

# Machinery & Biofuels Task Group

The aim of the task group is to create a guide and webinar, to help FPS members improve this area of sustainability. We recommend the guide and webinar follow a what, why, how, measure approach to improving each area of sustainability. This means answering the following questions:

## 1 What?

What are the impacts of our current machinery and diesel? What are biofuels? What are the different types of biofuels? What are other key terms our members should know?

*E.g. You may want to define HVO fuels, NRMM directive (tier engines), hybrid power etc.*

Define the key priorities for this group

*E.g. Highlight best practices to eliminate or reduce machinery carbon emissions; highlight best practices to eliminate or reduce machinery particulate emissions;*

## 2 Why?

Why do low C / low particulate machinery and biofuels matter to geotechnical companies?

It may help to consider:

- Legislative requirements (including upcoming legislation) *e.g. low emission zones, NRMM*
- Any client requests you've received *e.g. HS2*
- Any evidence of efficiency savings
- Employee demand, investor demand etc

## 3 How?

How can geotechnical companies improve the environmental sustainability of their machinery?

This is probably the most important part of the guide / webinar. We are looking for best practices for our members to help improve the environmental sustainability of their plant. These best practices may include small 'quick-wins' for specific machinery, ways to factor in machinery emissions into decision-making and large-scale ways to optimise all machinery in geotechnical companies.

This means highlighting ways to reduce energy use, as well as ways to start using electric-, hybrid- and biofuel-powered machinery. It may help to think about how companies can eliminate machinery emissions completely or reduce emissions, before considering substituting fuels for greener alternatives. Please also include sufficient technical knowledge to help FPS members implement these improvements.

*Piling rigs are designed to last for many years, therefore a lot of piling rigs within the industry do not comply with the latest emissions standards. Can we retro-fit and/or fuel piling rigs different in order to comply with the latest emissions regs without having to buy new? You may want to consider different types of retro-fit, HVO, Green D+, onsite telemetry, standardized telemetry (such as machinemax)*

You are free to define the timescales for short-, medium- and long-term best practices.

### 3.1 Short-term best practices

- 'Quick wins' or efficiency savings with short payback periods
- Example may be training on anti-idling, or automatic cut-offs to reduce engine fuel use.
- What are the recommendations for what can be done to reduce emissions through engine retrofit?

### 3.2 Medium-term best practices

- Improvements with longer payback periods or processes that take additional infrastructure / training / additions to implement
- What are the recommendations for what can be done to reduce emissions through the use of alternative fuels?
- What are the recommendations for what can be done to improve data performance capture and performance?

### 3.3 Long-term best practices

- Improvements with no payback period, or require significant investment / changes to current practices

## 4 Measure

*What metrics should geotechnical companies use to measure / set targets for the machinery sustainability?*

You can't manage what you can't measure, therefore ensuring performance data is readily available and useful for all on-site plant will enable better awareness of the fuel performance on site.

It may help to think about different types of metric:

- Lag metrics *e.g. litres of diesel; % of all fuel that is biofuel; % of rigs that have tier 5 engines*
- Leading metrics *e.g. spend on X; % of site teams trained on Y*
- Absolute metrics *e.g. litres of diesel*
- Relative metrics *e.g. litres of diesel use per £m revenue (or per 100,000 hours worked)*

You may also want to consider what metrics would be most useful for FPS members to use when setting their own energy and fuel targets

## 5 Key outputs

- 'How to' guide that:
  - o What: Introduces the task group priorities & key terms
  - o Why: Explains why geotechnical companies should improve it
  - o How: Highlights short-, medium- and long-term best practices. This should also include any technical knowledge-sharing required to improve machinery sustainability
  - o Measure: Details potential key metrics to assess progress on machinery sustainability