# **Kirk Shelton**

### President, Completion & Production Solutions



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#### Intervention and Stimulation Equipment

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### Completion Tools



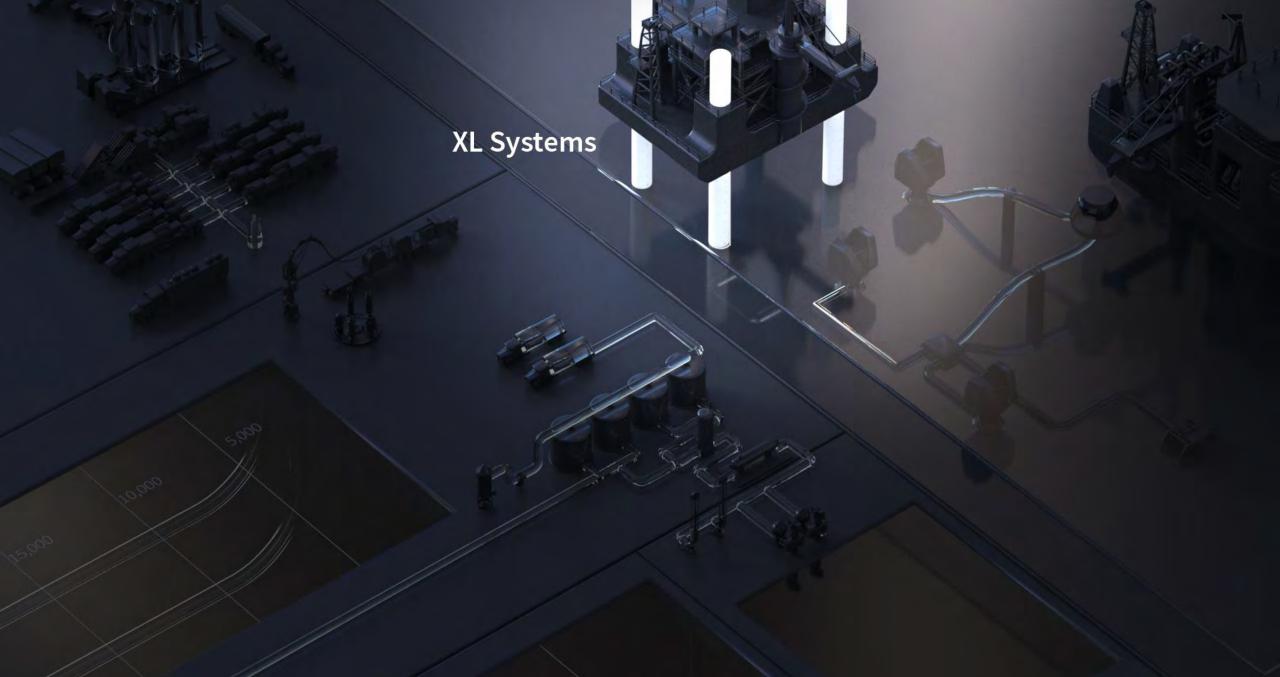


#### **Process and Flow Technologies**

#### Fiber Glass Systems

#### Subsea Production Systems

#### **Floating Production Systems**



### Agenda

**Segment Overview** 

Financials

Capitalizing on Completions

**Onshore Production** 

**Offshore Production** 





# **Our vision**

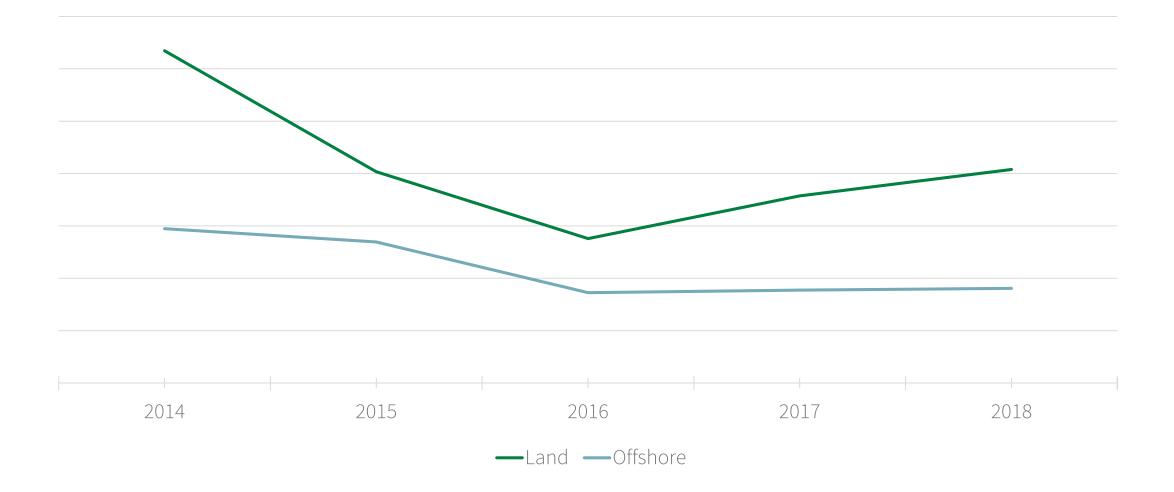
Provide safe, efficient, innovative solutions to maximize the flow of hydrocarbons and direct discrete production streams everywhere our customers operate

