

# Welcome



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# Clay Williams

Chairman, President, and Chief Executive Officer

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Clay Williams is the Chairman, President, and CEO of NOV. He has served in varying executive positions at NOV—including COO and CFO—Varco, and Tuboscope, and has previous experience working for Shell Oil Company. Clay received a BS in Civil and Geological Engineering from Princeton University and an MBA from the University of Texas.



# Rig Technologies

Design | Make | Build

# Wellbore Technologies

Do | Explore | Seek

# Completion & Production Solutions

Extract | Refine | Maximize

# Agenda

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Oilfield ecosystem

Equipment intensity

Accelerators for growth

# Strategic positioning

*“The fundamental basis of above-average performance in the long run is sustainable competitive advantage.” – Warren Buffett*

# Porter's Five Forces

## **Threat of substitutes**

What alternative means do customers have to achieve what they need to get done?

## **Threat of new entrants**

How difficult is it for others to enter and compete, if it evolves into a profitable space?

## **Competitive intensity or rivalry of an industry**

Are there 4 competitors or 40?

## **Supplier concentration**

Are we reliant on one supplier, or are there many suppliers who will be price competitive?

## **Customer concentration**

Are there 5 or 500? Customers will have more leverage if there is a small number of them.

# Where to deploy capital

## The best businesses

Customers have no easy, cheap substitutes  
Have many suppliers  
Have many customers  
Have high barriers to entry  
Have low competitive rivalry

## The worst businesses

Customers have cheap, easy substitutes  
Have one or two key suppliers  
Have only a few customers  
Have low barriers to entry  
Have high competitive rivalry

# Oil and gas companies

>1,000 firms producing a commodity, inherently price-takers

Will spend over \$250B drilling over 45,000 wells globally in 2018

In some years, reinvest over 100% of their cash flow to replace depleting production



# The first oil and gas company

## **Seneca Rock Oil Company**

Founded in 1859 by “Colonel” Edwin Drake

Financier, equipment designer, equipment builder, driller, geologist, refiner, kerosene marketer, etc. – he did it all

**The most vertically integrated oil company ever**

# Specialization in the oilfield

Spurred by industrial evolution

Cost reductions driven by breaking up value chain and honing intense specialization

# Oil and gas production is extraordinarily capital-intensive

Focus on capital stewardship activities

- Subsurface modeling
- Financing
- Risk management

Systematically delegate well construction processes to specialized firms

# Oil and gas services

Called upon to execute all well construction processes for O&G companies

Well construction involves dozens of discrete steps

Each element of well construction employs fit-for-purpose equipment

# Oil and gas services

Highly specialized, focused on...

- Workforce training
- Technology
- Service culture
- Logistics
- Marketing

# Coiled tubing

**WHAT** – the arthroscopic surgery of the oilfield - a continuous steel tubing that can reach the bottom of a well

**WHY** - used to set and drill plugs, among other types of well intervention

**SIZE** - \$5.4B global market with more than 71 service providers

# Challenge #1: Getting there

Reel height can exceed bridge, underpass, and powerline limitations

Reel weight can exceed highway limits

Clever unit designs can help Bob get to the wellsite with minimal hassle



## Challenge #2:

# Rapid consumption of CT

Coiled Tubing (CT) wears out in <60 days

- Deformed past its plastic limits 6x for every round trip in the well

Transporting replacement CT reels exacerbates Bob's challenge

Unit designs can speed time required to swap CT strings

Again, clever unit designs can help out Bob's operation





## Challenge #3:

# Impact of catastrophic failure

Parting of CT means total loss of the well

- Enormous blow to Bob's financials, reputation

Clever unit and injector block designs can ease wear and tear on CT



## Challenge #4:

# Importance of uptime

CT operation only small part of total spread cost

- Hydraulic frac fleet costs remain when CT operation down
- Downtime interferes with tightly choreographed completion logistics
- Can delay first oil

Uptime ties directly to financial performance

Uptime correlates to Bob's reputation

Unit design and aftermarket support can help lift Bob's uptime



## Challenge #5:

# Workforce management

Bob's workforce expands and contracts cyclically

Bob's ability to quickly train new hires correlates to his level of service and reputation

- CT unit operation
- CT unit maintenance

Bob benefits from standardization of processes (fleet, software controls)



# There are many unique challenges running every oilfield services operation

Fit-for-purpose equipment designs can help these companies be successful



# Oil and gas services

Tremendously entrepreneurial space

- Fragmented and fragmenting further

NOC's pursue public policy goals for localization

- Leading to proliferation of local service companies

# Oil and gas equipment manufacturers

Evolved to supply specialized tools to support OFS

About 70% of NOV's revenues derived from this strategic model

Compelling proprietary competitive advantage arising from...

