International Energy Agency

How to jump start industry decarbonisation

Kathleen Gaffney

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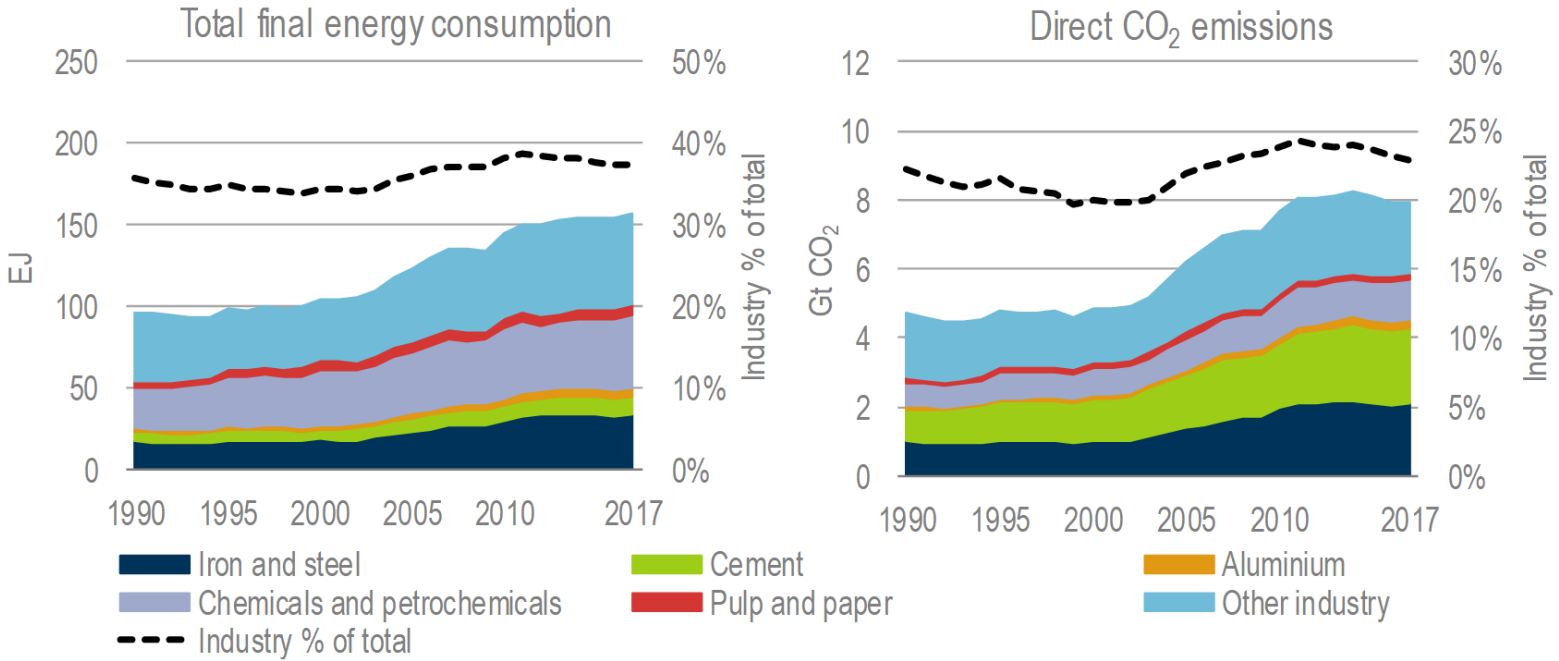
Outline of the discussion

- Current trends in industry energy use and CO_2 emissions
- Impacts of Covid-19
- Key measures to ‘jump start’ decarbonisation in industry

