NABORS

TRRC Natural Gas Workshop:

Drilling Rig Natural Gas Technology

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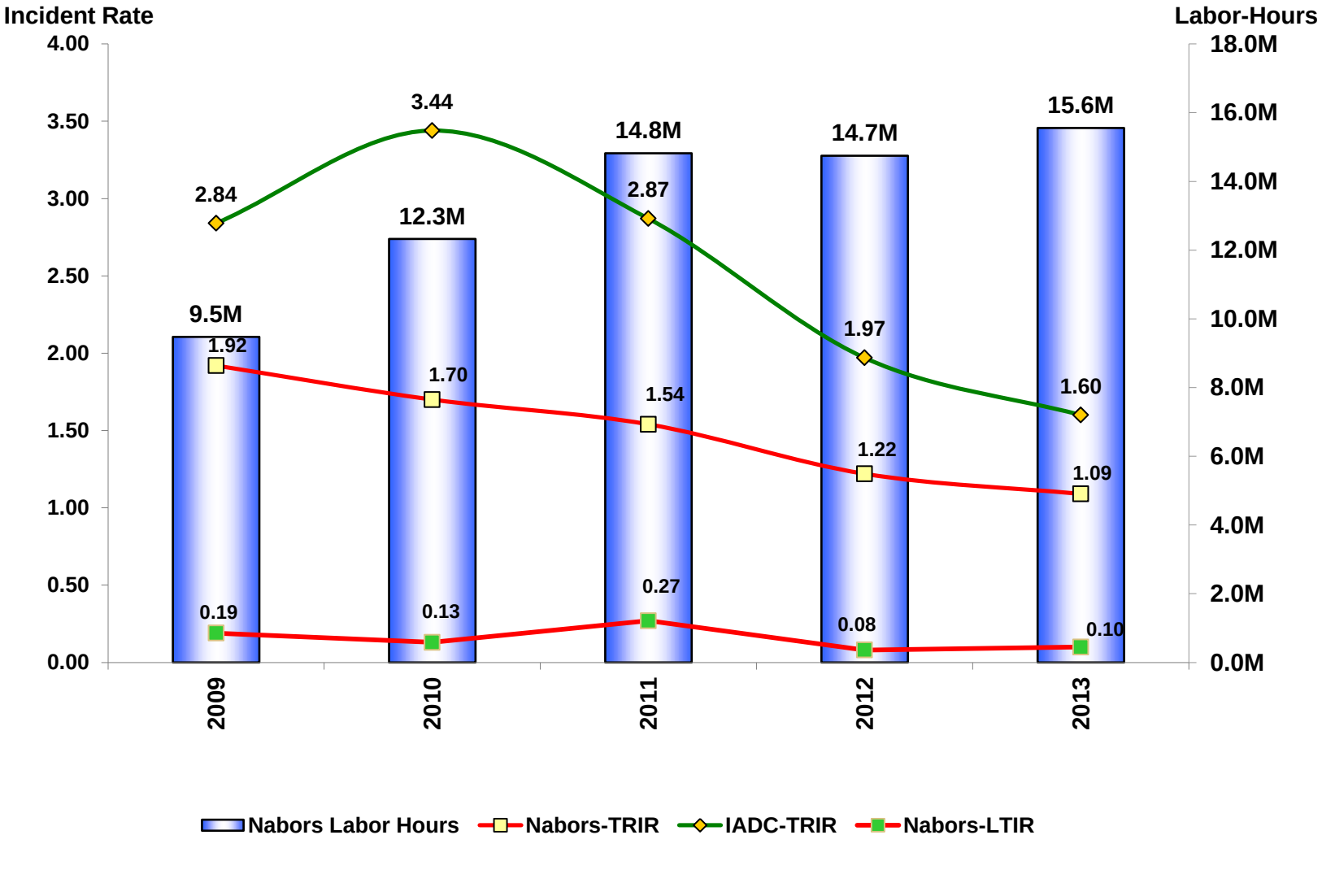
MISSION ZERO

Nabors is committed to the safety of our employees worldwide. We strongly believe that all our global operations can and must achieve our goal of zero incidents. We expect every Nabors employee to share this commitment as a condition of employment.

