

# BRIEFING NOTE: RELATING THE UK CLIMATE TARGETS TO PLANT-HIRE

This Briefing Note provides an overview of areas of the UK's 6th Carbon Budget that specifically relate to emissions from Off-Road Mobile Machinery (ORMM) used on construction sites. It suggests carbon reductions in the region of 47% by 2035 and 87% by 2050, compared to 2018.

The 6th Carbon Budget is a report put together by the Climate Change Committee, which was established under the Climate Change Act 2008 and advises the UK and devolved governments on reducing emissions and adapting to the impacts of climate change. They provide the scientific evidence-base behind the UK's commitment to reduce greenhouse gas emissions by 78% by 2035 relative to 1990, and achieve Net Zero by 2050, which would keep us aligned with the Paris Agreement (a legally binding international treaty on climate change).

#### The 6th Carbon Budget states that:

- "Emissions in this sector come from the combustion of diesel."
- "Multiple options are available to decarbonise ORMM, including electricity, hydrogen, and biodiesel."
- "The sector will likely require a mix of these abatement options, given the wide range of equipment that aims to meet specific needs."

This suggests that the focus for plant-hire should be on reducing diesel combustion. The following technologies are not specifically mentioned in the Carbon Budget, so we do not know what role the Climate Change Committee expect them to play for ORMM, but these can also help to reduce diesel consumption:

- Business efficiencies (through power management, telematics, AI, anti-idling etc.)
- Diesel hybrid (including Battery Energy Storage Systems / 'BESS')
- Fuel additives (that improve fuel efficiency)



Figure A3.3.d (overleaf) provides an insight into the scale of carbon reductions that are needed from ORMM. It shows reductions of around 47% by 2035 and 87% by 2050, compared to 2018. These projections are for the sector as a whole, so emission reductions for certain types and sizes of machine may vary.