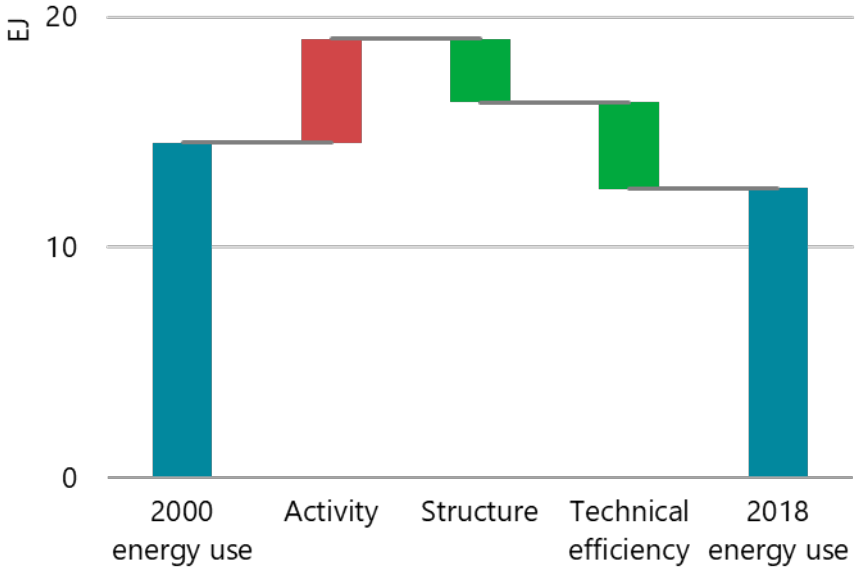
Industry contributes a large share of global energy use and CO_2 emissions



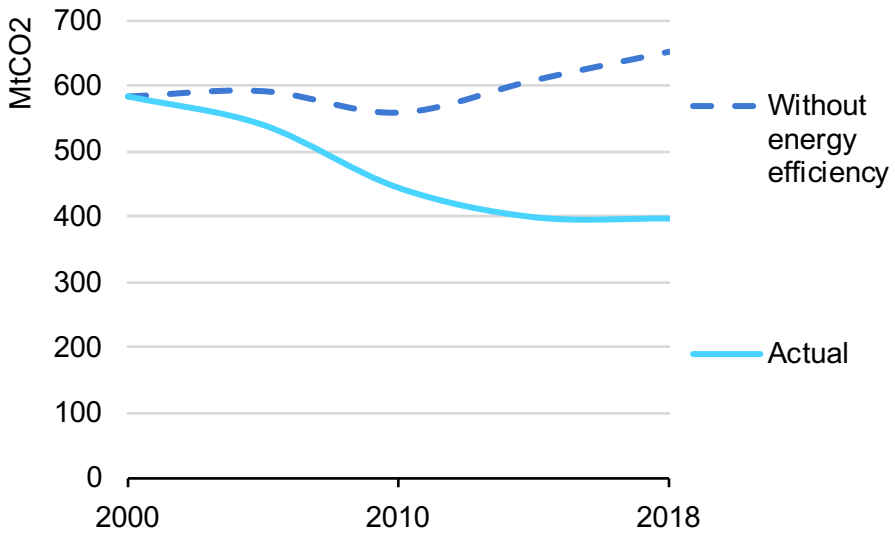
Industrial total final energy consumption and direct CO_2 emissions have grown more than one and a half times over the last 25 years.