Anthony G. Petrello

Chairman, President & CEO

Nabors USA Safety Performance
2009 – 2013



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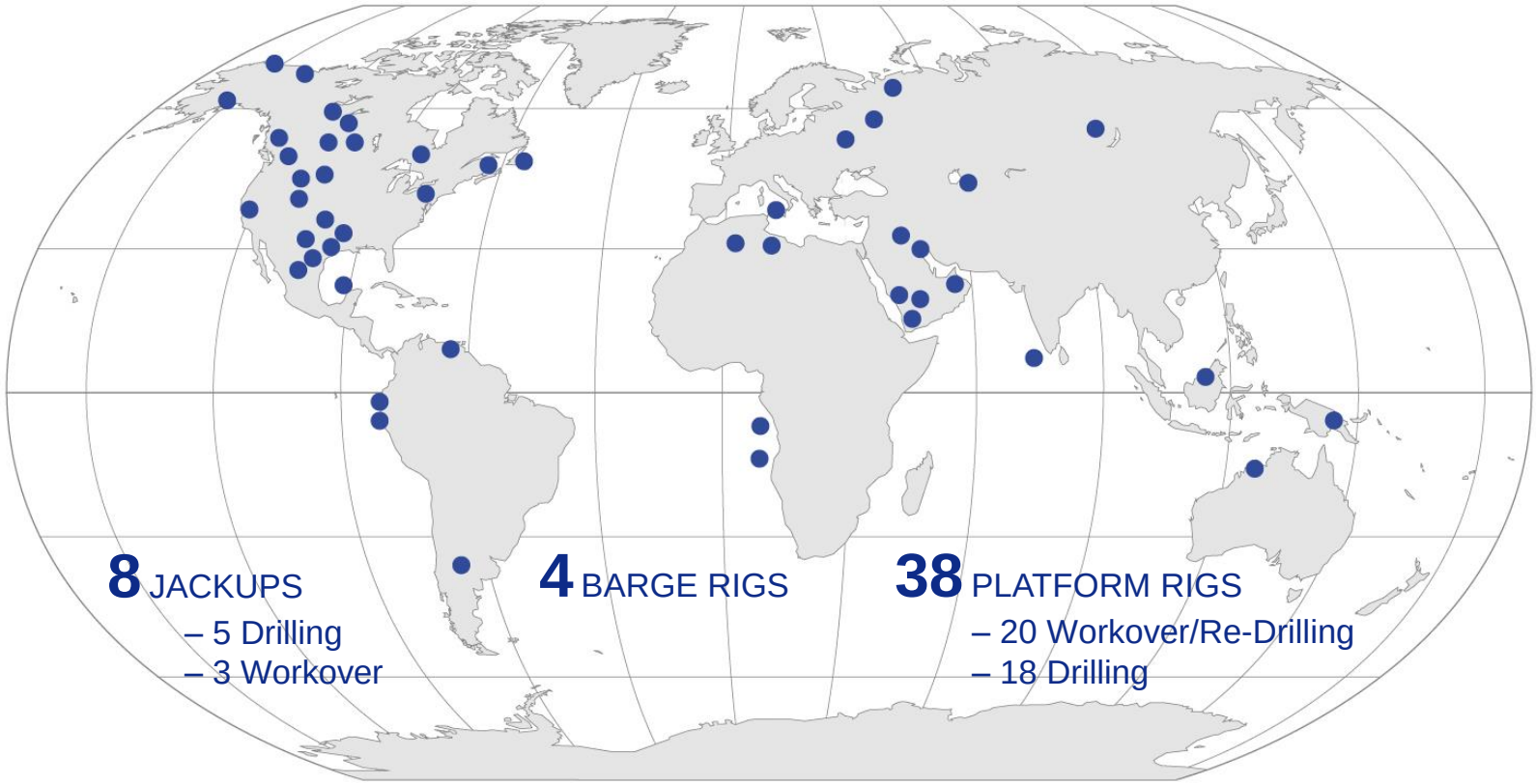
Drilling Rig Natural Gas Technology Overview