- Scale economies
- Experience
- Standardization
- Portfolio flexibility
- Aftermarket
- Software
- Customer fragmentation
- Low capital intensity
- Few substitutes

## **Advantage #1:**

# **Scale economies**

Market leadership drives scale economies and efficiencies in

- Purchasing
- Manufacturing
- Marketing



# NOV's market leadership

Land rig equipment	#1	Coiled tubing	#2
Offshore rig equipment	#1	Nitrogen units	#1
Mobile workover rigs	#1	Data vans	#1
Downhole drilling motors	#1	Frac trucks	#3
Premium drill pipe	#1	Wireline units	#1
Drill bits	#3	Oilfield fiberglass tubulars	#1
Independent MWD	#1	Turret mooring systems	#1
Friction reduction systems	#1	Progressing cavity pumps	#3
Wired drillpipe	#1	Fluids processing units	#2
Shale shakers	#1	Tubular inspection	#1
Shaker screens	#1	Tubular coating	#1
Thermal desorption units	#1	Conductor pipe connections	#1
Drill cuttings centrifuges	#1	Subsea flexible pipe	#3
Coiled tubing units	#1	Knuckle Boom Cranes	#1

Sources: Spears & Associates, NOV analysis



# Global volume of OFS service verticals supported

	<b>2014</b>	<b>2018E</b>
<b>Rig Technologies</b>	\$149B	\$73B
<b>Wellbore Technologies</b>	\$53B	\$30B
<b>Completion and Production Solutions</b>	\$84B	\$57B

Sources: Spears & Associates, NOV analysis

## **Advantage #2:**

# **Experience**

Market leader accumulates experience solving challenges at fastest rate

Highest value offering for its customers

## Advantage #3:

# Best choice for fleet standardization

Market leader offers best choice for customers looking to standardize fleet

- Breadth of product offering
- Well-capitalized partner with staying power
- Lowest risk choice on which to build an enterprise

Foundation of long-term relationship

## **Advantage #4:**

# **Portfolio flexibility**

Flexible facilities which can produce multiple product lines

Ability to redeploy resources to areas of high demand

Development of cross-discipline products  
(e.g. Closed-loop automated drilling)

## Advantage #5:

# Aftermarket opportunities

Market leader's installed base brings proprietary aftermarket opportunities

Uptime is **critical** to OFS companies

Preference for OEM support

***Sustainable advantage: Installed base takes decades to build***

## Advantage #6:

# Software opportunities

Market leader with largest installed base has proprietary software opportunities

- Control systems
- Predictive analytics
- Condition-based monitoring

## **Advantage #7:**

# **Fragmented customer base**

OFS verticals are generally fragmented and continue to fragment

Private equity and other sources of capital support startups in OFS

NOCs, in particular, desire local service company options

## **Advantage #8:**

# **Low capital intensity**

Investment in factories small compared to revenue generated

OFS equipment manufacturing carries low maintenance capex needs

Factories can be redeployed, boosting capital efficiency

***Low reinvestment requirements boost free cash flow***



## Advantage #9:

# Few substitutes

Development of new oil sources requires new tools

- Deepwater
- Unconventionals

Few substitutes for many categories of equipment

**Challenge:**

# **High cyclicality**

Commodity price cyclicality amplified in capital equipment demand

Customers sometimes overbuild in periods of high oil prices

***However, portfolio diversity, aftermarket support of installed base help us manage through the cycles...***

## Challenge:

# Customer's vertical integration

...based on desire to differentiate offering

## However,

- ✗ Requires new, different skill sets
- ✗ Requires capital deployment into manufacturing footprint, supply chain, aftermarket
- ✗ Forego scale economies in purchasing, manufacturing
- ✗ Complexity of manufacturing is rising as machines get smarter...less welding, more programming...