Energy efficiency has delivered decarbonisation benefits

Energy savings from Europe's industry sector from 2000 to 2018

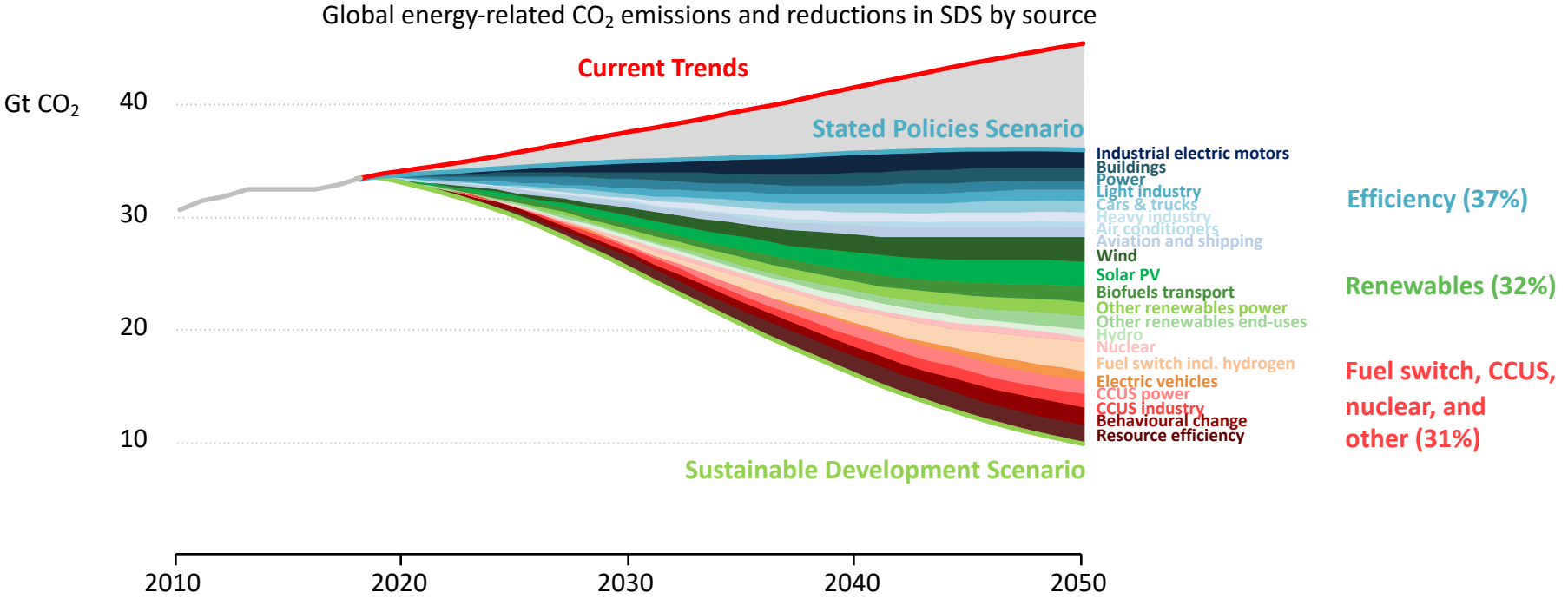


Europe's industry CO2 emissions from 2000 to 2018



Energy efficiency improvements in Europe's industry sector since 2000 have saved 255 MtCO2 emissions and 4 EJ of final energy use.

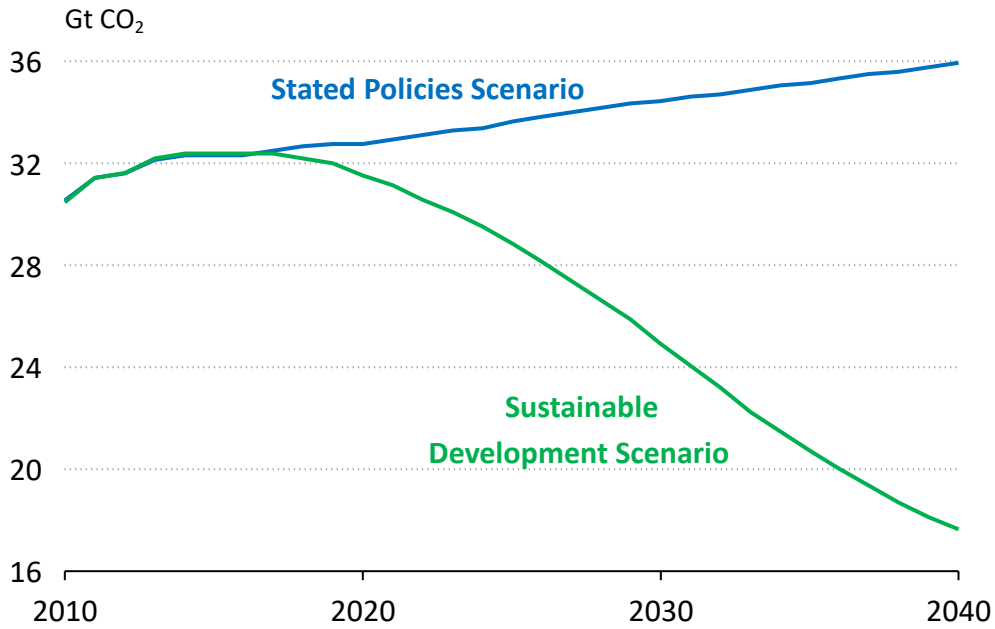
No single or simple solutions to reach sustainable energy goals