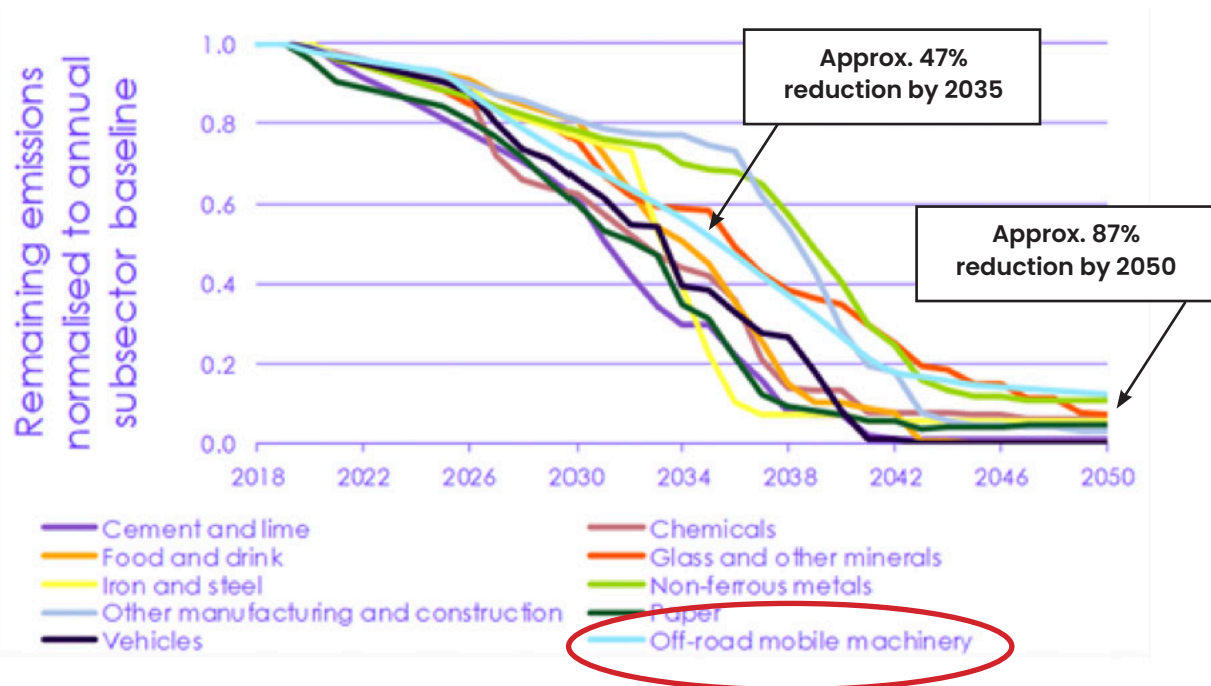
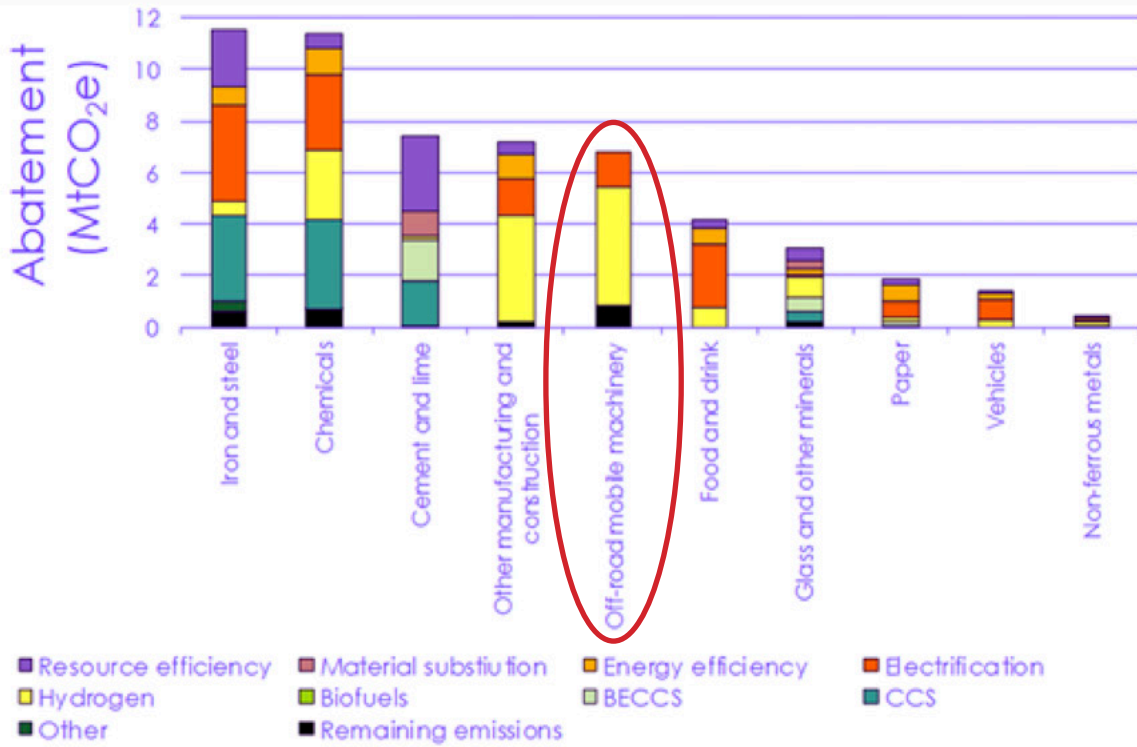
We are already on this journey. Regular diesel is blended with a small amount of biodiesel, and that biodiesel content has increased since 2018. Also, efficiencies in operation are a natural part of business development, and a variety of technologies specifically designed to reduce carbon emissions are being adopted proactively across the sector.

The Climate Change Committee recognise the difficulties in decarbonising this sector, and acknowledge that ORMM will be unable to completely decarbonise by 2050. They also recognise that decarbonisation of ORMM is dependent on infrastructure.

- "Decarbonising ORMM with hydrogen will require the development of a hydrogen infrastructure. Without hydrogen, reducing emissions would be possible, however access to electricity on construction and mining sites would need to improve."



**Figure A3.3.d**  
**Abatement and remaining emissions for manufacturing and construction subsectors in 2050**



Source: CCC analysis.

- “There could similarly be barriers in the uptake of electricity, as construction sites will need to accommodate space for battery swapping or connections to the electricity grid.”
- Future hydrogen (and alternative fuel) distribution plans should also consider the needs of off-road mobile machinery [...]. These are not typically located near clusters or with a grid connection.”
- “Sectors with larger numbers of sites, smaller sites and more dispersed sites decarbonise slower, such as [...] off-road mobile machinery.”

