

# Improving Lives Through Affordable and Responsible Energy

Each year we set both safety and sustainability goals to keep us pushing towards a better outcome.

## Environmental Actively C.A.R.E. Goals

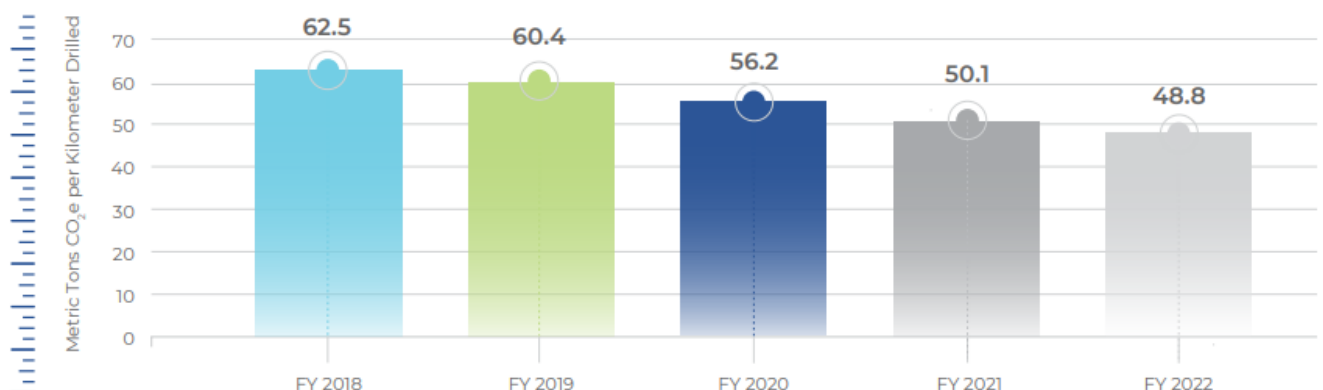
### 2023

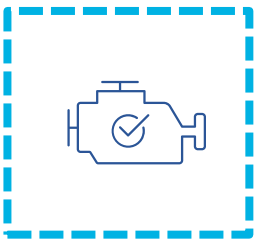
- Reduce the amount of GHG Emissions per drilled distance by 1% with a reach goal of 2%
- Implement Driller's Select on 100 rigs
- Achieve 80% of active rigs running below 30% average excess engine hours
- Achieve a completion rate of 98% for assigned GHG emissions training
- Improve winterization emissions measurement capabilities and build winterization roadmaps
- Validate emissions and fuel data with empirical testing

### 2024

- Expand, evaluate, and implement the opportunity sets required to meet the 2030 GHG emissions goal
- Improve excess engine hour precision
- Maintain all 2023 rigs under 30% and increase targeted efforts for rigs operating above 50% excess engine hours.
- Reduce fleet vehicle idle times by 25%
- Reduce volume of spills per 1000ft drilled by 15%