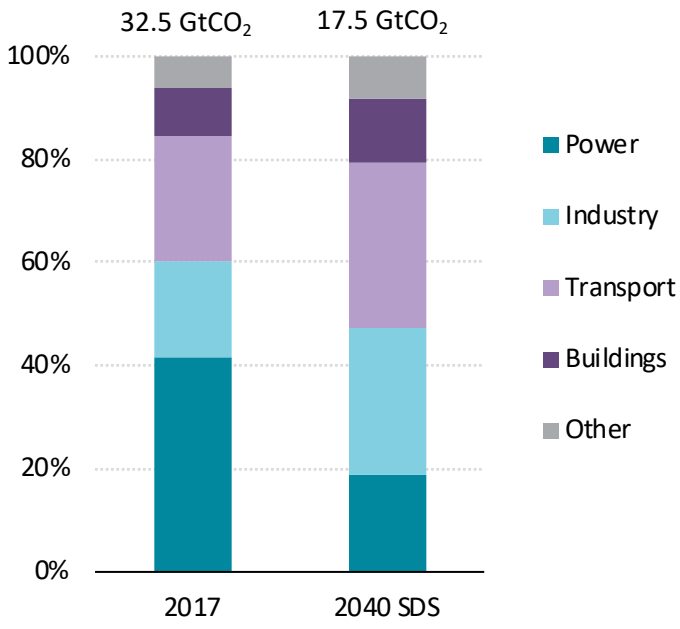
A host of policies and technologies will be needed across every sector to keep climate targets within reach, and further technology innovation will be essential to aid the pursuit of a 1.5°C stabilization.

What is the contribution from industry?

Global energy-related CO_2 emissions and reductions in SDS



Emissions reductions by sector



Industry could deliver almost 30% of the CO_2 emissions reductions by 2040.

