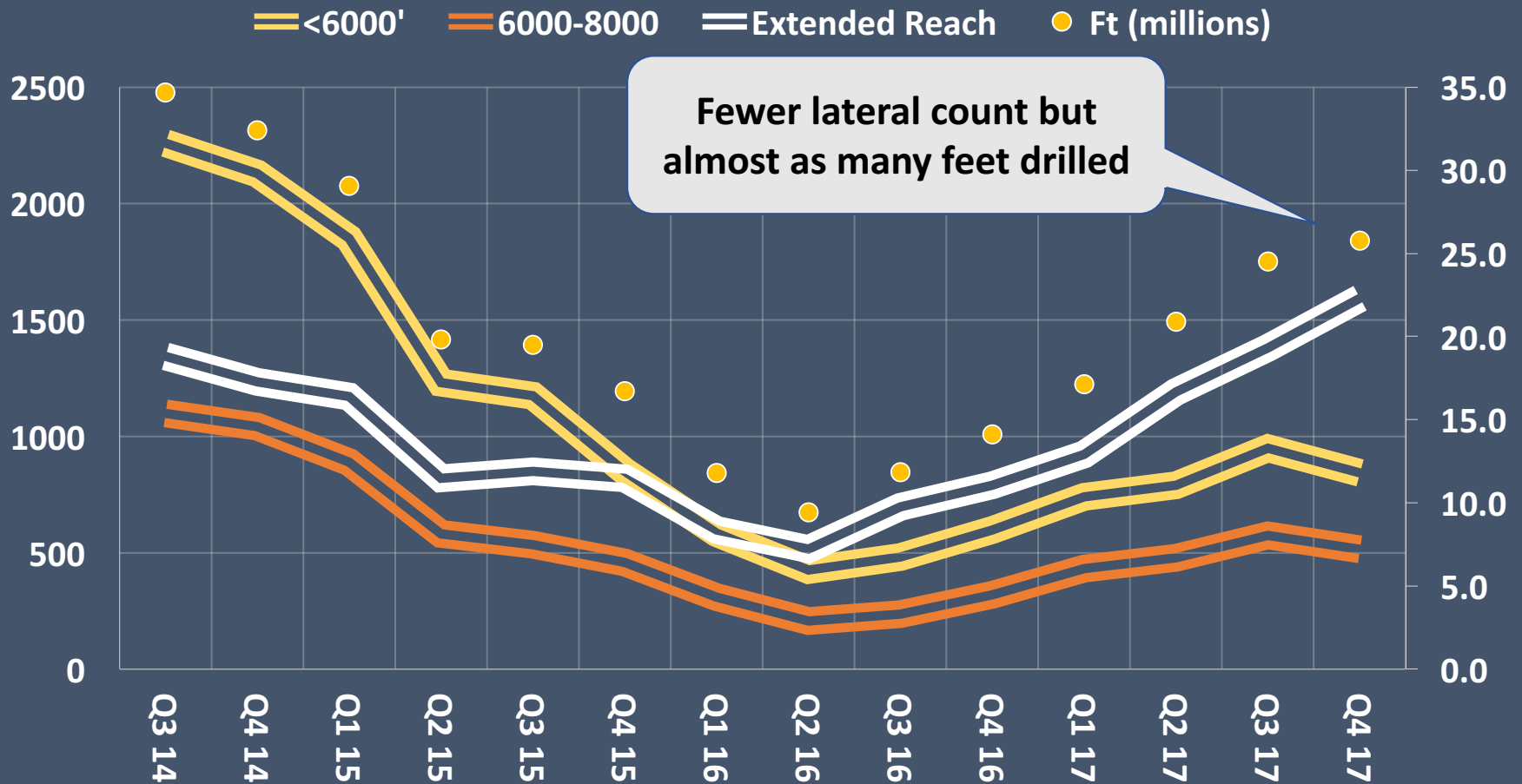


NAM Wells Drilled

Most of these wells are horizontal...80%