**Plant-hirers have very little control over this infrastructure and timescales are mostly speculative. This is one of the reasons why businesses are finding it difficult to make significant investments in electric and hydrogen. The Carbon Budget supports an approach that focuses on market availability:**

- “Biodiesel could play a role as a transition fuel to start decarbonising the sector, provided sufficient bioenergy is available.”
- “[Government] should set out a clear plan to develop near-zero emission off-road mobile machinery (ORMM) for applications where these are not yet available and increase deployment for ORMM applications where options are already available.”

It does not mention technologies which improve efficiency but do not achieve near-zero emissions. This may be due to a lack of awareness of these technologies at the time of writing, rather than dissuasion of those options.

Hydrogen is expected to account for the vast majority of emission reductions in this sector in the long-term especially for larger machinery, but infrastructure and green hydrogen supply is in its infancy. Some types and sizes of machine can switch to electric already, particularly small and handheld machinery, and machinery suitable for tethering.

Figure A3.3.d shows that by 2050 electrification is expected to account for around 20% of carbon reductions from off-road machinery overall, and around 13% will be unable to switch to either hydrogen or electric. The use of biofuels and adoption of various efficiencies could therefore have a role to play not just in the short term, but for decades to come.

These carbon reductions are not for the plant-hire sector to achieve alone. This sector is already experiencing serious financial pressures, with the transition to white diesel in the 2020 Budget and tax reforms in the more recent budget leaving very little headroom for investment.

Although in theory hydrogen and electric could lead to cost savings (as both technologies are more efficient than burning diesel) they are currently much more expensive to adopt than traditional options. It is not just capital cost and running cost, there are additional safety considerations to be made and site infrastructure to be assessed, which takes time, creating a staffing cost.

A diesel excavator is only a phone call away, but an electric equivalent can take much longer to arrange. There are additional costs for the depot as well, including infrastructure upgrades and re-training staff to use, maintain and repair these new machines. These investments need to turn a profit to be commercially viable, which can drive up the rental rate beyond what many customers are willing or able to pay.

It should also be noted that while larger companies can monitor their emissions quite accurately, smaller companies often cannot afford to treat this as an exact science. Monitoring carbon emissions (even without reducing them) currently involves business changes, staffing costs and consultancy fees that many businesses will struggle to absorb/implement.

The Climate Change Committee suggest that government work with industry to create a standard for whole-life carbon, mandatory disclosure and gradually minimum standards for different functions and uses. Such a standard has the potential to become extremely complex in this sector, which operates a vast array of machines and applications. Standardised reporting of the carbon emissions embodied in the manufacture of machines on the other hand, would be welcomed by buyers. This would not solve the issues of cost or infrastructure, but could help with challenges around calculating scope 3 emissions, and making informed decisions when purchasing or renewing fleet.

Financial incentives to cover the cost of reducing carbon is essential in the current economic climate, but it is unclear how government will fund their contribution due to the scale of support required.

The plant-hire sector consistently demonstrates that it will do what it can, when it can, but the transition has to make financial sense. If these businesses cannot turn a profit they will cease to operate, jeopardising government targets to build homes and Net Zero infrastructure.

The full Carbon Budget is available at [www.theccc.org.uk/publication/sixth-carbon-budget/](http://www.theccc.org.uk/publication/sixth-carbon-budget/)



## Construction Plant-hire Association (CPA)

The CPA represents over 1,900 businesses who are responsible for 85% of the construction plant used in the UK. The CPA is the leading trade association for the plant-hire sector in the UK, acting as the principal point of contact for all issues relating to the use of construction plant.

For more information, please visit the CPA website at [www.cpa.uk.net](http://www.cpa.uk.net)

The UK plant-hire sector is worth **£14bn** to the UK economy, responsible for **191,500 jobs**, and contributing **£218** to the UK economy for every **£100** spent by plant-hire companies\*.

### \*Oxford Economics/CPA Report

The Economic Impact of the UK Construction Plant-hire Sector is available to download at [www.cpa.uk.net/news/cpa-oxford-economics-report-available-to-download](http://www.cpa.uk.net/news/cpa-oxford-economics-report-available-to-download)



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