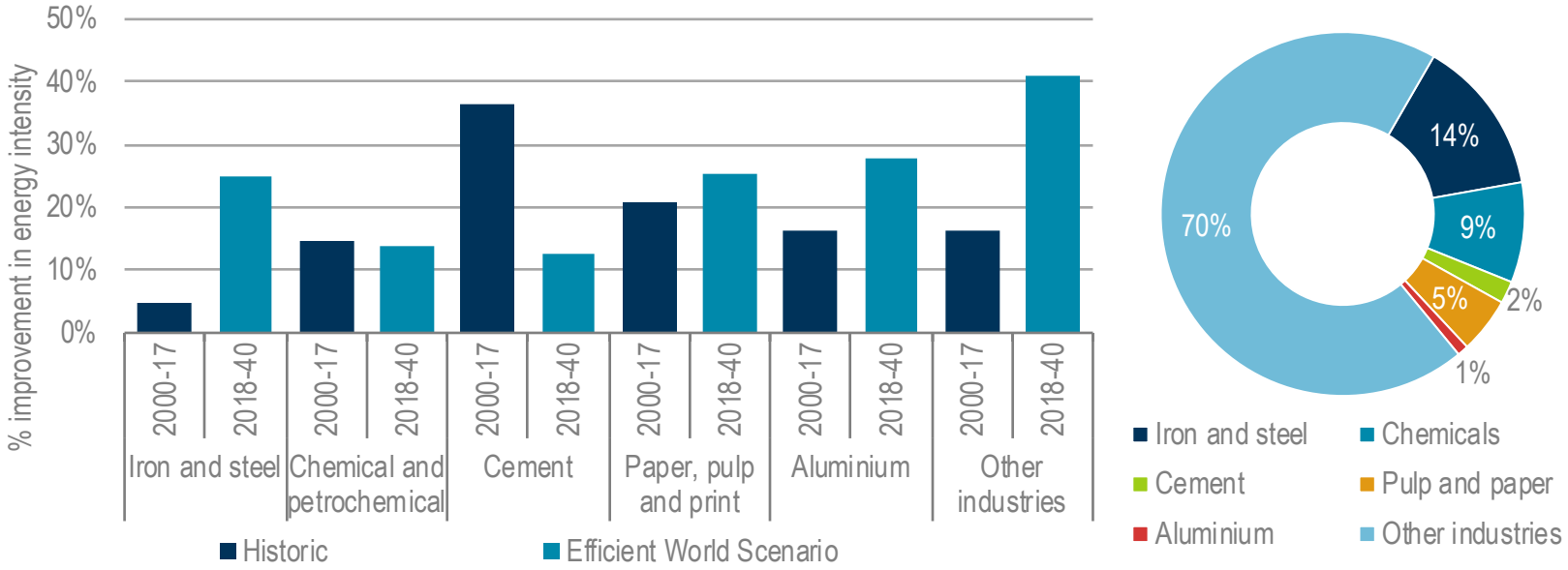
Impacts from Covid-19 and key stimulus measures

- Sharp slow-down in industrial activity around the world
- Globally, demand growth for materials has been hit by
  - Sudden halt in construction and related activities
  - Downturn in future projects
  - Delays in plant upgrades
  - Idle capacity or accelerated retirement
- Impacts disproportionately felt by small and medium enterprises (SMEs) in industry

- Key policy measures for recovery efforts
  - Energy efficiency and electrification
  - Waste and materials recycling

