SmartPOWER™ Nabors South Texas Case Study

Objective

Reduce the emissions impact of drilling operations in South Texas by improving the fuel efficiency of diesel power generation systems.

Solution and Testing Procedure

A full well cycle used artificial intelligence (AI) technology to analyze real-time drilling data to predict the rig's expected power demand and automate the optimal number of generators required to meet the predicted demand.

As a result, the average number of engines required for operations has decreased, but the average engine load has increased, and power creation efficiency has increased. The results were compared to engine management key performance indicators (KPIs) from five previous wells prior to the automated engine management installation.

Results

Testing resulted in a 6% reduction in fuel usage, saving 2,314 gallons of diesel over the 16 operating days.

The 2,314-gallon fuel savings equates to an estimated reduction of 24 metric tons of CO_2e*, which is equivalent to driving an average gasoline-powered passenger vehicle 61,525 miles.

SmartPOWER technology lowered the average number of engines online during the test period from 3.4 to 2.9, delivering a 15% reduction in engine run hours.

Conclusion

SmartPOWER technology optimized the diesel power generation system by automating the number of generators needed to meet the forecasted demand, resulting in lower emissions, fuel usage, and engine run hours.

Case Study Details

Location: South Texas

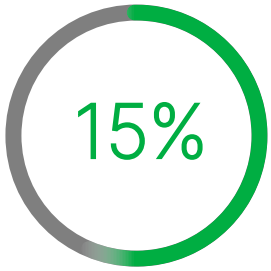
Timeframe: 3/21/23 – 4/6/23

Test KPI: Fuel & CO_2e Reduction

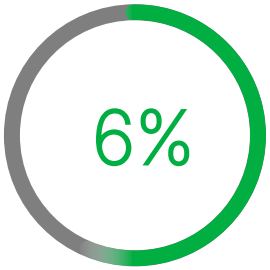
Rig Spec: Land Rig

Power Generation (4): CAT 3512

Results Overview



Reduction in Engine Run Hours



Reduction in Fuel Usage

Metric Ton's of CO_2e* Saved

*Sources:*Based on 2021 EPA GHG emission Factors. CO_2e (equivalent) is calculated by including the GWP of CH_4 and N_20 of diesel to standard CO_2 Diesel Fuel Emissions.*