# OILFIELD ECOSYSTEM

## OIL & GAS COMMODITY MARKETS



### OILFIELD SERVICES

OFFSHORE DRILLERS

WELL SERVICING COMPANIES

MWD COMPANIES

LAND DRILLERS

OFFSHORE CONSTRUCTION

FRAC FLOWBACK COMPANIES

DIRECTIONAL DRILLERS

CEMENTING COMPANIES

COMPLETION COMPANIES

FISHING COMPANIES

SNUBBING COMPANIES

DRILLING FLUID COMPANIES

COILED TUBING COMPANIES

WIRELINE COMPANIES

CASING RUNNING COMPANIES

PRESSURE PUMPERS

### OILFIELD EQUIPMENT MANUFACTURERS

Enablers of Oilfield Service Companies

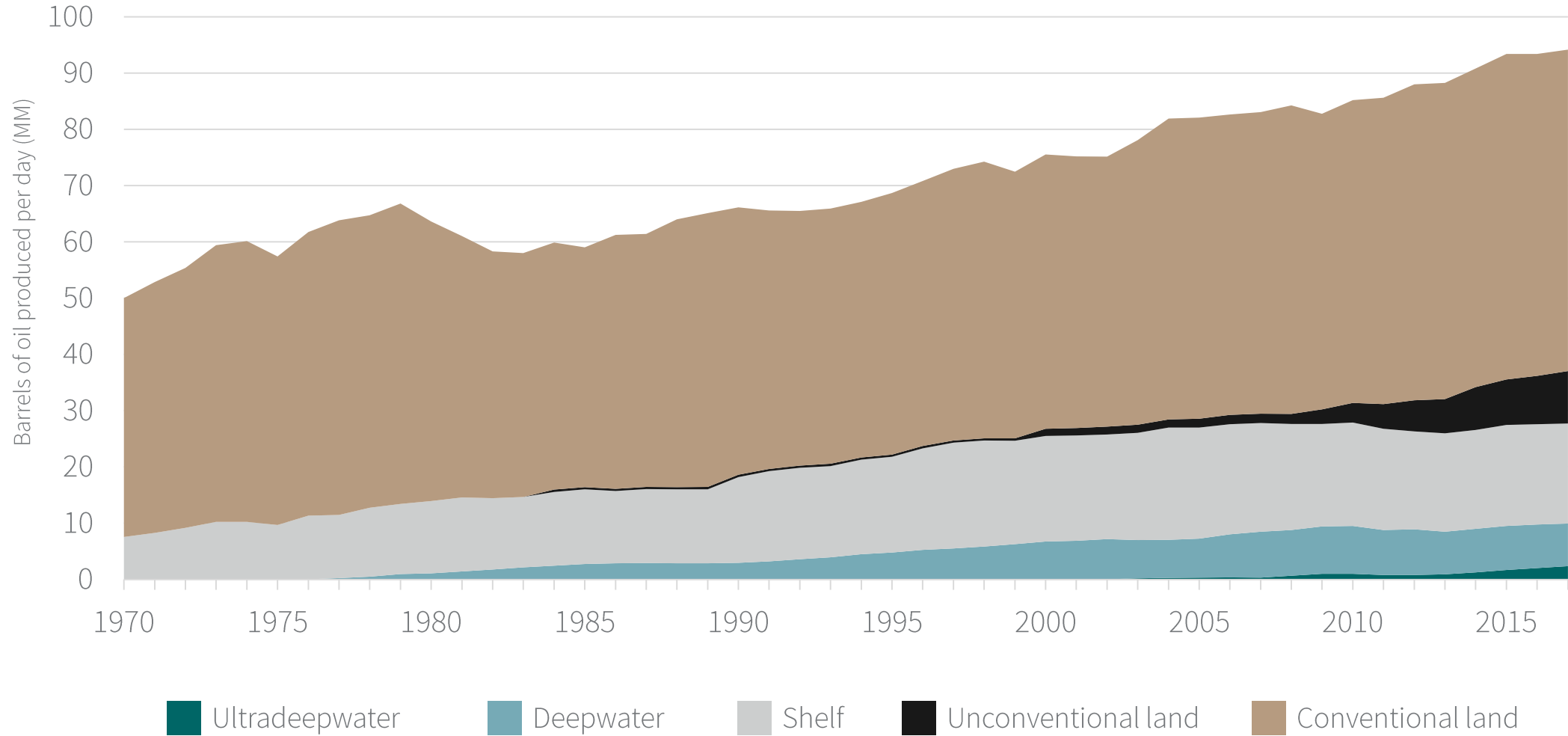


# Oil and gas industry trends

Technology opening up unconventional reservoirs

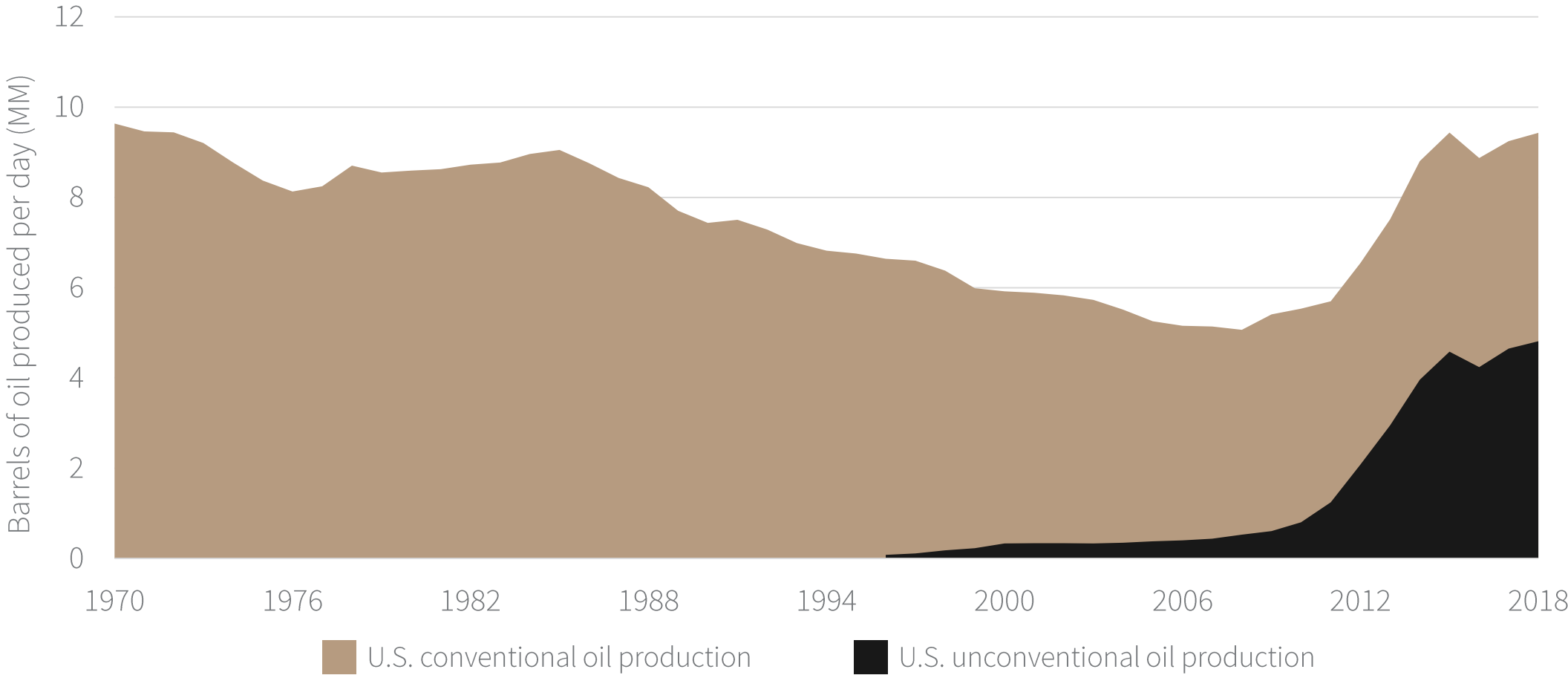
Emerging sources of oil and gas

# Global crude oil production by formation



Source: U.S. Energy Information Administration (EIA)

# Rapid growth of unconventional production in the U.S.



Source: U.S. Energy Information Administration (EIA)

# Barrel economics

Equating rig capital to barrels developed



**\$22,000,000** rig purchase  
+ **\$6,000,000** component replacement

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**\$28,000,000** rig capex

# Per barrel contribution of a drilling rig

Methodology based on a U.S. unconventional land well

