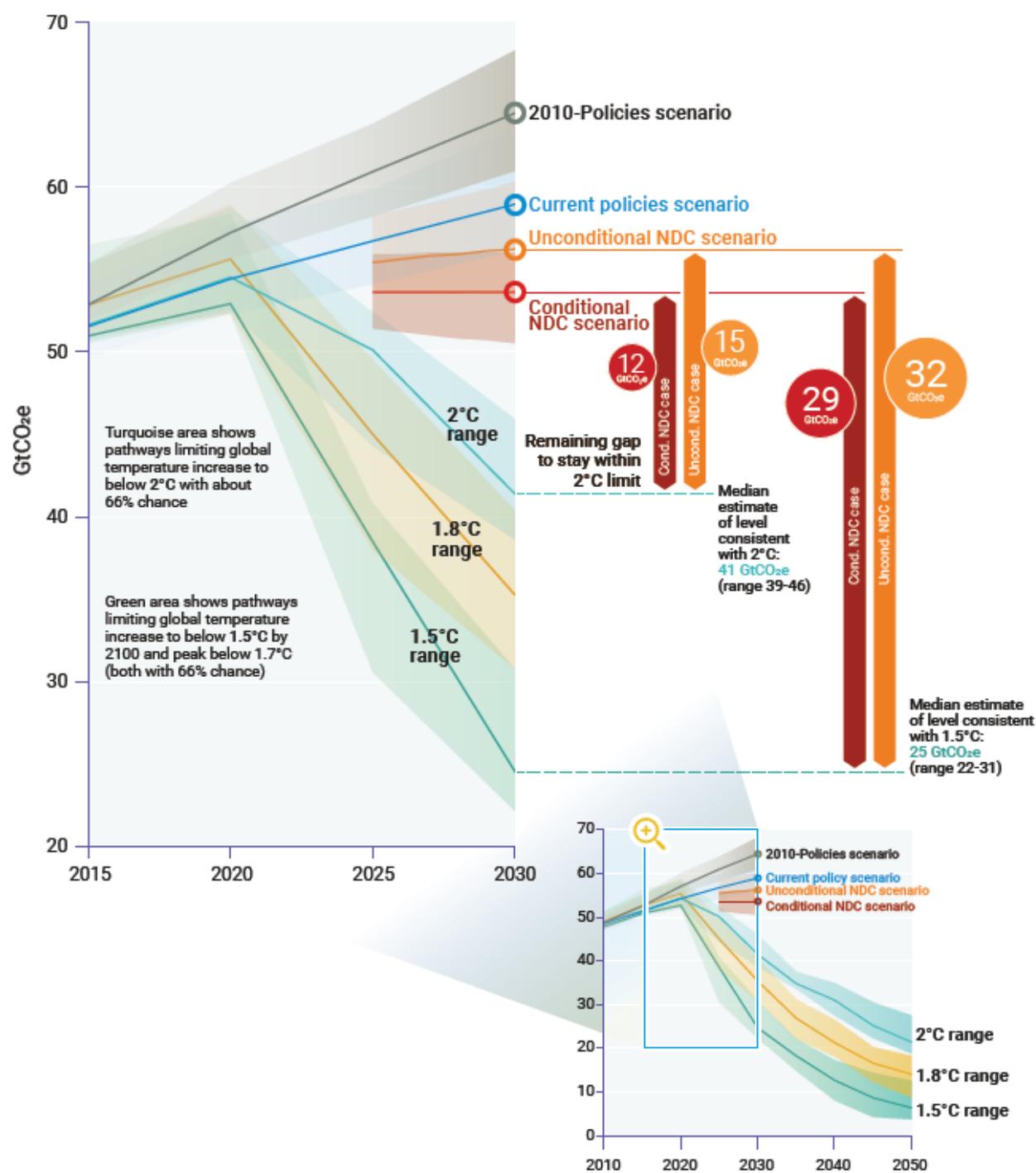


Emissions from the steel and cement industries

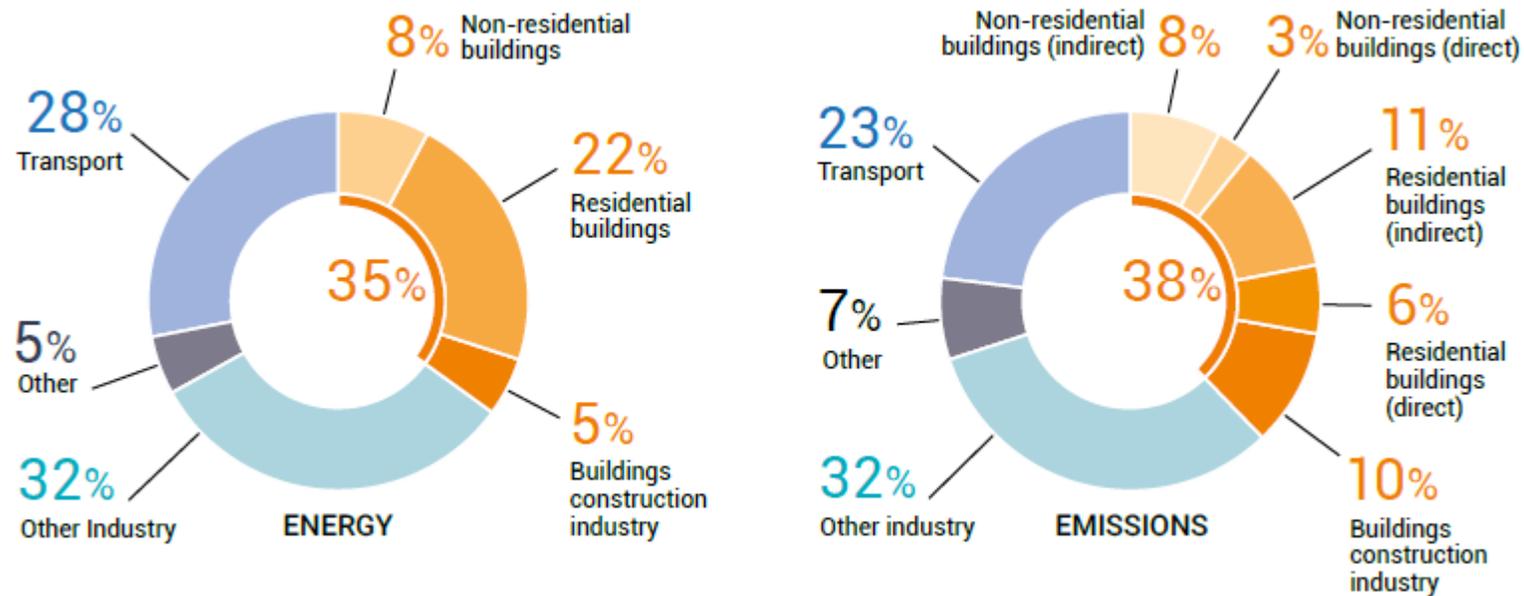
Barbara Reck

April 26, 2021

Global GHG emissions under different scenarios & emissions gap in 2030