Worldwide Rig Fleet Status

Actively Marketed Rigs Only
As of December 31, 2013



8 JACKUPS
– 5 Drilling
– 3 Workover

4 BARGE RIGS

38 PLATFORM RIGS
– 20 Workover/Re-Drilling
– 18 Drilling

549 LAND WORKOVER RIGS

490 LAND DRILLING RIGS

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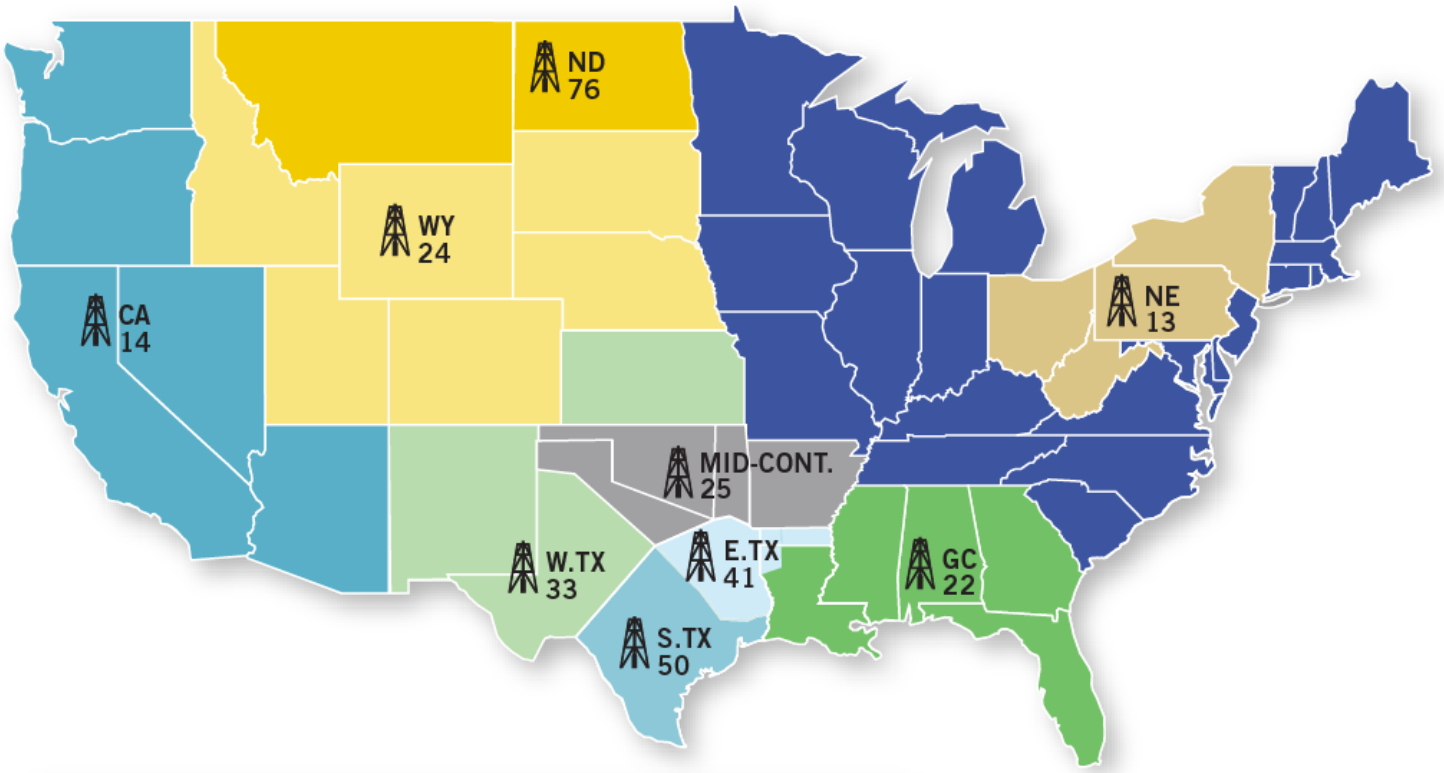
US Operations



Northern Division	2002	2012
California	8	14
Mid-Continent	3	25
North Dakota	9	76
Northeast	N/A	13
Wyoming	7	24

Southern Division	2002	2012
East Texas	20	41
Gulf Coast	6	22
South Texas	8	50
West Texas	8	33

Actively Marketed Rigs
As of September 30, 2012

A transition to alternative fuel- currently two methods

1. Dual Fuel- add-on to existing engines, 51 rig installations to date.

2. 100% Natural Gas- new engines, 2 rig installations to date (2013).