$$\begin{array}{ccccccc} \mathbf{25} & \times & \mathbf{80\%} & \times & \mathbf{17} & = & \mathbf{340} \\ \text{years of} & & \text{utilization} & & \text{wells drilled} & & \text{wells} \\ \text{useful life} & & & & \text{per year} & & \end{array}$$

Sources: IHS, Rystad Energy, WoodMackenzie, Spears & Associates, EIA, NOV analysis

# Per barrel contribution of a drilling rig

Methodology based on a U.S. unconventional land well

$$\begin{array}{rcccl} \mathbf{340} & \times & \mathbf{700,000} & = & \mathbf{238,000,000} \\ \text{wells} & & \text{barrels per well EUR} & & \text{barrels} \end{array}$$

Sources: IHS, Rystad Energy, WoodMackenzie, Spears & Associates, EIA, NOV analysis

# Per barrel contribution of a drilling rig

Methodology based on a U.S. unconventional land well

$$\begin{array}{r} \$28,000,000 \\ \text{rig capex} \end{array} \div \begin{array}{r} 238,000,000 \\ \text{barrels} \end{array} = \text{\$0.12/bbl}$$


Sources: IHS, Rystad Energy, WoodMackenzie, Spears & Associates, EIA, NOV analysis

**\$0.12/bbl**  
rig capex per barrel

*Sources: IHS, Rystad Energy, WoodMackenzie, Spears & Associates, EIA, NOV analysis*

$$\begin{array}{rcccl} \mathbf{\$6.25M} & \div & \mathbf{700,000} & = & \mathbf{\$8.93} \\ \text{well cost} & & \text{barrels per well EUR} & & \text{per barrel of oil} \end{array}$$

Sources: IHS, Rystad Energy, WoodMackenzie, Spears & Associates, EIA, NOV analysis



