

## Trainer Guide – Energy Efficiency

### Purpose of the Video

The purpose of the energy efficiency toolbox talk is to provide you with a free resource that can be used to help educate your employees on how to be more energy efficient, save money and reduce the impact on climate change from carbon emissions. It has two main aims:

- **To make you aware that there are many opportunities to reduce energy use; and**
- **Explain the benefits of being energy efficient for business and the environment**

### Introducing the Video

This toolbox talk is 100 seconds long and is designed to be used either within site induction materials or alternatively as part of your employee briefing process. Whilst it is a stand-alone resource, it can also be used as part of your wider communications and education strategy. E-learning modules on energy and carbon are available in the School if you would like to dive into the issue more deeply. The School also runs training workshops on carbon footprinting. Go to <https://www.supplychainschool.co.uk/uk/sustainability/construction/issues/climate-change/how-can-we-help.aspx>

If you are using the toolbox talk in a classroom setting or as part of a staff briefing session, it will be beneficial to get the group to consider the following questions:

- **Which plant and equipment use energy on site?** Get them to list out the machinery that uses energy. This will include generators, excavators, dumpers, whackers, fork lifts, dumper trucks, vans – anything with an engine or motor essentially. It will also include mains electricity. Get them to describe the different sources of energy and fuel: diesel, petrol, gas, electricity, batteries.
- **How can we be more efficient?** Discuss what we can do to minimise our energy use. This will cover issues like only running machines when they're needed – no idling or 'warming up'; choosing the right equipment for the job and running them at the optimum setting / load; maintaining and repairing equipment to keep it running smoothly; choosing a more efficient diesel such as GTL or HVO<sup>1</sup>, or even moving to alternatives that run on batteries or solar panels.
- **What are the benefits of being energy efficient?** Saving money by consuming less fuel; reducing CO<sub>2</sub> emissions and thereby reducing our impact on climate change; reducing emissions of the main air quality pollutants NO<sub>2</sub> and PM<sub>10</sub> and thereby reducing local air quality impacts on health.

### Key Messages

Once the video has been viewed use discussion and response to take the group through the following key messages:

**Key Message 1:** *We can all take steps to be more energy efficient*

This isn't necessarily about huge investment from senior management in new equipment. It is about us all taking small steps to be efficient in our everyday working lives – it can't be achieved by one person's actions alone. Think about how you can be more efficient in what you do and the equipment you use: turn off the lights if you're the last to leave the room; switch off the computer and printer every evening; don't leave your van idling to 'warm up the engine'; be proactive when you notice machinery not working properly – it probably means it's not being efficient and therefore needs maintenance; suggest where improvements can be made to management – they're not on site everyday and won't therefore notice the things you do.

<sup>1</sup> Gas to Liquid and Hydro-treated Vegetable Oil

**Key Message 2:** *Embed being energy efficient in the way you do with health and safety*

For an organisation to be energy efficient usually requires two key elements: equipment, and the people who use the equipment. Simply buying more energy efficient equipment is only one part of the story. Everyone who uses the equipment needs to know how to use it properly and efficiently, otherwise you'll not realise a large proportion of the potential efficiency savings. Therefore, make sure staff are trained in how to use the equipment efficiently. For some things, like automatic motion sensors for lighting, it's about setting them correctly for when they come on and how long they stay on for. For other equipment, like compressors, it's making sure the right equipment (its capacity or load) is used on the task and at the right settings. Once you have the equipment and the trained staff, it's then about instilling the right behaviours so it becomes as second nature to turn off the lights as it is to put on your PPE.

### Next Steps...

Once the toolbox talk has been completed the viewers should understand what energy efficiency is, why we should do it and how they can play their valuable part.

### Frequently Asked Questions

During the discussions you might expect questions such as the following:

- **Q:** *Aren't energy and carbon the same?*

**A:** *Using energy generally leads to carbon emissions (greenhouse gas emissions) which cause climate change. If you use a fossil fuel like diesel or petrol in your plant and equipment, the engine burns the fuel and turns it into CO<sub>2</sub> which is the main cause of greenhouse gas emissions. Using mains electricity also leads to CO<sub>2</sub> emissions, due to the fossil fuels burnt at power stations (mainly natural gas nowadays, but this is steadily getting less as more renewables such as wind and solar are coming online), whether directly via a plug, or from rechargeable batteries. If you get your energy from a clean, renewable source, such as solar panels, then there are no direct CO<sub>2</sub> emissions from the energy creation.*

- **Q:** *Aren't carbon emissions and air quality emissions the same?*

**A:** *No. although they both come from the combustion of fuels such as diesel, petrol, natural gas and LPG, carbon emissions are mainly in the form of CO<sub>2</sub>, which has an impact on climate change, warming the planet and leading to more frequent and severe weather events. Air quality emissions on the other hand are the release of combustion byproducts in the exhaust gases that have a local impact, mainly on peoples' health. The main two are nitrogen dioxide, NO<sub>2</sub>, and PM<sub>10</sub> (particulate matter, or 'soot' that is so fine it gets into your lungs and leads to long term chronic problems increased mortality).*