The building & construction sector accounts for 38% of total emissions in 2019



The steel industry is energy- and emission-intensive

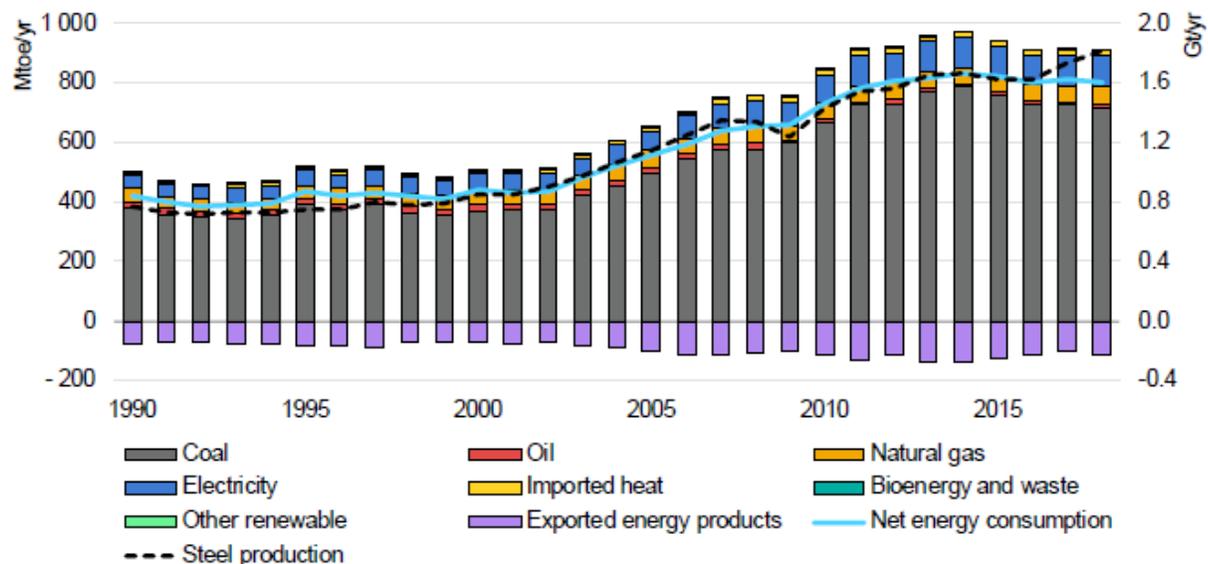
In 2019, the iron & steel industry accounted for