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### **Financial overview**

	2014	2015	2016	2017	2018 YTD
Revenue (\$MM)	4,645	3,365	2,241	2,672	2,143
EBITDA (\$MM)	918	535	217	346	265
Ending Backlog (\$MM)	1,780	969	818	1,065	880

#### Annual revenue trend



# Capitalizing on completions

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Intervention and Stimulation Equipment Completion Tools

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#### Trends

Longer laterals

More stages per well

More clusters per stage

More sand

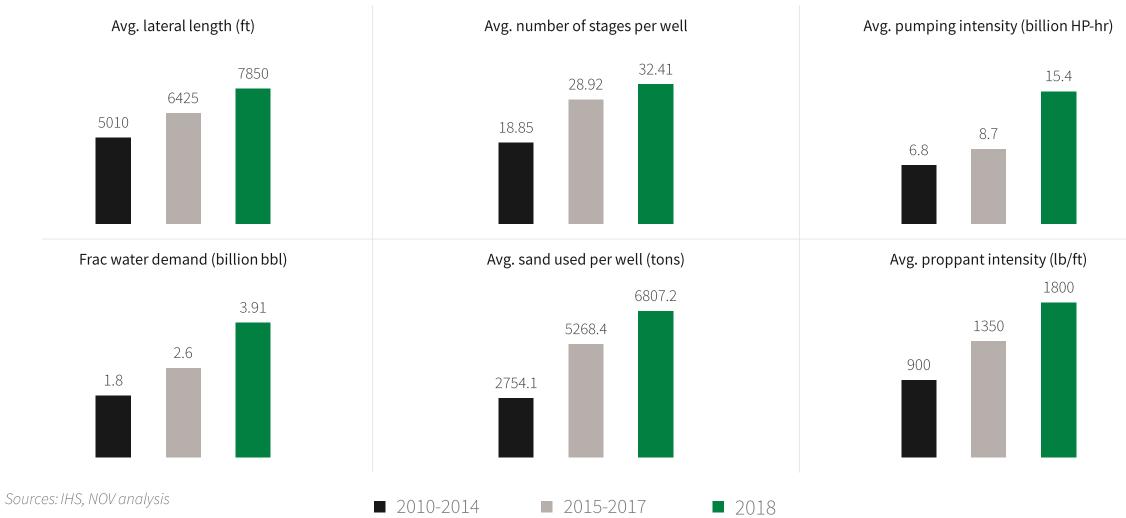
More water

More pumping horsepower

Zipper fracs

Multi-well pads

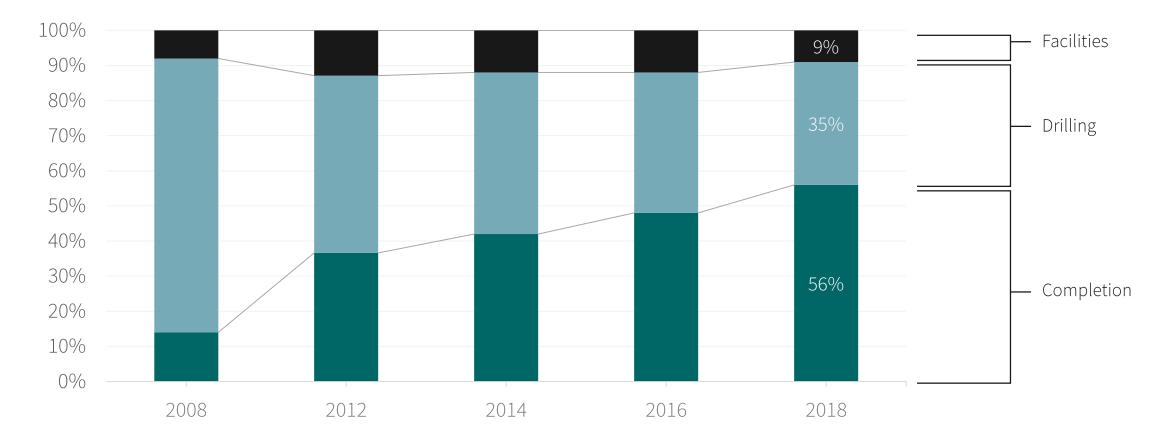