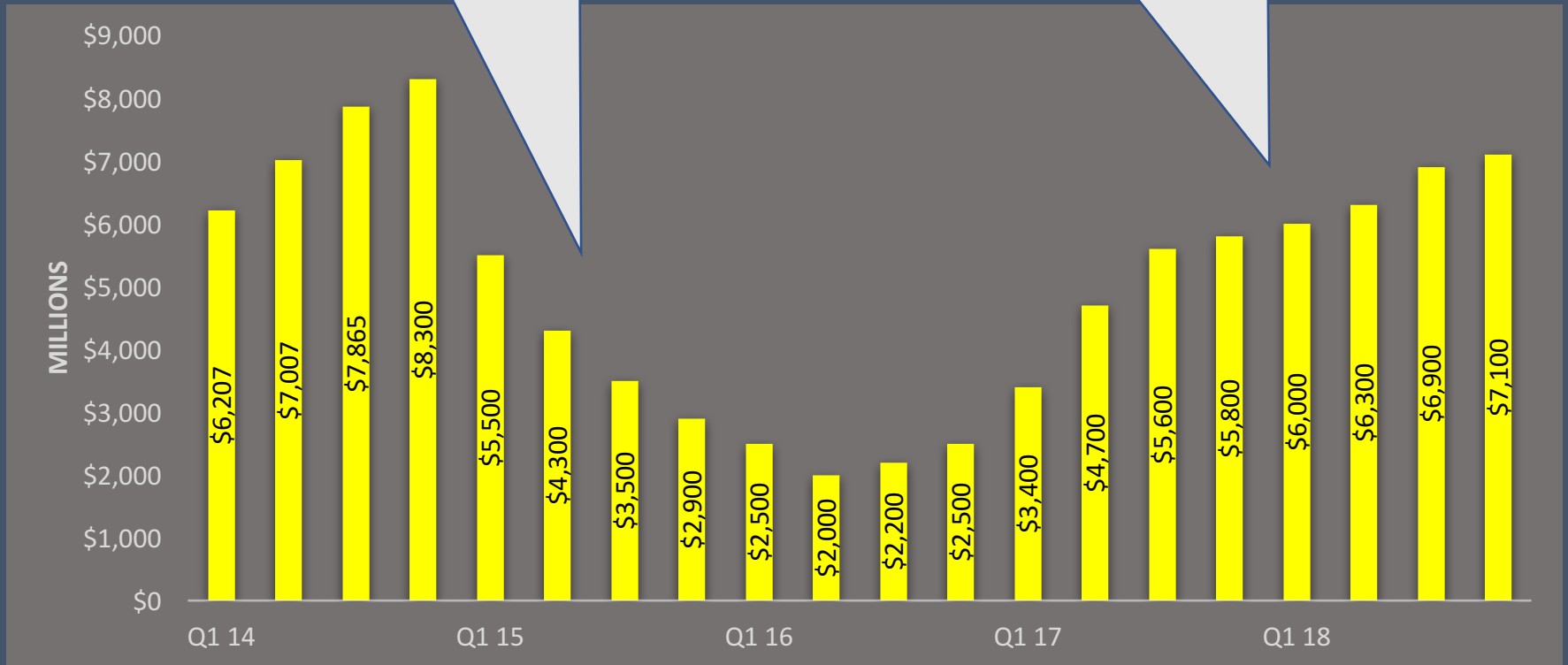
US Laterals



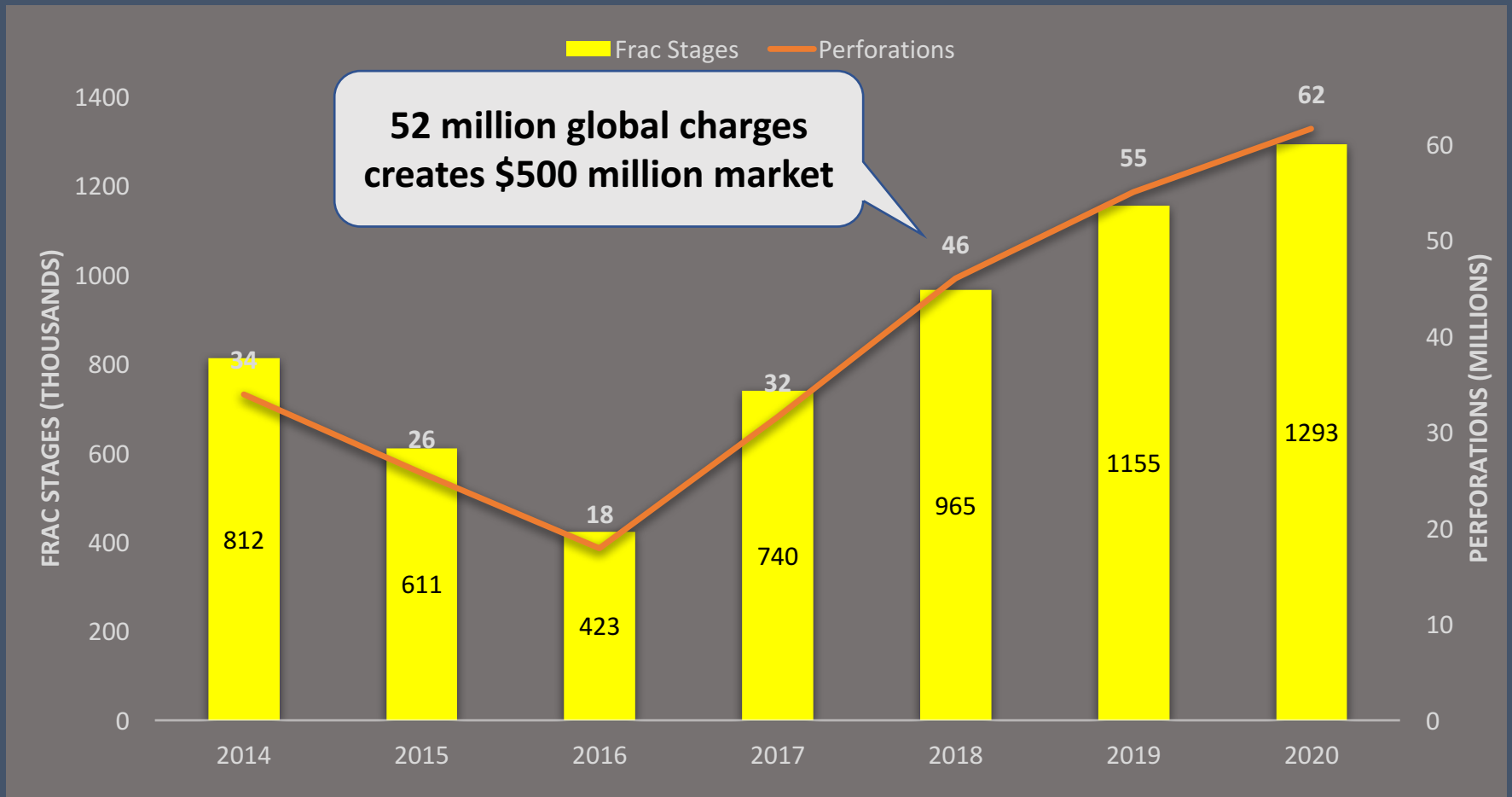
Quarterly US Frac Market

Worst collapse in history

Expect growth to continue into 2019 as long as oil price holds!



