Importance is often underestimated for statistical reasons:
- Process emissions
- Part in transformation sector (steel, petrochemicals, refineries)
- Non-energy use (feedstock) and related emissions

¾ of industry emissions come from materials commodity production,
¼ from other industry

There are currently few or no economically viable emission reduction solutions at scale available for sectors such as iron and steel making, cement production, chemicals and petrochemicals production

These sectors require new technology solutions to be developed and commercialised quickly
By 2050, total energy-related CO\textsubscript{2} emissions will need to decrease to below 10 Gt

- CO\textsubscript{2} emissions from the power and buildings sectors will be almost eliminated
- Industry and transport would be the main sources of emissions in 2050

- CO\textsubscript{2} mitigation potential for Industry = 9.5 Gt CO\textsubscript{2}/yr in 2050 (energy + process)
- Average CO\textsubscript{2} mitigation cost for Industry = 81.7 USD/t CO\textsubscript{2} in 2050
CO₂ emissions reductions in REmap compared to Reference Case by technology, 2050

A mix of technology options is needed in Industry, including renewable energy.
Strategies to deal with industrial emissions and their potential

• Energy efficiency – important but limited potential
• Recycling/cascading – important but limited potential (waste availability in growing markets)
• New types of materials and products (limited by standards, consumer acceptance, cost)
• Carbon capture and storage (especially for cement and iron making, some petrochemical/refinery processes)
• Renewables (biomass feedstock, electrification with RE electricity, solar thermal)
• Corporate sourcing – eg Norsk Hydro recent contract for Swedish wind farm
• Industry can relocate to facilitate RE deployment (e.g. aluminum smelters next to remote hydro plants, bioethylene plants in Brazil etc.)
• Industry and demand-side management (example primary aluminum smelter acting as a virtual battery)

• Policy issues: policy uncertainty, competitiveness, carbon leakage. A global sectoral approach is needed