Efficiency delivers immediate benefits across industry sub-sectors

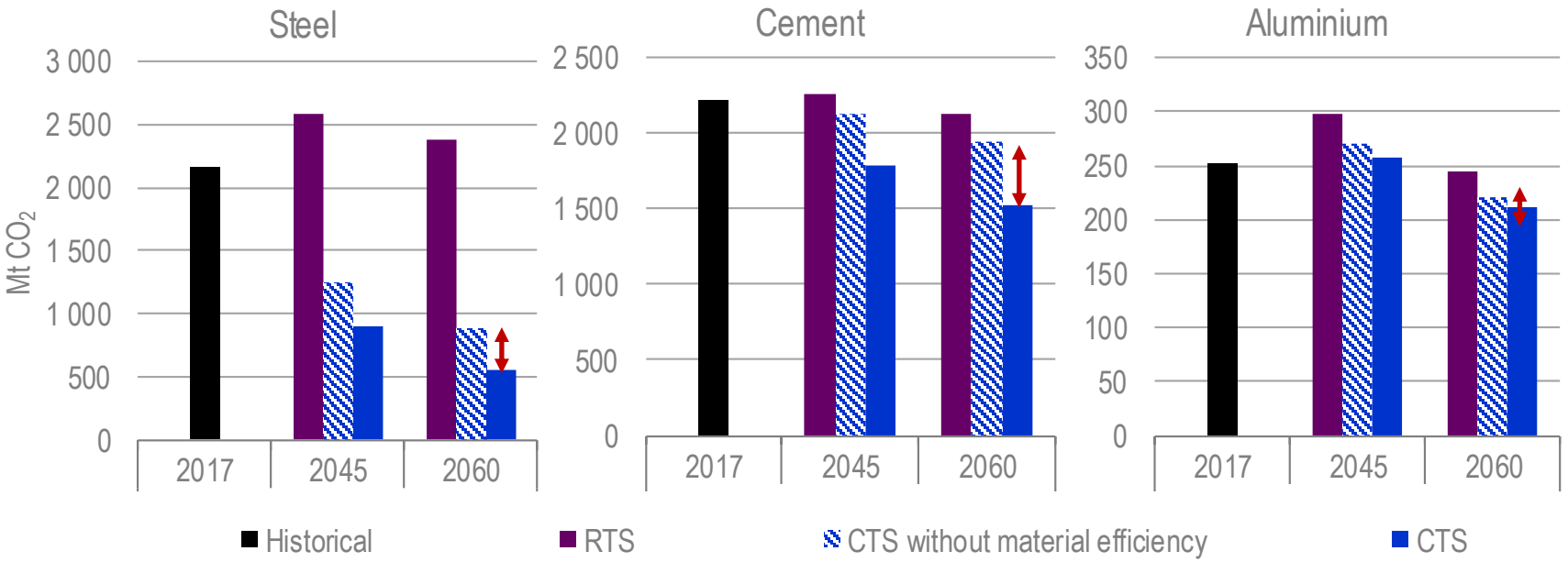
Percentage improvement in energy intensity by industry sub-sector (left) contribution to total energy savings in 2040 (right)



Globally, energy efficiency brings a bit more than one third of CO_2 emissions reductions in industry by 2040.