**\$8.93/bbl**

Operator's  
capex spend  
per barrel of oil

**\$0.12** Rig equipment

**\$0.04** Rig aftermarket

**\$0.07** Drill pipe

**\$0.01** Shaker screens

**\$0.21** Bits, rental, and fishing tools

**\$0.19** MWD and directional drilling tools

**\$0.02** Cementing equipment

**\$0.11** Coiled tubing units and CT

**\$0.02** Wireline units and tools

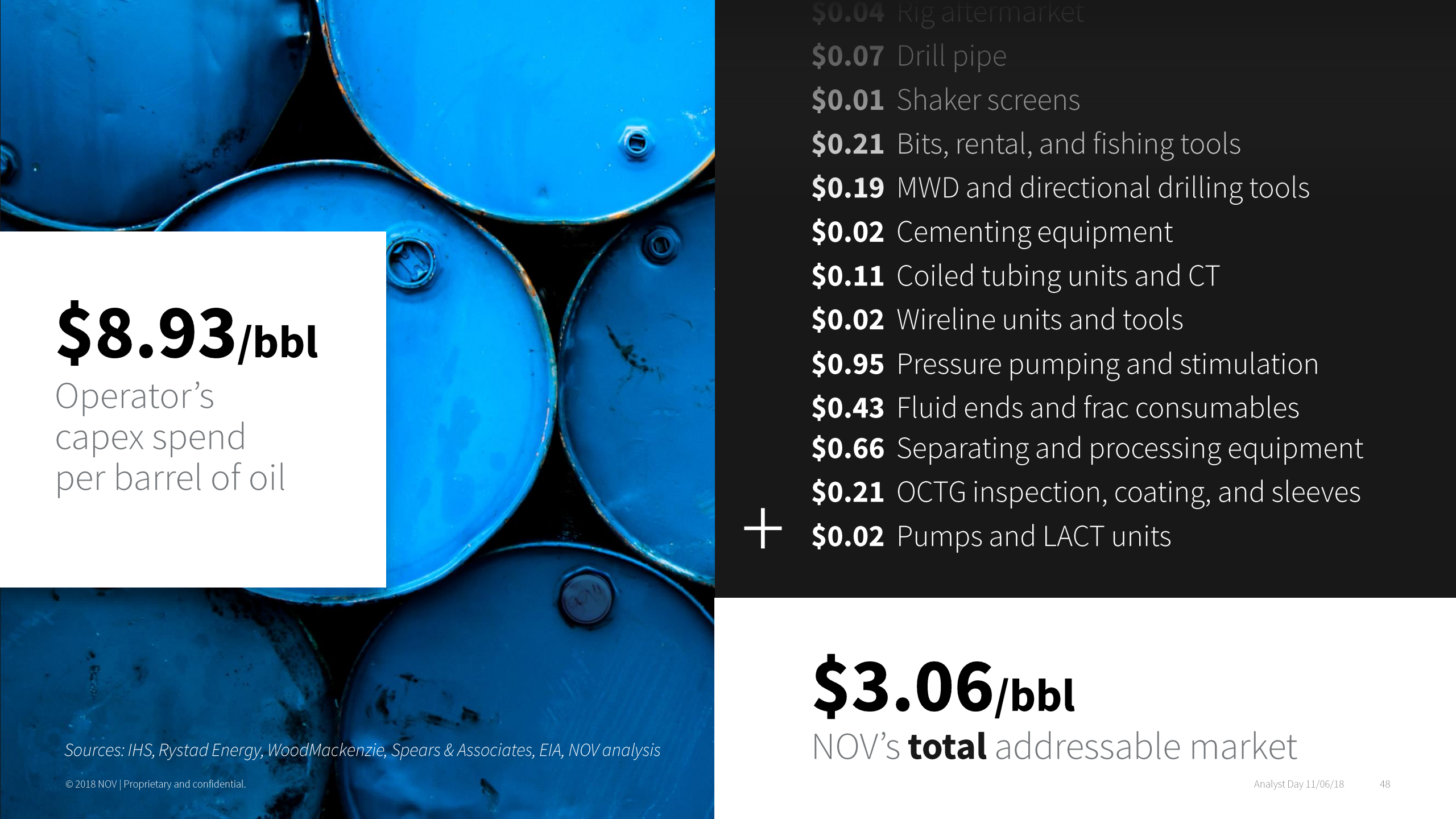
**\$0.95** Pressure pumping and stimulation

**+** **\$0.43** Fluid ends and frac consumables

**\$2.17/bbl**

NOV's addressable **tool** market

Sources: IHS, Rystad Energy, WoodMackenzie, Spears & Associates, EIA, NOV analysis



**\$8.93/bbl**

Operator's  
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\$0.04 Rig aftermarket

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\$0.02 Cementing equipment

\$0.11 Coiled tubing units and CT

\$0.02 Wireline units and tools

\$0.95 Pressure pumping and stimulation

\$0.43 Fluid ends and frac consumables

\$0.66 Separating and processing equipment

\$0.21 OCTG inspection, coating, and sleeves

+ \$0.02 Pumps and LACT units

**\$3.06/bbl**

NOV's **total** addressable market

Sources: IHS, Rystad Energy, WoodMackenzie, Spears & Associates, EIA, NOV analysis





