

PROJECT PROGRESS

Overview of Energy Intensive Industries in Europe

Europe has decided that by 2050 will have to succeed in fully decarbonising the industrial European sector fulfilling the ambition for carbon neutrality. Time is short, with 2050 only one investment cycle away, and any further delays will hugely complicate the transition. As the EU ponders its industrial future, this transformation should be a clear priority. Resource and energy-intensive industries hold a central place in this vision.

The production of key materials and chemicals –steel, plastics, ammonia and cement – emits some 500 million tons of CO₂ per year, 14% of the EU total. Materials needs are still growing, and on the current course, EU emissions from these sectors might increase as well. Globally, these emissions are growing faster still, already accounting for 20% of the total. The EU needs to lead the way in combining the essential industrial base of a modern economy with the deep cuts to emissions required to meet climate targets.

The European industry consists of many different industrial sectors that need electricity and heat for their production processes. During these processes, CO₂ emissions are produced mainly due to fuel combustion, due to the production of required electricity but also due to (i) process emissions, (ii) fuel combustion, but also due to (iii) the production of required electricity. In this regard, several actions can be applied towards the decarbonization of Energy Intensive Industries:

- (i) Process emissions are inevitable and the most effective solution is the use of Carbon Capture Storage and Utilization (CCUS) techniques.
- (ii) The emissions produced from fuel combustion could be avoided by switching the fuel mix with fuels that are not contributing to the carbon footprint, such as the use of biomass or biofuels.

iii) Regarding the emissions related to electricity, one potential measure is the use of electricity produced by Renewable Energies (e.g. solar, wind etc.). These solutions are a general approach, however, each sector has its unique particularities.

The zero-carbon transition of heavy industry is not only feasible but also beneficial for companies. By embracing more climate-friendly practices they can ensure their long-term competitiveness in a world that is inevitably moving towards a climate-safe future. New ways of thinking, from a circular economy to a technological shift with breakthrough solutions are necessary to completely transform the way these sectors work and produce.

Such a transformation, however, is costly and risk-intense, and will not take place without smart and committed public policies. Governments' support will be vital to bolster industry innovation: they can reduce the risks and capital costs of low-carbon projects, create markets for new products through public procurement, and they must avoid regulatory misalignment.

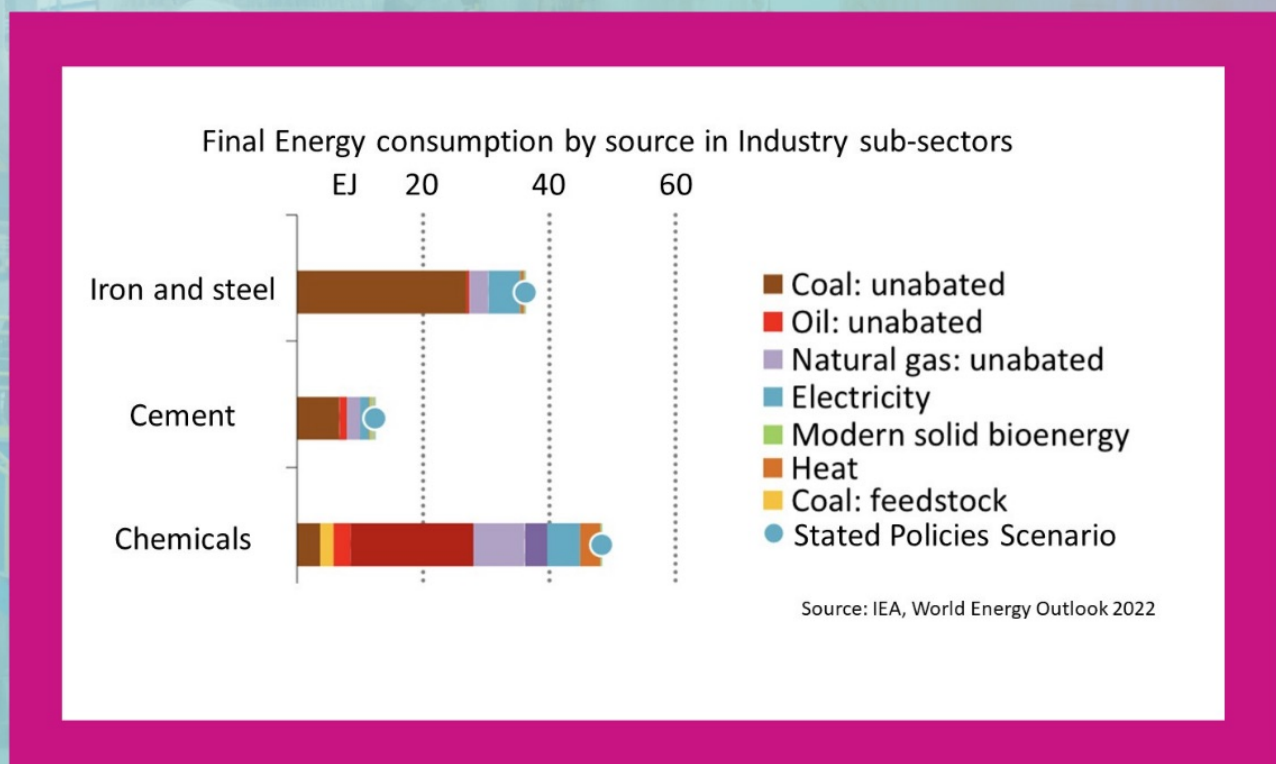


Figure.1 Final energy consumption by source in industry sub-sectors