## NORTH AMERICA SOLUTIONS RIG ENGINES GHG EMISSIONS NORMALIZED BY DRILLING ACTIVITY





# Lower Emissions & Enhance Sustainability

## How does it compare to energy storage?

- Lowest cost/benefit solution

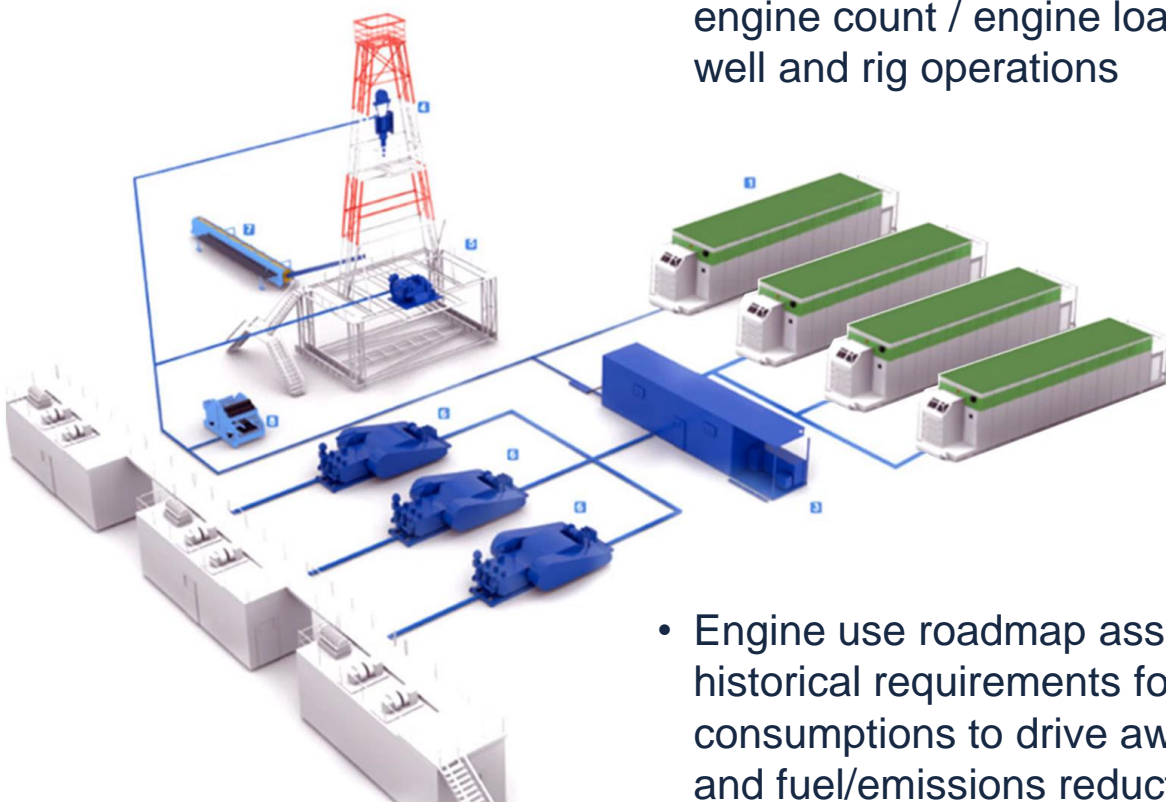
## Is this a universal solution?

- Applicable for all engine types
- Focused on people, processes and automation development
- The first step to more complex solutions

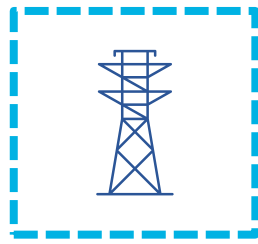
## How big is the need for improved engine management?

- Start with a baseline and identify opportunities for improvement

- Primary goal of safely optimizing engine count / engine load for well and rig operations



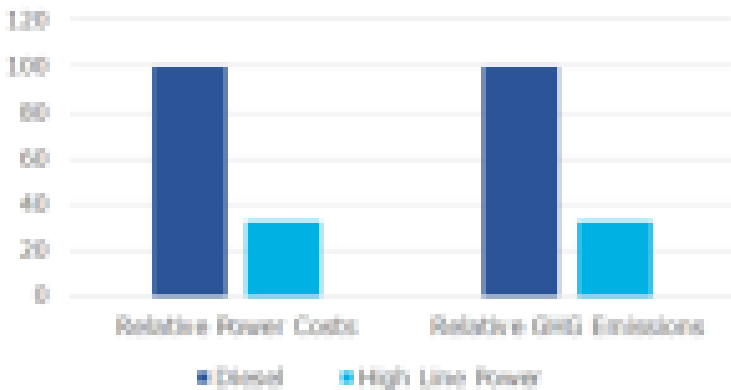
- Engine use roadmap assesses historical requirements for power consumptions to drive awareness and fuel/emissions reduction