## 4 Well types

**\$6.3MM** Unconventional land well – US

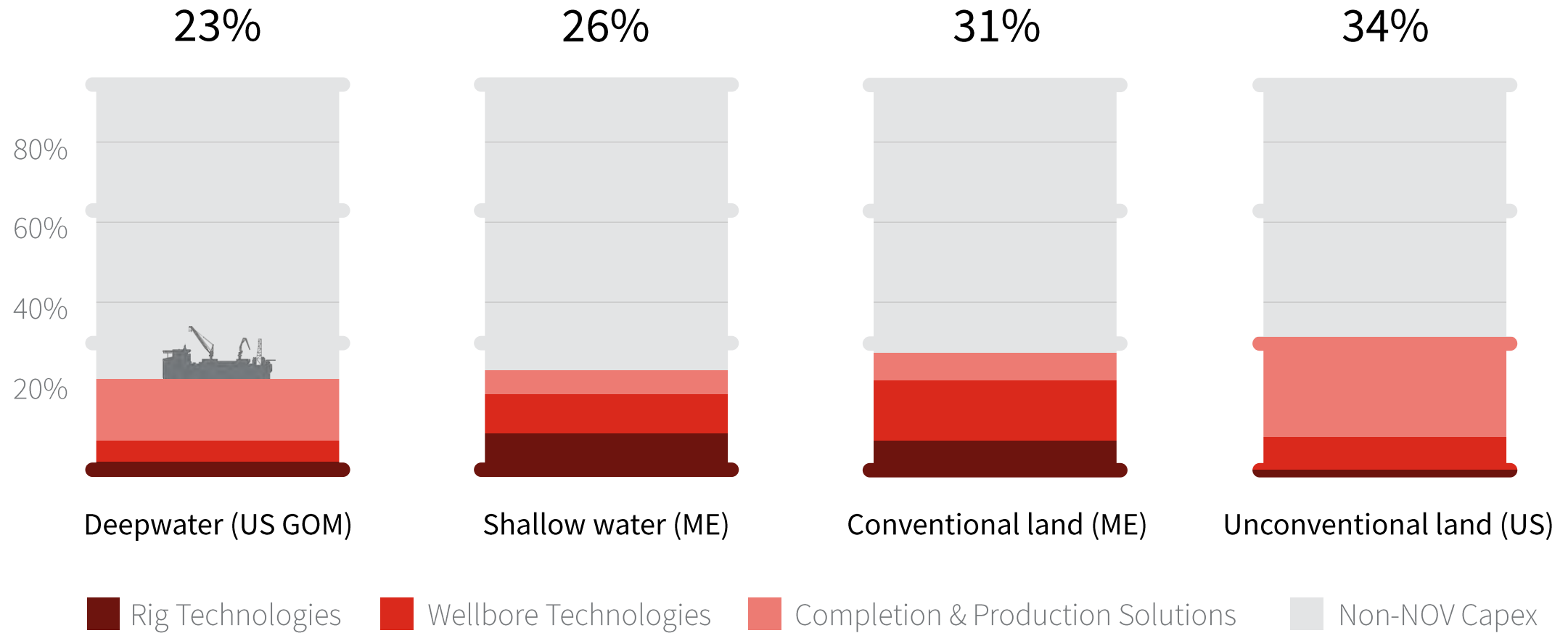
**\$225MM** Deepwater well - US GOM

**\$13.9MM** Shallow water well - Middle East

**\$7.3MM** Conventional land well – Middle East

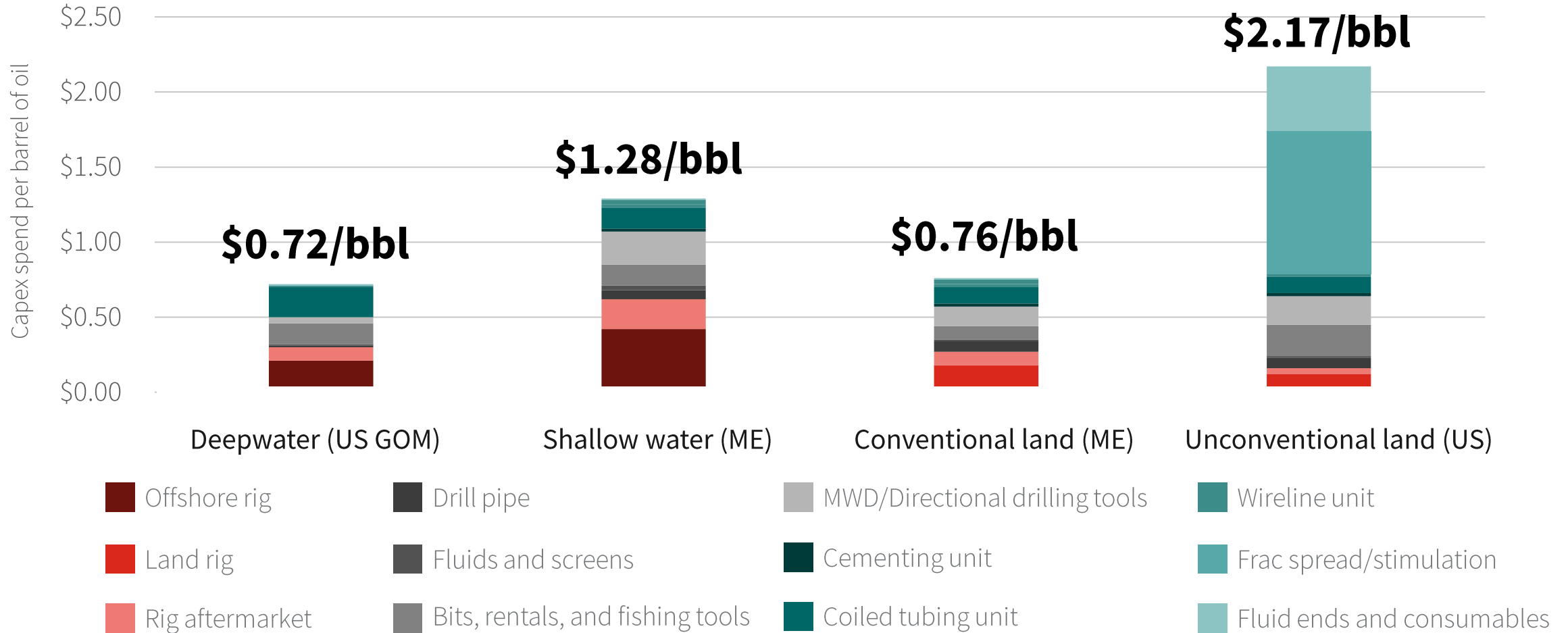
*Sources: IHS, Rystad Energy, WoodMackenzie, Spears & Associates, EIA, NOV analysis*

# NOV's addressable market - % of unit development cost



Sources: IHS, Rystad Energy, WoodMackenzie, Spears & Associates, EIA, NOV analysis

# Tools consumed per barrel of oil developed



Sources: IHS, Rystad Energy, WoodMackenzie, Spears & Associates, EIA, NOV analysis





All oil and gas developments physically **consume oilfield tools**

**Intensity and mix** vary significantly by source

**Unconventionals** are the most consumptive of the four sources analyzed

These four sources aggregate to approximately **30% of current global supply**


These four sources are **most likely to grow** to supply incremental demand

# **NOV accelerated**

Five incremental growth opportunities



**Directional  
drilling tools**



**Completion  
tools**



**NOVOS**



**Drilling automation**



**Predictive analytics and CBM**

# Directional drilling tools



“In-target wellbore placement is key to **maximizing well productivity** and fundamental to our success.

Slight deviations from the ideal target can certainly impact well performance.”