### Increasingly complex completions



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### Avg. shale well cost—"drilling vs. completion vs. facilities"

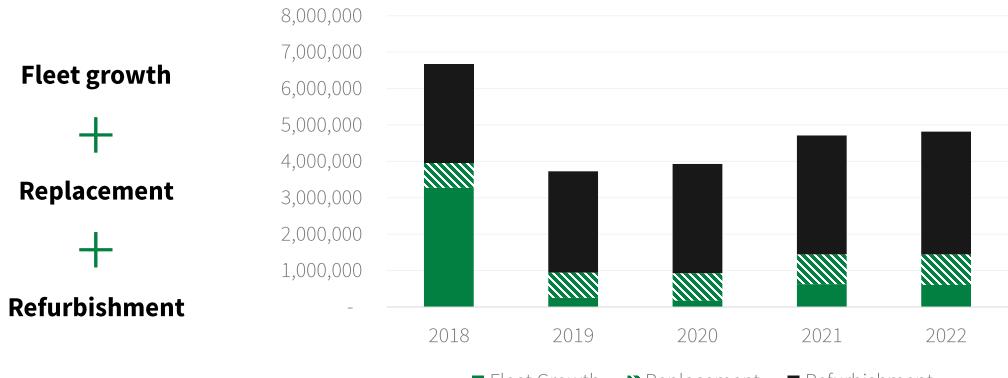
Completion cost as a % of overall well cost has been trending higher over the last few years



Source: Rystad Energy

# US frac supply (in HHP) driving new/refurb equipment sales

Yearly estimates from 2018 to 2022 capture fleet growth, replacement, and refurbishment

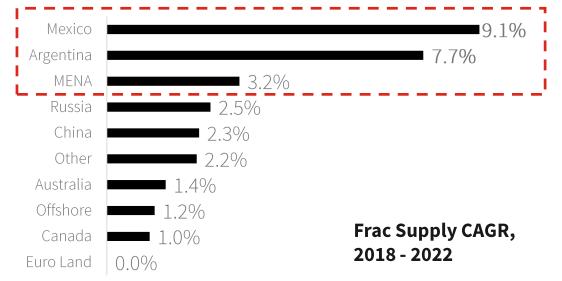


■ Fleet Growth S Replacement ■ Refurbishment

### International frac supply, end of year HHP

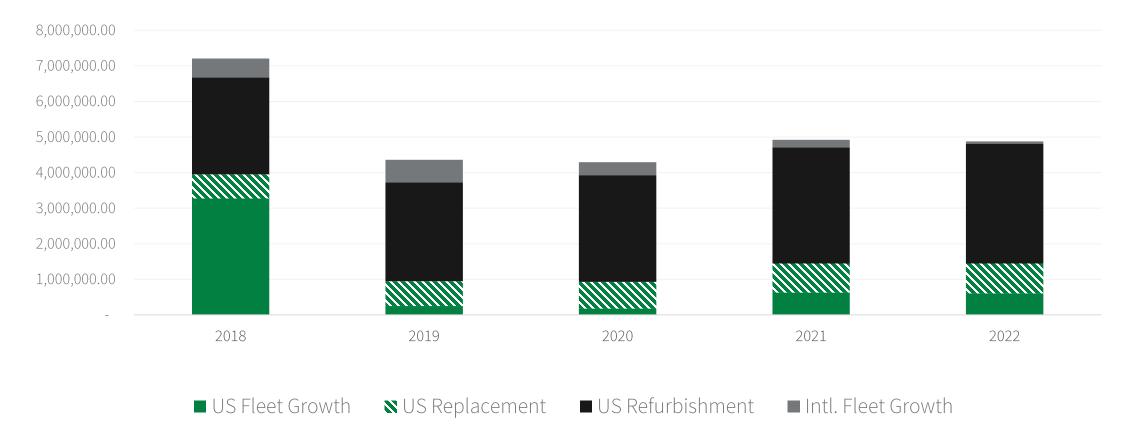
Non-U.S. frac supply averages ~33% of the global supply from 2018 to 2022