# Highline Power Experience Overview

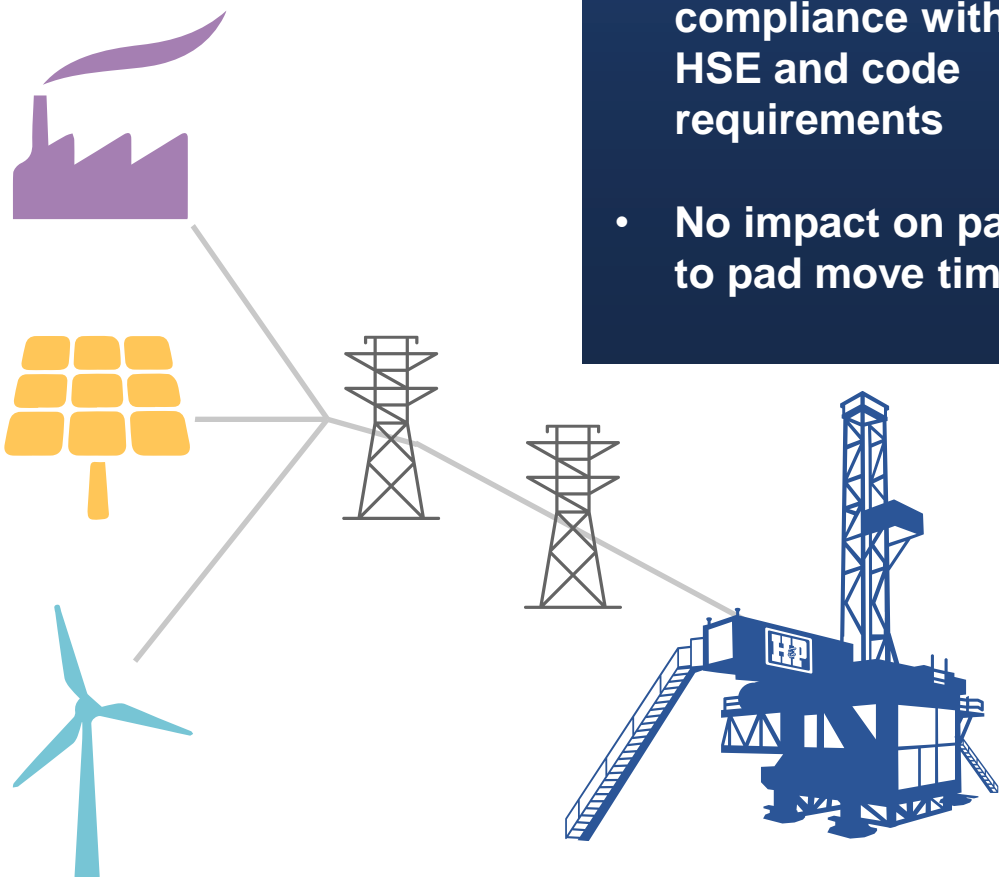
## HIGH LINE RIG SITE IMPACT ESTIMATES\*

(neglects cost of high line equipment)



1. Emissions and cost data limited to rig consumed power and excludes infrastructure costs
2. Cost and emissions savings will vary by region and well
3. Scope 1 emissions offset by lower Scope 2 emissions

- Nearly 20 years of experience drilling with highline power, over 1,000 executed wells
- Highline capable across the fleet
- High line design is compatible with utility voltages throughout U.S.
- High line design ensures full compliance with HSE and code requirements
- No impact on pad to pad move time



# TECHNOLOGY

Well-to-Well Optimization

- ▶ Performance Impacts Emissions
- ▶ Fewer Days on Well
  - Process Optimization
  - Reduced Trips
  - Reduced Cycle Time