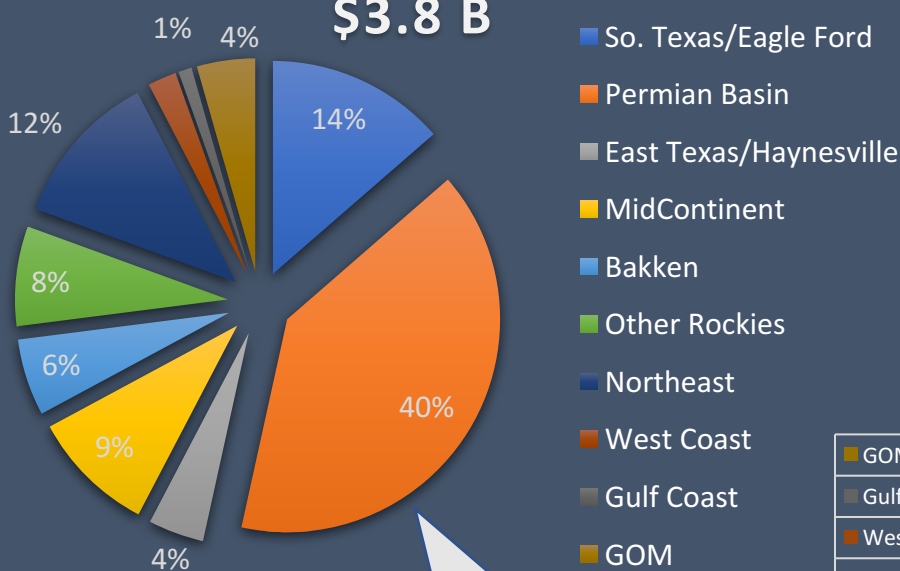
NAM Perforating Market



US Regional CH Wireline Markets

2% 2018 - US Cased Hole Mkt -

\$3.8 B



Permian still dominates

\$6,000

\$5,000

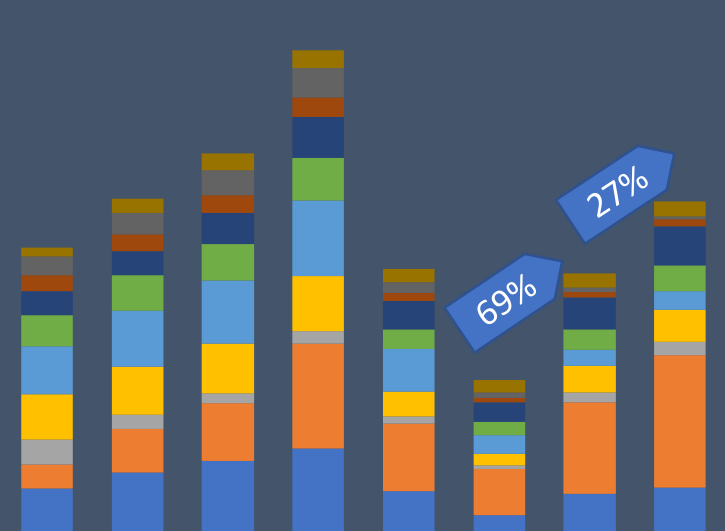
\$4,000

\$3,000

\$2,000

\$1,000

\$0

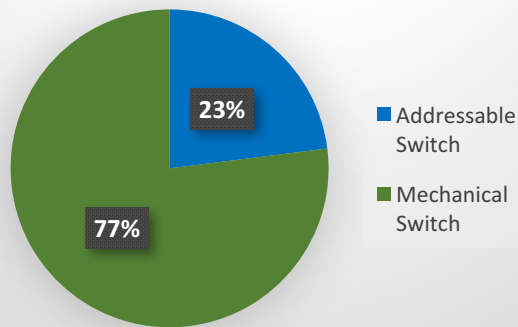


	2011	2012	2013	2014	2015	2016	2017	2018
GOM	\$100	\$160	\$195	\$200	\$150	\$145	\$165	\$170
Gulf Coast	\$216	\$249	\$288	\$350	\$129	\$63	\$52	\$39
West Coast	\$190	\$196	\$201	\$225	\$91	\$53	\$63	\$84
Northeast	\$279	\$282	\$369	\$470	\$326	\$222	\$375	\$454
Other Rockies	\$364	\$407	\$424	\$500	\$235	\$153	\$236	\$291
Bakken	\$553	\$651	\$728	\$870	\$490	\$215	\$179	\$225
MidContinent	\$523	\$556	\$581	\$645	\$290	\$138	\$317	\$364
East Texas/Haynesville	\$291	\$172	\$107	\$140	\$81	\$39	\$112	\$162
Permian Basin	\$282	\$506	\$670	\$1,221	\$783	\$536	\$1,067	\$1,531
So. Texas/Eagle Ford	\$509	\$693	\$835	\$975	\$483	\$205	\$444	\$523

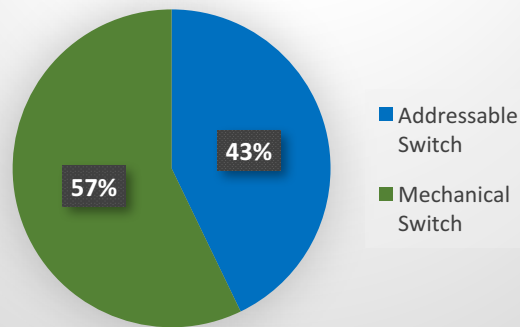
NAM: Addressable Switch Adoption

Get onboard or get left behind...