# **Overall frac supply (HHP) opportunity – U.S. and International**

Fleet growth estimates from IHS Markit. Internal estimates for U.S. replacement and refurbishment



Sources: IHS, NOV analysis

#### Flowline

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TIMIT

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#### Valves and fluid ends

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"There are numerous equipment suppliers in the industry, but no other can provide state of the art coiled tubing units and high-quality frac spreads that can withstand the service intensity required by current completion designs. Having a single source of standardized equipment allows Legend to streamline its operations and maximize efficiencies which creates value for customers and our shareholders."

> Trey Ingram CEO, Legend Energy Services

Frachorsepower

# 2,735,000+

Frac process units



NOV Enerflow

# The "new normal"

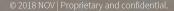
### Capitalizing on completions

How is equipment responding to trends?

#### New Hydra Rig<sup>™</sup> Injector

#### Advent<sup>™</sup> Coiled Tubing





#### Coiled tubing units

Injectors 2,400+

# Coiled tubing (ft) 600,000,000+

# iMaxx™ Wireline Truck

-

15





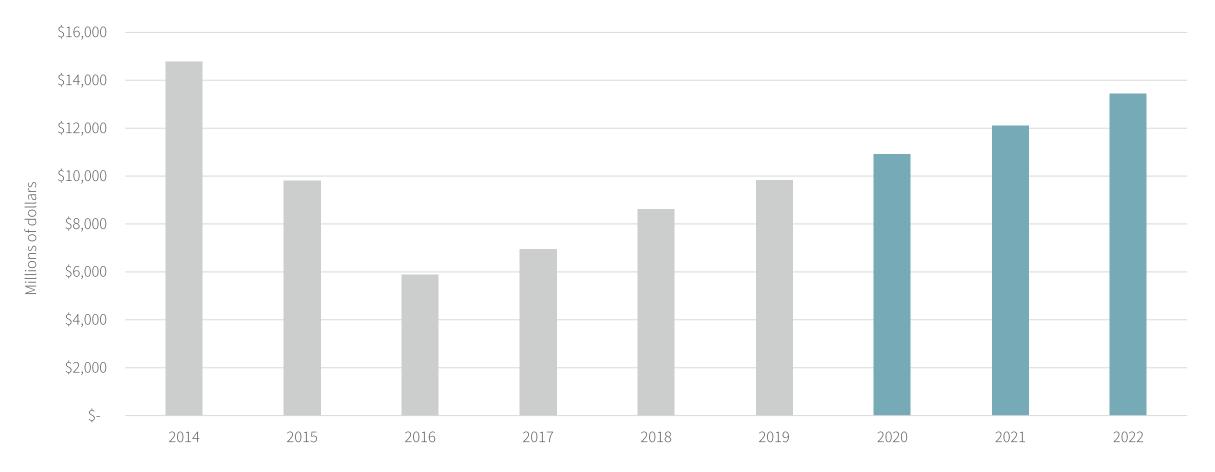
# Industry pain points

"Surge" pricing due to delays in unloading
Dust Control (OSHA regulations)
Limits to well site footprint
Duration of sand transport
HSE risks due to traffic, personnel on site

# **Completion Tools**

### **Global completion tools market**

Estimates for 2014 to 2019 from Spears. Internal projections for 2020 to 2022



Source: NOV analysis

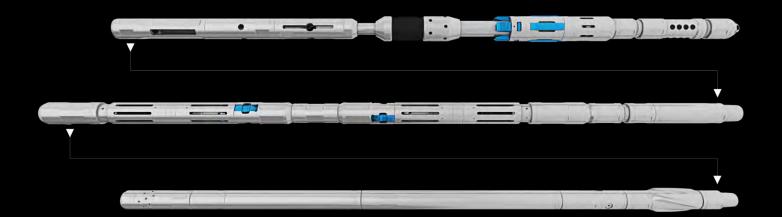
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# Plug and perf