Material efficiency can also quickly reduce industry emissions

Direct CO_2 emissions from steel, cement and aluminum production

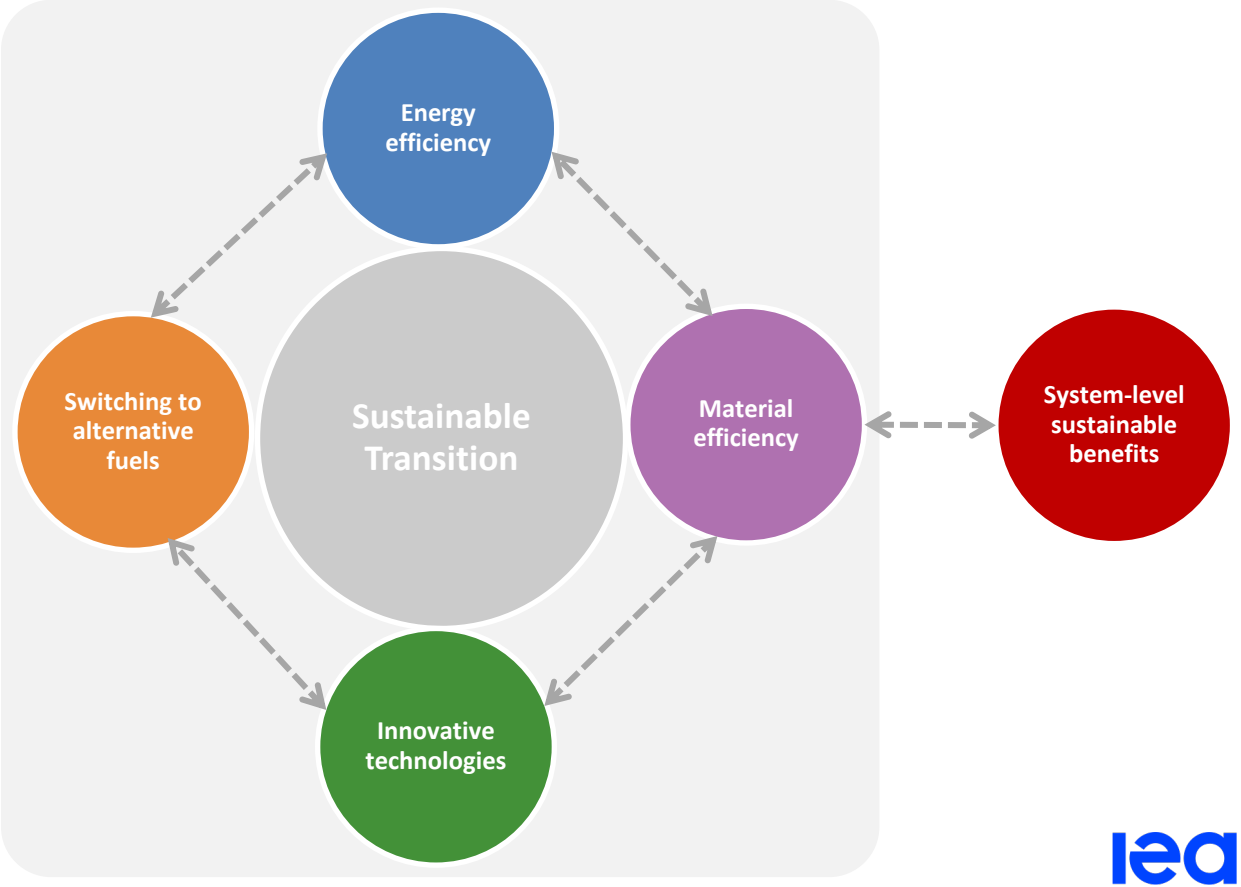


Material efficiency accounts for approximately 30% of the combined emissions reduction for steel, cement and aluminum in 2060

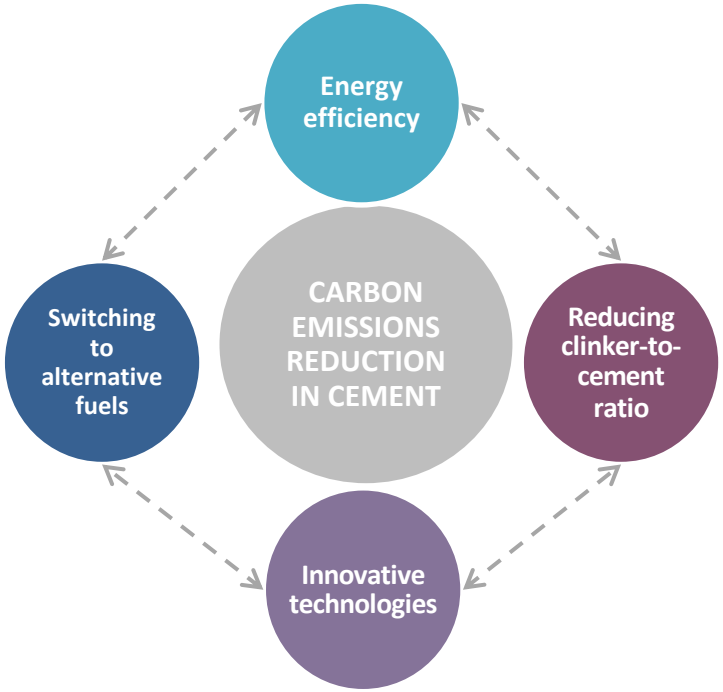
For full decarbonisation, all mitigation levers will be required…