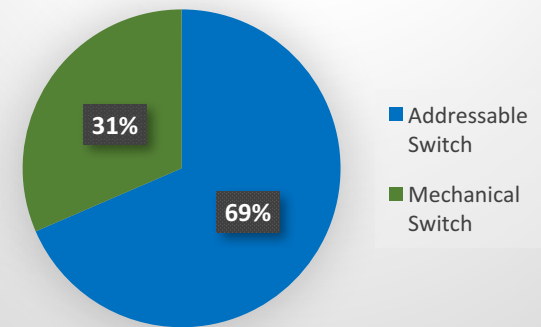
Switch By Type - 2014



Switch By Type - 2017

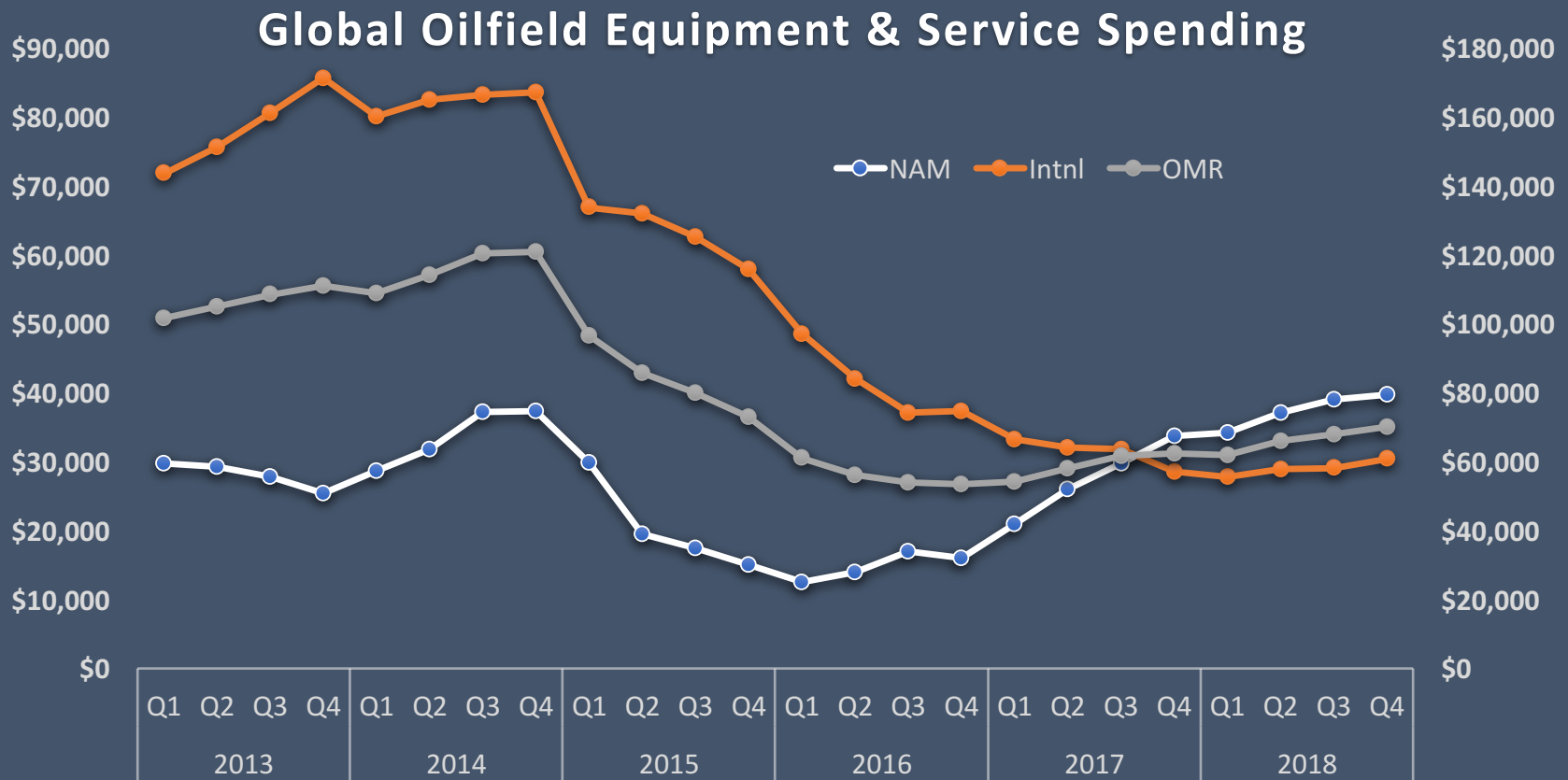


Switch By Type - 2020



Adoption of Addressable Switch Over Time

Back To The Future?



Back To The Future?

- **Demand will continue to be driven by population growth**
- **Supply will be severely reduced offshore and internationally**
- **The Permian Basin represents almost ALL global oil growth**