20% of industrial energy use,

8% of total energy use,

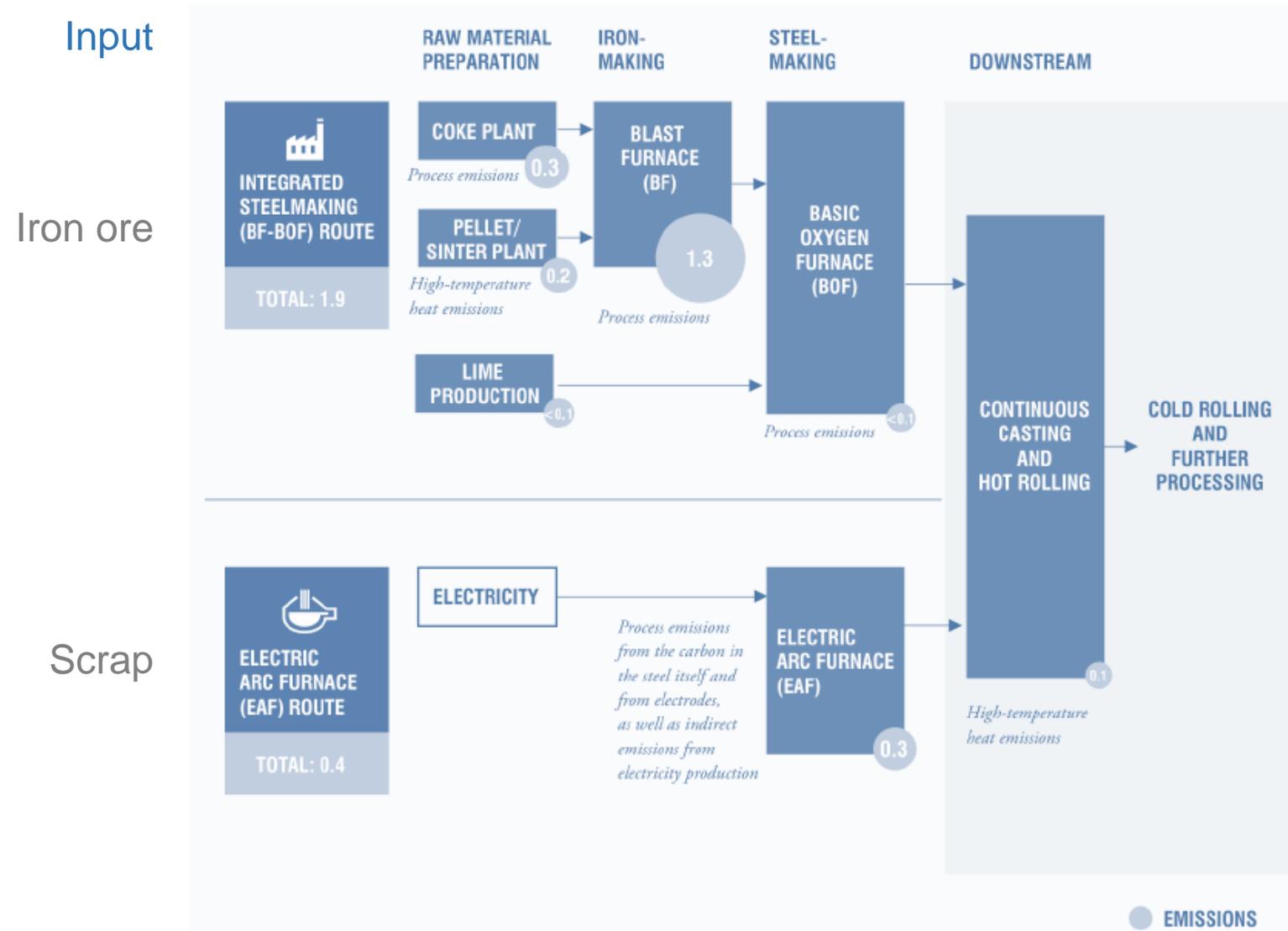
corresponding to 2.6 Gt CO₂ of total emissions from the energy system. (IEA 2020)

Final energy consumption in the steel industry



- The steel industry's energy consumption almost doubled over the past 25 years.
- At 33%, the building sector is its largest end use sector.

Steel is either produced from iron ore or scrap, with big implications on its embodied energy



Producing steel from scrap reduces energy requirements by 79% - but upscaling is not an option due to limited scrap supply

Decarbonizing the steel and cement industries is difficult

Substitution to mass timber in the building sector could substantially reduce their demand



- Reduce demand
 - improved product design,
 - alternative construction technologies,
 - material substitution**
- Increase material circularity:
 - increase recycling efficiencies
- Develop less energy-intensive production technologies
 - (e.g., carbon capture and storage, CCS)



- 60% of concrete GHG emissions stem from cement production
- About 57% of the emissions from cement production could potentially be decarbonized through a combination of alternative binders, kiln electrification, CCS, cementitious substitution, and other measures
- It is unclear how fast such a transition could be implemented

Thank you