

## Key facts

- 1** Transport accounts for 9% of emissions from concrete and cement (2018 figures). Indirect emissions arising from the generation of electricity consumed by the sector represent 5% of today's emissions.
- 2** Electricity is vital for the decarbonisation of the cement and concrete sector and demand will increase as innovative decarbonisation technologies are deployed, but high UK electricity prices are a barrier to decarbonisation and must be addressed.
- 3** 87% of aggregates and 100% of asphalt and ready-mixed concrete are transported by road<sup>1</sup>, while 5 out of 10 cement plants have an active rail connection.



Transport and indirect emissions are two of the smaller contributors to emissions from the concrete and cement sector, but together they are not insignificant. These include emissions associated with the bulk transport of materials and product by road, rail and water.



## Transport

- The industry has a good track record on adopting new vehicle standards, whether Euro VI engines or safety requirements such as London's Direct Vision Standard. It is ready to switch to zero emission vehicles when they are available and when the fuelling or charging infrastructure is in place.
- HGV manufacturers are developing electric and hydrogen trucks, with a sales phaseout of 2040 for diesel trucks over 26 tonnes and 2035 for those under. Fleets turnover with time, and the industry will buy zero emission HGVs when they are commercially available and the infrastructure is deployed.
- On rail 'construction materials' are the largest single-type cargo on the network.<sup>2</sup> There are significant flows of aggregates on rail, with many of the largest quarries in England connected to the network and serving cities including London, Birmingham and Manchester, while 5 out of the UK's 10 cement plants have an active rail connection.
- Decarbonisation of maritime transport will be limited until new technologies move beyond the early trials of alternative low carbon fuels such as LPG and methanol. Additionally, progress will be slow unless zero-carbon ammonia are made available in the quantities required to power ships and at a competitive cost, with affordable conversion options.

1. British Geological Society, Aggregate Minerals Survey 2019 [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/1075214/AM2019\\_National\\_Collation-Final.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1075214/AM2019_National_Collation-Final.pdf)

2. ORR freight data portal <https://dataportal.orr.gov.uk/statistics/usage/freight-rail-usage-and-performance/>

# Transport and Indirect Emissions from Decarbonised Electricity

## Innovation in Action

MPA members Tarmac and Aggregate Industries are trialling UK firsts. Tarmac has begun operating a battery electric mixer truck from its Washwood Heath site in Birmingham, which is supplying essential construction materials to its customers across the West Midlands, while Aggregate Industries has two in London.

## Key policy enablers for transport

- 1 Government should tackle the sometimes very high, and unevenly distributed, costs from Distribution Network Operators to upgrade grid connections which will be needed for sites to transition to electric HGVs including concrete mixer trucks.**
- 2 In the event that HGVs end up using hydrogen fuel, it is essential that the infrastructure for fuelling is truly national, enabling remote sites to rely on supplies they need for Non-Road Mobile Machinery (NRMM) and HGVs.**
- 3 For construction rail freight to grow, action is needed to ensure that:**
  - There is enough capacity for freight on the network, with reliable freight paths
  - City centre terminals are protected
  - Production sites face more reasonable costs for new railheads.



Tarmac emixer at Washwood Heath

## Electricity and indirect emissions

- It is vital to recognise that the lowering of carbon emissions will increase energy use in our sector, as technologies are deployed to lower emissions in cement production and transport and NRMM are electrified. Carbon Capture, Usage and/or Storage (CCUS) is an electricity-intensive process that will significantly increase the industry's energy consumption but which will deliver significant CO<sub>2</sub> reductions.
- The UK has committed to decarbonise the electricity grid by 2035<sup>3</sup>, so even though the sector will be using more electricity than today it should produce lower or even zero emissions as a result.
- Cement production today is electricity intensive, with power required to crush quarried stone, grind materials to a fine powder, transport fuels and turn the kiln. All cement producers already purchase electricity through zero carbon tariffs, and some have renewable power generation on site. Further decarbonisation of the grid will enable more renewable power to be purchased across the concrete supply chain and reduce emissions further.
- UK industrial energy prices are some of the highest in Europe, with policy, network and balancing costs far higher than elsewhere. This is a challenge for UK sites competing for the very significant investments needed to decarbonise.
- MPA welcomes the announcement of the British Industry Supercharger aimed at reducing electricity costs by £20/MWh for cement producers. This support will help to bring UK support in line with that offered in other countries such as Germany.
- Even with this support, electricity costs for cement producers in the UK could remain higher because they do not receive any compensation for the indirect cost of CO<sub>2</sub>, which includes the additional UK-only tax cost arising from the Carbon Price Support (CPS). MPA welcomes the UK Government's announcement to review the CPS and hopes that this will result in it being abolished.



3. <https://www.gov.uk/government/news/plans-unveiled-to-decarbonise-uk-power-system-by-2035>

# Transport and Indirect Emissions from Decarbonised Electricity

## Barriers to decarbonisation

Electricity distribution grid upgrades, or at some sites an entirely new grid connection, can be extremely expensive and can take months, if not years, to negotiate. Distribution Network Operator costs are a real obstacle.

If hydrogen emerges as the replacement for diesel, a whole new distribution and storage network will be needed, covering all sites from small sand and gravel pits to the biggest quarries and cement plants.

The concrete and cement sector's products support the decarbonisation of the grid, with significant demand for its products as well as aggregates for delivering new nuclear and renewable generation and supporting the electricity grid infrastructure.

Some MPA members have installed onsite renewables and anaerobic digestors, but have often found the process difficult, with planning obstacles and economic

disincentives. Others have unsuccessfully sought planning permission for solar or wind generation. With the long term shift away from diesel, increasing onsite renewables would be a particularly helpful approach for remote sites without a grid connection that should be encouraged, not blocked by the planning system.

## Key policy enablers for indirect emissions

- 1 Deliver a fully decarbonised grid at fair cost, addressing the elements of the UK's higher industrial energy costs that derive from UK policy choices.**
- 2 Tackle the excessively high cost of distribution grid upgrades or new connections which is a huge barrier to investment in new sites but also in converting existing processes to electricity for transport or production.**
- 3 Encourage on-site renewables through the planning system to enable the industry to fully play its part in decarbonising the UK's electricity supply.**



UK Concrete is part of the Mineral Products Association, the trade association for the aggregates, asphalt, cement, concrete, dimension stone, lime, mortar and silica sand industries.

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