



net zero
CARBON

GUIDES AND INSIGHTS

4.1. Scope 1 emissions reductions



Scope 1 emissions reductions

Scope 1 emissions are direct emissions from the processes that an organisation itself controls. For an organisation to reduce its Scope 1 emissions, it targets the emissions coming from the assets it owns and operates.

This document will categorise emissions reductions in Scope 1 as technological, behavioural, and organisational.



Technological

Fuel switching

Fuel switching means substituting one energy source used in the organisation for another. For Scope 1 emissions reductions, a fossil fuel is substituted for a less carbon-intensive one, or the process that uses the fuel is electrified – shifting the emissions associated with it from Scope 1 into Scope 2.

Stationary combustion processes can be modified to run on biofuels. Biofuels have their own technical considerations though – from changing combustion temperatures to introducing new challenges for maintenance and reliability. These considerations are less important for biofuels being used in hot water heating for an office, but can have a significant impact on industrial heat. Fuel switching is also an opportunity for the new fuel to be used in a

combined heat and power (CHP) process, which greatly increases the efficiency with which the fuel is used.

Electrification of as many processes as possible is an attractive idea for reducing emissions because once the emissions from those processes have been shifted into Scope 2, they can be eliminated entirely by purchasing green energy. Even if green energy is not specifically procured, Scope 2 emissions are projected to fall over time as renewables continue to increase their share in the overall electricity mix. Electrification of heating for space heating purposes can be considered for an existing site or made a criterion in the selection of a new site when moving premises. Electrification of space heating as part of general heat decarbonisation is also a policy issue that the UK government is seeking to address in future new building regulations.

Perhaps the most important electrification projects undertaken today are those of vehicles. Transitioning to electric vehicle fleets is mandatory for businesses given the regulatory certainty of an eventual phase-out of internal combustion engine cars.

Building fabric changes

Increasing the overall energy efficiency of buildings allows them to consume less energy. This affects both Scope 1 and 2 emissions. Where Scope 1 emissions are produced to heat a building, the following can be considered to reduce heating losses:

- Insulation upgrades
- Roof replacements
- Double glazing of windows
- Reducing air leaks
- Upgrades to modern condensing boilers
- Upgrades to building management systems

These upgrades can be invested in or building energy efficiency can be made a criterion in site selection when an organisation is considering moving premises. Again, building regulations for energy efficiency are a key policy area for the UK government to address in the future.

Behavioural changes

Behavioural changes for reducing Scope 1 emissions relate to changing people's behaviour so that less of a fuel is consumed.

Behaviour change is a broad topic that affects everything from building energy use, manufacturing process energy use, and transport energy use. Methods to reduce energy use through behaviour change are also broad – supported by staff training and awareness raising, new signage, and incentive programmes. Up to half of the UK's progress towards meeting its 2030 energy efficiency targets have the potential to be met through **behaviour change**.

Organisational changes

Organisational changes in the business can affect Scope 1 emissions. By considering the business plan and the products being produced, energy use is affected.

The organisation can also affect how much of its value chain is within its direct control to influence Scope 1 emissions. For example, by outsourcing the logistics of the organisation, the Scope 1 emissions associated with logistics are shifted into Scope 3. It is possible that third-party logistics provide access to more efficient technology, reducing the overall emissions of the logistics component of the value chain.

A key challenge outsourcing introduces is the increased difficulty in clearly measuring environmental impacts. When a process is no longer under direct control, the data needed to derive its environmental impacts becomes more difficult to access. When considering outsourcing, a requirement for continued modelling of that process's emissions should be included. This might be through financial modelling or through mandatory reporting to the organisation by third parties in its value chain.

Other organisational changes are possible through employee policy, such as introducing flexible working arrangements that allow for employees to work remotely, thereby reducing the emissions associated with commuting and those associated with supporting employees in owned sites.

About Us

The UK has a net zero target for 2050. Businesses who are unprepared for it are exposed to long-term regulatory and reputational risk. If your business is looking to respond to the UK's 2050 net zero target, you're going to need a clear resource to help you through the complex process of developing and implementing a commercial decarbonisation strategy.

This is why Alfa Energy founded [netzerocarbon.com](https://www.netzerocarbon.com), the home of everything net zero you'll need. Along with our partners and industry collaborators, we will be bringing you a step-by-step guide to strategy development and implementation, regulatory and compliance developments, best practice advice and examples from industry experts and your peers, and roundups of ongoing stories in business decarbonisation.

We aim to provide you with a clear, straightforward approach to achieving net zero emissions and all you'll need to develop your knowledge and understanding of the opportunities to deliver this critical objective.