Natural Gas Supply- 4 current methods

1. Wellhead
2. Pipeline
3. LNG
4. CNG

Push Back to Natural Gas

- Supply concerns due to lack of reliable infrastructure.
- Safety concerns.
- Few first adopters.
- Concerns regarding return on investment.
- Technology and rig performance barriers.
- Lack of training and technical expertise on natural gas engines.

Natural Gas Safety

Natural Gas Safety

Natural Gas Safety

Engine Fire and Gas Detection Sensors

Gas Detector
Gas Supply Line
at Power House

Gas Detector
Front of #3 Generator

Gas Detector
Middle of #1 Generator

Gas Detector
Gas Supply Line
at Edge of Location

Gas Detector
Scrubber Skid and
Alert Systems Panel

Gas Supply Line
at Power House
Gas Detector

Flame Detector above each Generator
Set at 190 F.

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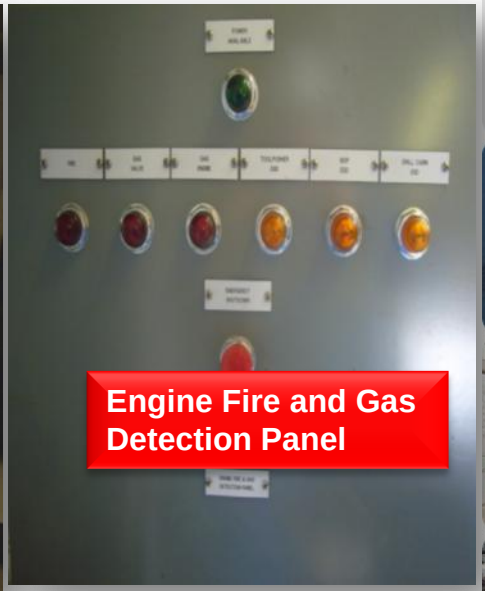
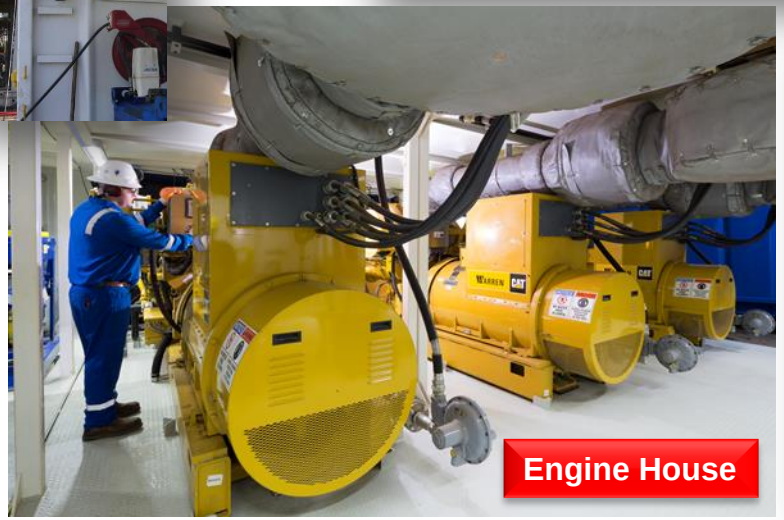
EMERGENCY SHUTDOWN DEVICES [ESD] LOCATIONS





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Economics

- **Primary business driver today for the drilling contractor is increased rig marketability.**

- **Dual Fuel System savings can be up to 70% yet average 40%. Substitution rate is expected to improve as OEM's enter market.**

Economics

- Current dual fuel rigs diesel consumption drops by approx. 1,000 gpd.
- DGE (Diesel Gas Equivalent) pricing of natural gas is roughly $2.10-$2.50 per gallon.

Forecast for the future (subject to change!)

- LNG facilities will become more prevalent, starting with the larger plays- Eagleford and Bakken.
- Frac spreads and trucking fleets will drive the conversion due to better economics. Drilling rigs will benefit as a result due to improved supply chain.
- Engine technology will improve, dual fuel will become a standard feature if the natural price remains low.

Forecast for the future (subject to change!)

- **Substitution rates will improve as the OEM's enter the market.**
- **As LNG facilities become more prevalent, 100% natural gas engine rigs will become more prevalent.**

Questions?