

## MAXIMIZING EFFICIENCIES; MINIMIZING ENVIRONMENTAL IMPACT

### STEP's Bi-Fuel Solution:

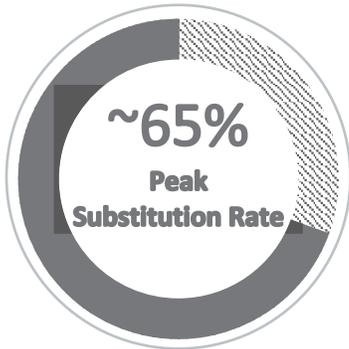
- STEP has the **LARGEST** bi-fuel fleet in Canada (97,500 HP)
- Peak substitution rate of 65% (diesel fuel is replaced with liquefied natural gas) without loss of hydraulic horsepower
- **REDUCES** carbon footprint
- Significantly **LOWERS** costs
- **CREATES** efficiency in operations

STEP Energy Services has Canada's largest fleet of bi-fuel hydraulic fracturing pumps and continues to expand its capabilities based on client demand. These pumps use a mixture of natural gas and diesel which reduces diesel usage, improves operational efficiency and minimizes the environmental impact. STEP approaches maximizing bi-fuel efficiency through the optimization of equipment layout on the project site, monitoring engine performance from the field and continually analyzing pump fleet metrics in the office. This ultimately leads to optimal bi-fuel substitution rates and a significant savings for operators.

**How much gas are you flaring? What is the environmental impact? How does it impact your stakeholders?**

Explore the **POSSIBILITIES** with bi-fuel:

- **Cost savings**
  - 40-60% substitution rates result in an approximate savings of \$10k/day or \$30-60k/well
- **Reduced CO2 emissions**
- **Consistent fuel supply**
- **Reduced "hot fueling"**



**OPTIMIZE** gas substitution while maintaining diesel **PERFORMANCE**



**REDUCE** overall fuel costs

### Bi-Fuel Operations:

Since February 2017, Shell has used bi-fuel pumps as a part of its stimulation programs. Because of STEP's expertise and experience with bi-fuel operations, Shell was able to achieve exceptional substitution rates on its last six well pad:

- Average substitution rate – 63%
- Highest rate – 69%

### Client Testimonial:

*"STEP has consistently delivered high natural gas substitution averages with their bi-fuel fracturing fleet – our last pad averaged 63% substitution while fracturing individual zones, peaking near 70% and delivering 50% substitution average over the entire operation. STEP's focus on maximizing bi-fuel efficiency has translated into substantial fuel savings to our fracturing operations."*

*-Shell Completions Superintendent, WCSB operations*