Autodriller Pro Control System



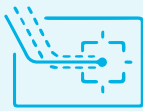
Automated Geosteering



Automation Sequencer



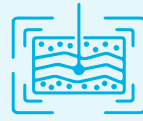
AutoSlide® Technology



Bit Guidance System



Digital Roadmap<sup>SM</sup> Technology



Advanced Well Engineering



FlexTorque® Technology



FlexB2D® 2.0 Technology



FlexOscillator® Technology



Engine Management



Formation Top Detection



Rig Floor Automation



Survey Management



# 88%

## performance improvement

Since 2014 in the three largest U.S. Unconventional basins

Consistent & Efficient Well Delivery

# Lower Emissions with Faster Drilling & Cut Trips Per Well



## Autodriller Pro Case Study

Increased ROP by 21% in the intermediate and 31% in the lateral

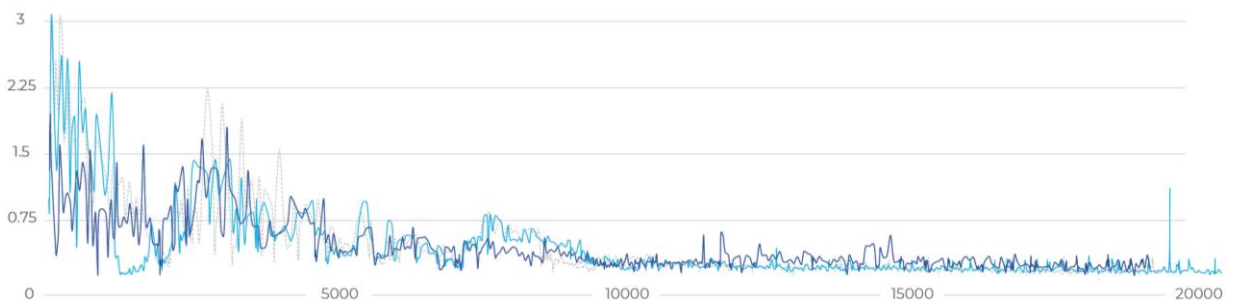
Reduced 16 hours in unplanned trip time

26% reduction in fuel and CO2 as a result of faster drilling and no unplanned trips

### AUTODRILLER

	KPI	Units	All	Intermediate	Build	Lateral
	Rotary ROP	(ft/hr)		283.8	196.8	210.3
	Drilling State - Rotary	(hr)	67.6	24.2	1.6	41.8
	Total Time	(hr)	225.9	102.6	19.5	103.8
	On-Bottom Time	(day)	<b>4.5</b>			

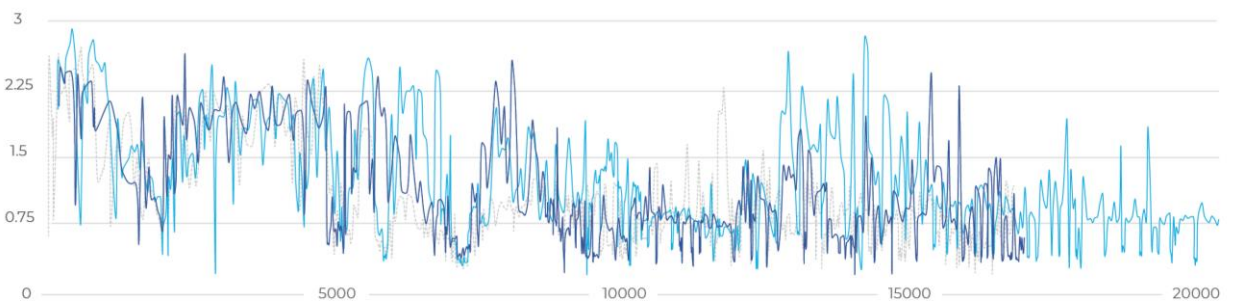
Average of Value by Depth



### AUTODRILLER PRO

	KPI	Units	All	Intermediate	Build	Lateral
	Rotary ROP	(ft/hr)		343.6	290.2	275.9
	Drilling State - Rotary	(hr)	51.0	17.7	0.8	32.5
	Total Time	(hr)	165.4	71.1	15.3	79.0
	On-Bottom Time	(day)	3.7			

Average of Value by Depth



### PERFORMANCE IMPROVEMENT

	KPI	Units	All	%	Intermediate	%	Build	%	Lateral	%
	Rotary ROP	(ft/hr)			343.6	21%	290.2	47%	275.9	31%
	Drilling State - Rotary	(hr)	51.0	25%	17.7	27%	0.8	48%	32.5	22%
	Total Time	(hr)	165.4	27%	71.1	31%	15.3	21%	79.0	24%
	On-Bottom Time	(day)	3.7	17%						
	On-Bottom Time	(hr)	3.7							