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**Bill Thomas**

Chairman and Chief Executive Officer, **EOG**





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Directional drillers



*Sources: Spears & Associates, NOV analysis*



**~\$9B directional drilling market**



**11% CAGR projected to 2021**

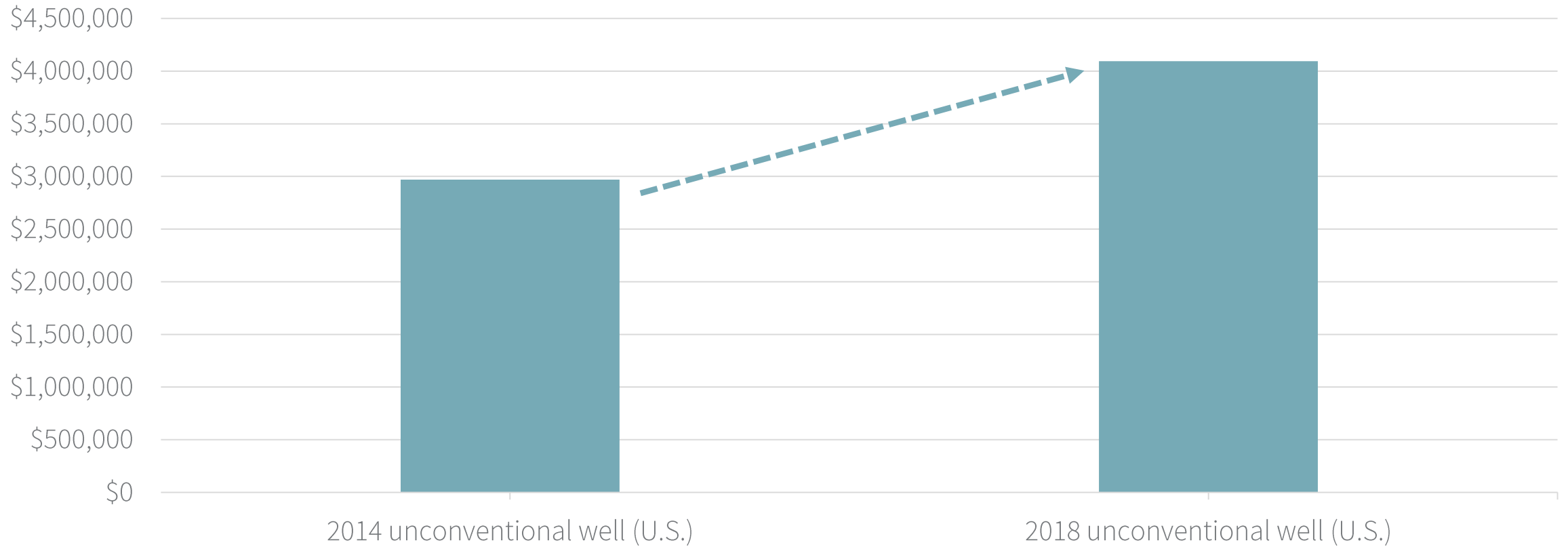


*Source: Spears & Associates*

# Completion tools

# Per-well completions spend

Unconventional developments raise completions spend



Sources: Rystad Energy, NOV analysis

■ Completions





**\$8.6B market**

**11% CAGR projected to 2021**

*Source: Spears & Associates*

# NOVOS



> 2MM

Feet drilled

> 6k

Days operating

32

Apps running in field

# Drilling automation





6

Closed-loop automated drilling projects ongoing

1.5MM

Feet drilled

33k

Hours logged

# Predictive analytics and CBM



7

CBM programs

55

Rigs enlisted in  
CBM programs

57

Pre-failure  
notifications sent

# Why now?

## 4 years into a generational downturn...

\$75 Brent commodity prices are signaling **tightening supply and demand**

The OFS ecosystem is slowly recovering, with NAM leading the way

### **However,**

Oil and gas companies are carefully **limiting drilling capex** as their shareholders demand return of capital

## 4 years into a generational downturn...

Will North American unconventional be able to fully supply all future incremental demand? **We doubt it**

The call on **international and offshore markets**, specifically the Middle East and deepwater, will grow as the recovery proceeds

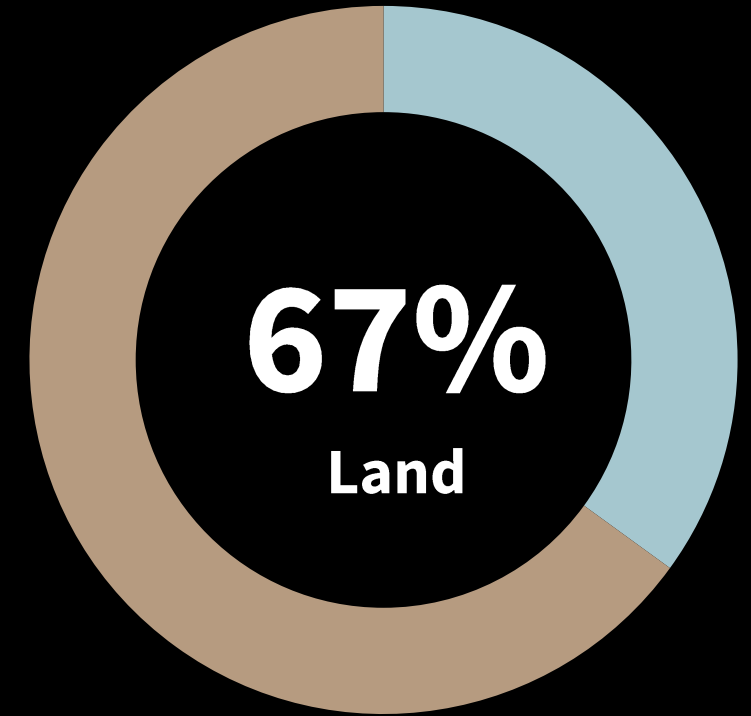
Overseas operators will **increasingly employ unconventional technologies** in tight reservoirs

## 4 years into a generational downturn...

As demand for offshore newbuild rigs has wound down, NOV has been executing a **strategic pivot**

### **Opportunities** around...

- Horizontal drilling
- Hydraulic frac stimulation, completions
- Installed base
- Digital products



NOV 3Q 2018  
Revenue Split

## 4 years into a generational downturn...

NOV has enhanced its optionality in all potential sources of oil, with particular focus on unconventional

### **How?**

Rifle-shot M&A combined with organic technology development

Maximizing returns on incremental capital deployments



# Why NOV?

We're making tools for an industry that consumes tools at a high rate

Proprietary opportunities in aftermarket with massive installed base

Low capital intensity generates strong free cash flow

Strategic pivot to go where E&P spend is flowing

Technical pivot to employ emerging technologies to extend competitive advantages

**NOV**