Setter™ Frac Plug Rottweiler™ Frac Plug





# Annular frac

Bulldog™ System

# Toe valves

BPS™ Burst Port System

# Frac sleeves 15,000+

BPS toe valves **22,000+** 

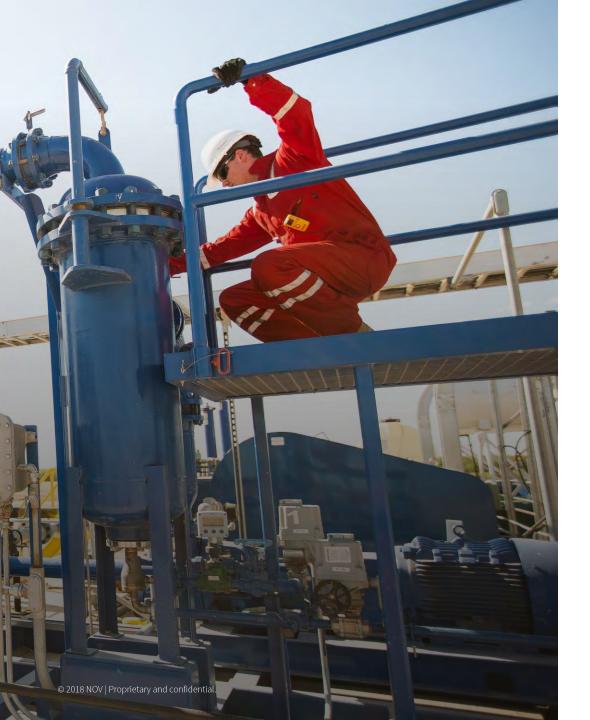
### Onshore production

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Process and Flow Technologies | Fiber Glass Systems

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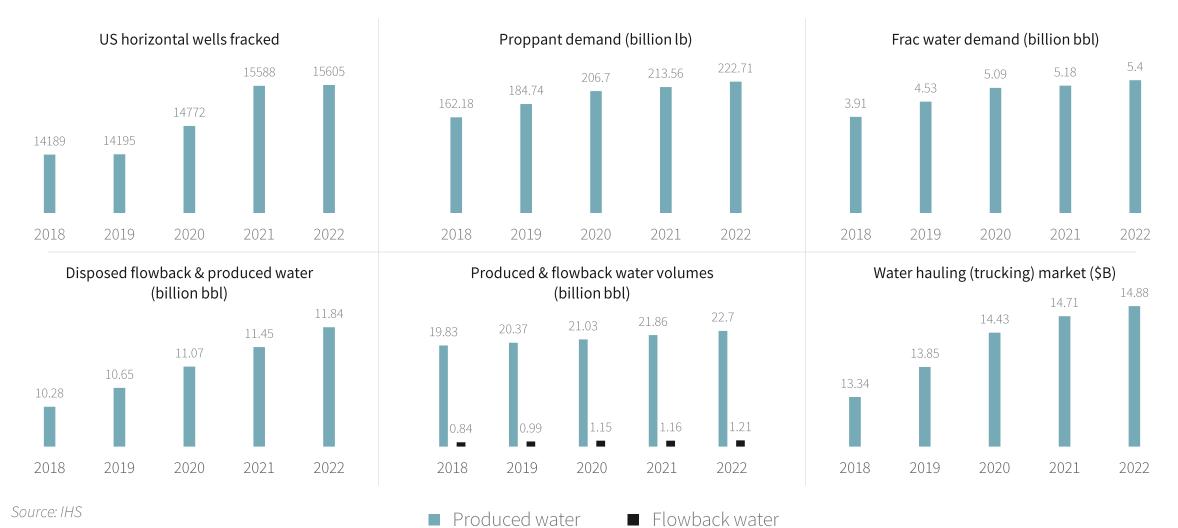


#### Trends

Increase in produced water Water disposal Increase spend on water management Trucking logistics and infrastructure Pipeline construction More centralized facilities Multi-well pads More sand

#### **Demands on production infrastructure**

Onshore U.S. projections for the next few years



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### From fracking to production

# Reciprocating pumps 75,000+

### Chokes 18,000+

Separators

### Progressing cavity pumps 330,000+

NATIONAL OILWELL VARCO

Spherical sand traps

400+

### **STAR Super Seal™** and **Bondstrand™** fiberglass pipe

Large diameter 12" STAR Super Seal pipe and 16" Bondstrand pipe being installed in the Permian Basin