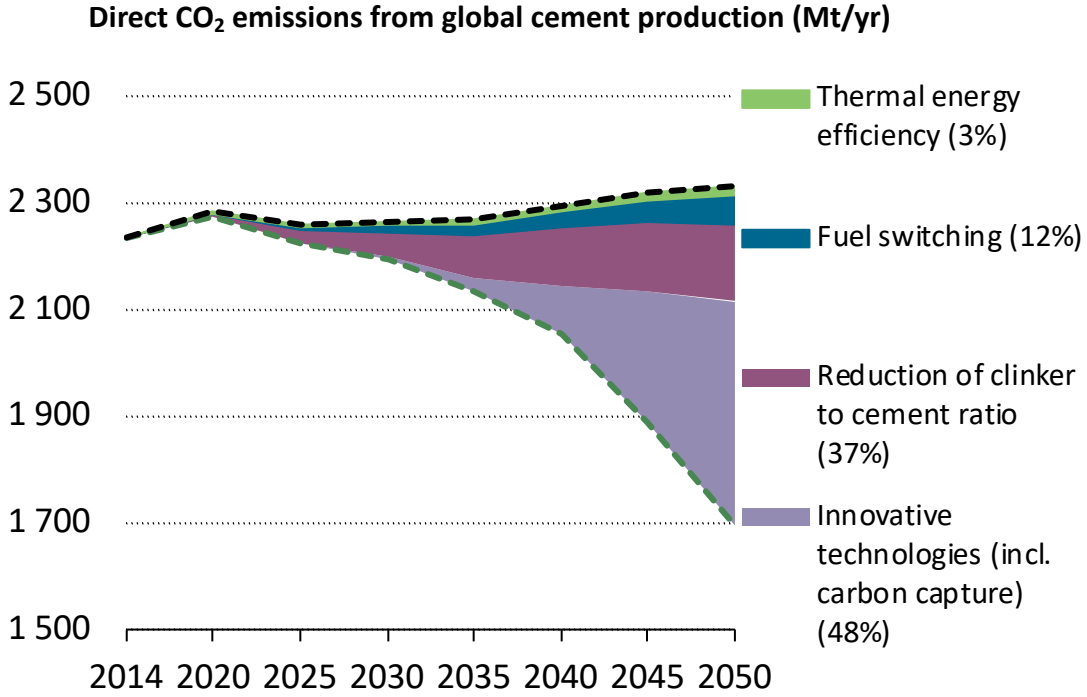
Sustainable transition goals:

- Environmental sustainability
- Energy security
- Least-cost transition pathways
- Synergies between sectors



Strategies to reduce CO_2 emissions from cement production

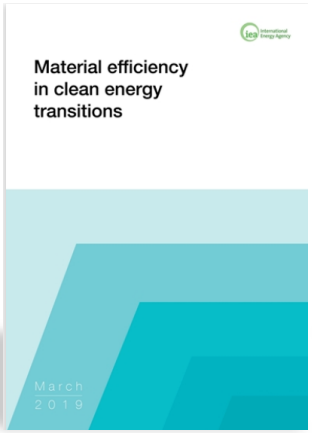


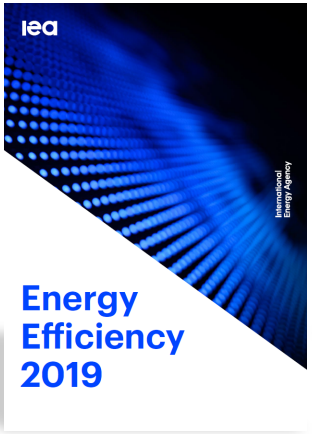


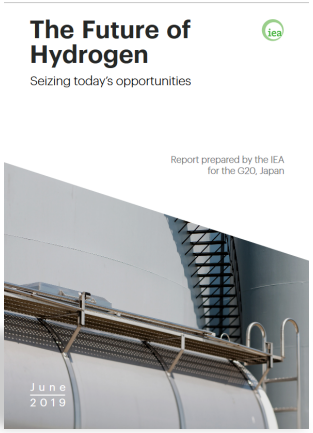
The equivalent of almost 90% of today's direct global industrial CO_2 emissions are cumulatively avoided from cement production

Exploring key “spots” in global energy

Recent publications







The IEA is shining a light on the major areas of the energy system that need to be combined to ensure a clean transition, with considerable focus on the industry sector.