

Press Release—10 October 2017

Decarbonising the global steel and cement sectors calls for more than zero carbon fuels—now

Deploying current technologies to decarbonise the steel and cement industries is likely not sufficient to meet the Paris Agreement's 1.5°C limit, according to a new Climate Action Tracker (CAT) study released today.

The steel and cement industries both have large emissions profiles. In 2015, around five percent of worldwide greenhouse gas emissions came from the steel industry—accounting for around 2.8 gigatonnes of CO₂ equivalent (GtCO₂e) per year. Cement-related emissions have nearly doubled their share of global greenhouse gas emissions—rising from 2.8 percent in 1990 to 5.5 percent in 2010, reaching more than 2.6 GtCO₂e per year.

Decarbonisation of our energy system, (i.e., the transition towards net-zero CO₂ emissions), can be achieved through higher energy efficiency, a zero-carbon electricity supply, electrification of residual demand, and zero-carbon fuels.

While these measures can set the [buildings](#) and [transport](#) sectors onto an emissions pathway compatible with the Paris Agreement's long-term temperature goal, this is not sufficient for industry, especially in steel and cement production.

The analysis finds that improvements in efficiency, decarbonisation of the energy supply for both steel and cement and a move towards circular value chains can lead to significant emissions reductions. CAT's latest study found that the combined effect is estimated to be an around 30%–50% reduction compared to current trends by 2050. This is a good start, but not the near-complete decarbonisation required for the Paris goal by around 2050.

"In short, emissions from these industrial processes are a difficult nut to crack, as large chunks of them are not related to conventional fossil fuel combustion," said Sebastian Sterl of NewClimate Institute, one of the lead authors of the study.

The CAT looked at three different scenarios for the steel and cement industries, using country case studies for the EU, China and Nigeria. One scenario follows current trends, one represents a shift towards decarbonisation of the energy supply, and one represents steps towards circular value chains.

"To reach the Paris Agreement's goal of net zero emissions by the second half of this century, we will need solutions for both of these industries, including increased R&D into innovative, low-emission production processes such as routes using carbon capture and storage (CCS) or renewables-based hydrogen," according to Lindee Wong of Ecofys, a Navigant company.

"It will also require a shift to using materials more efficiently, as well as substitution with lower emissions-intensive alternatives," added Dr. Ursula Fuentes of Climate Analytics.

Previous publications in the CAT Decarbonisation series focused on [transport](#), [buildings](#) and [power](#).

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The Climate Action Tracker is an independent science-based assessment that tracks the emission commitments and actions of countries. It is a joint project of the following organisations:

Climate Analytics

Climate Analytics is a non-profit institute based in Berlin, Germany, with offices in Lomé, Togo and New York, USA, that brings together inter-disciplinary expertise in the scientific and policy aspects of climate change with the vision of supporting science-based policy to prevent dangerous climate change, enabling sustainable development. Climate Analytics aims to synthesise and advance scientific knowledge in the area of climate, and by linking scientific and policy analysis provide state-of-the-art solutions to global and national climate change policy challenges. Contact: Dr. h.c. Bill Hare, +49 160 908 62463

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NewClimate Institute

NewClimate Institute is a non-profit institute established in 2014. NewClimate Institute supports research and implementation of action against climate change around the globe, covering the topics international climate negotiations, tracking climate action, climate and development, climate finance and carbon market mechanisms. NewClimate Institute aims at connecting up-to-date research with the real world decision making processes. Contact: Dr. Niklas Höhne, +49 173 715 2279

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