## 50% of US gas stations

1110

#### Red Thread™ IIA Dualoy™ fiberglass pipe

100 million+ feet installed to date

m. or W

#### Analyst Day 11/06/18 45

### 100,000,000+

#### Spoolable fiberglass pipe (ft)

## 1,000,000,000+

Jointed fiberglass pipe (ft)

## Chemical and industrial applications



## Marine and offshore applications

## Offis hore producedon

Floating Production Systems | Process and Flow Technologies Subsea Production Systems | XL Systems | Fiber Glass Systems



#### Trends

Digitalization replacing manpower
Subsea production
\$70s per barrel oil price
8 to 10 FPSO awards per year
Private equity backed developments
Brownfield and greenfield developments

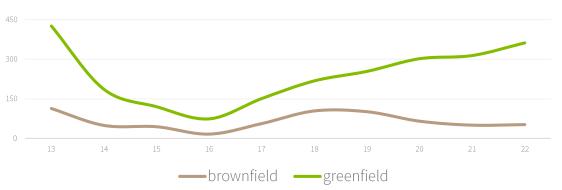
## \$650B - \$800B

2018 to 2022 Overall offshore capex estimates

NOY

#### Short cycle projects (next 2 to 3 years)

Increase in subsea activity and fixed platforms

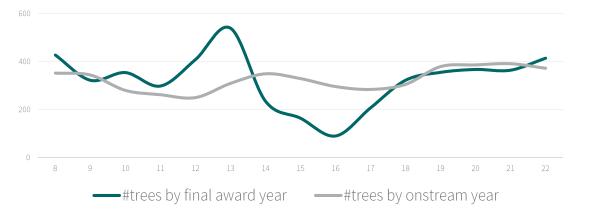


Subsea Tree Awards

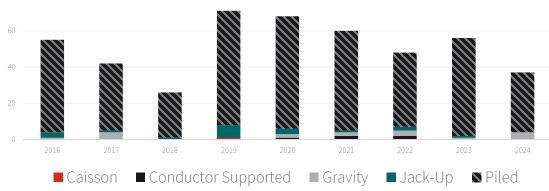
**'Subsea Tree Awards'** is used as the stand in for overall subsea activity here.

**'Brownfield'** refers to replacements and/or extension of the existing field. **'Greenfield'** includes well tiebacks to existing infrastructure located in different fields that are not currently onstream.

**Relevant 'Fixed Platform' Installations** – Y/Y estimates were recalculated based on production & injection topside configuration, includes new & existing platforms.





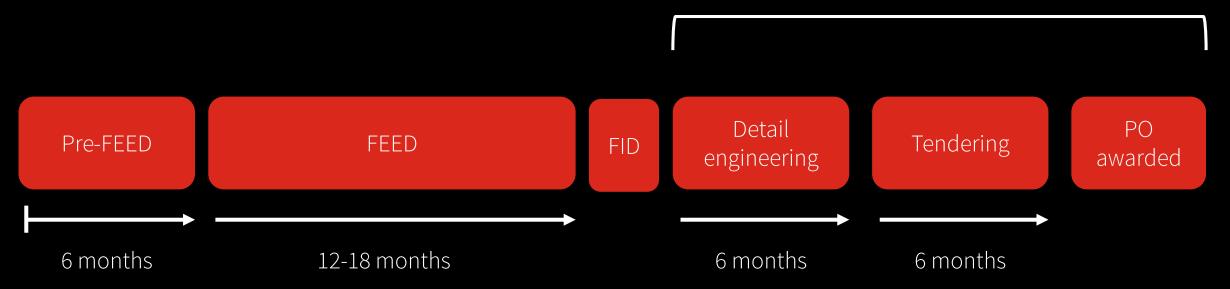


Sources: Wood Mackenzie, NOV analysis

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#### **Engineering and procurement lifecycle of an FPSO**

12-18 months from hull award to PO



Topside modules

## 3,000+

### Flexible pipe (ft) 7,043,963

Turrets

82 TECHNOLOGY

Seabox treatment units

NOY

Seabox ™

16

### Three things to remember

Continually growing our capabilities in the completion phase of the well

Major strides in our ability to provide solutions, not just products, in both the onshore and offshore production arena

The best days for Completion & Production Solutions are yet to come

