

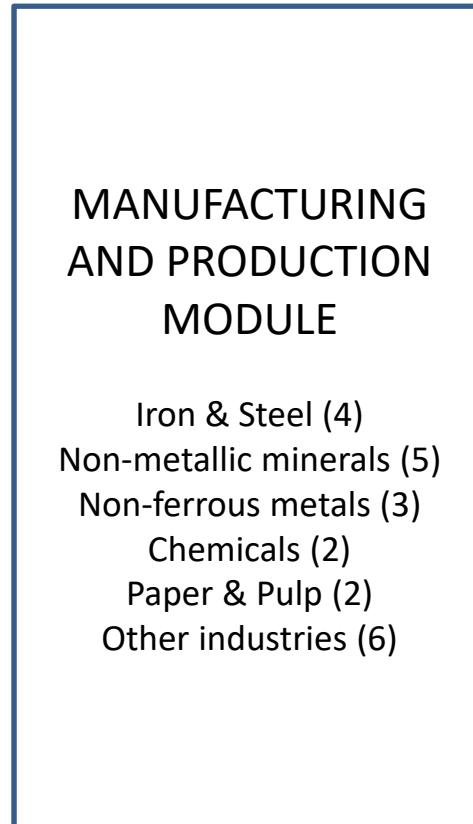
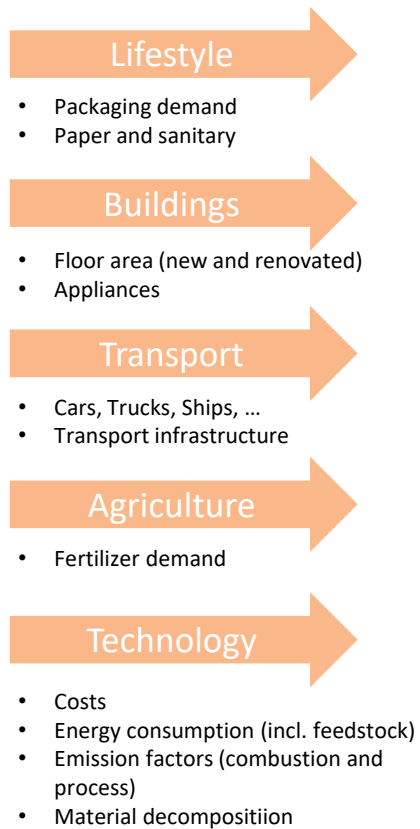


Explore sustainable European futures

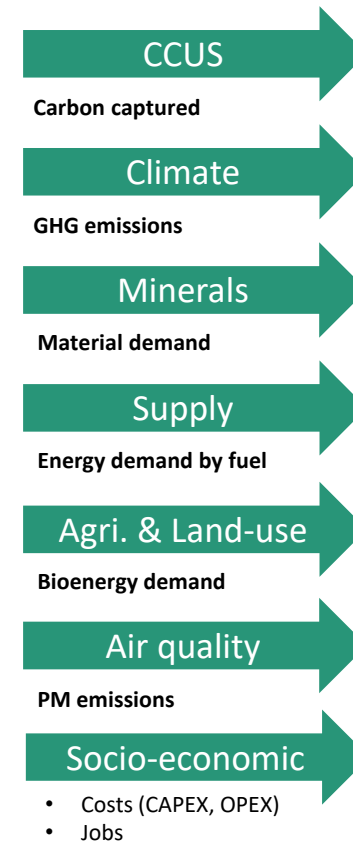
WP3 – Production & Manufacturing

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INPUTS

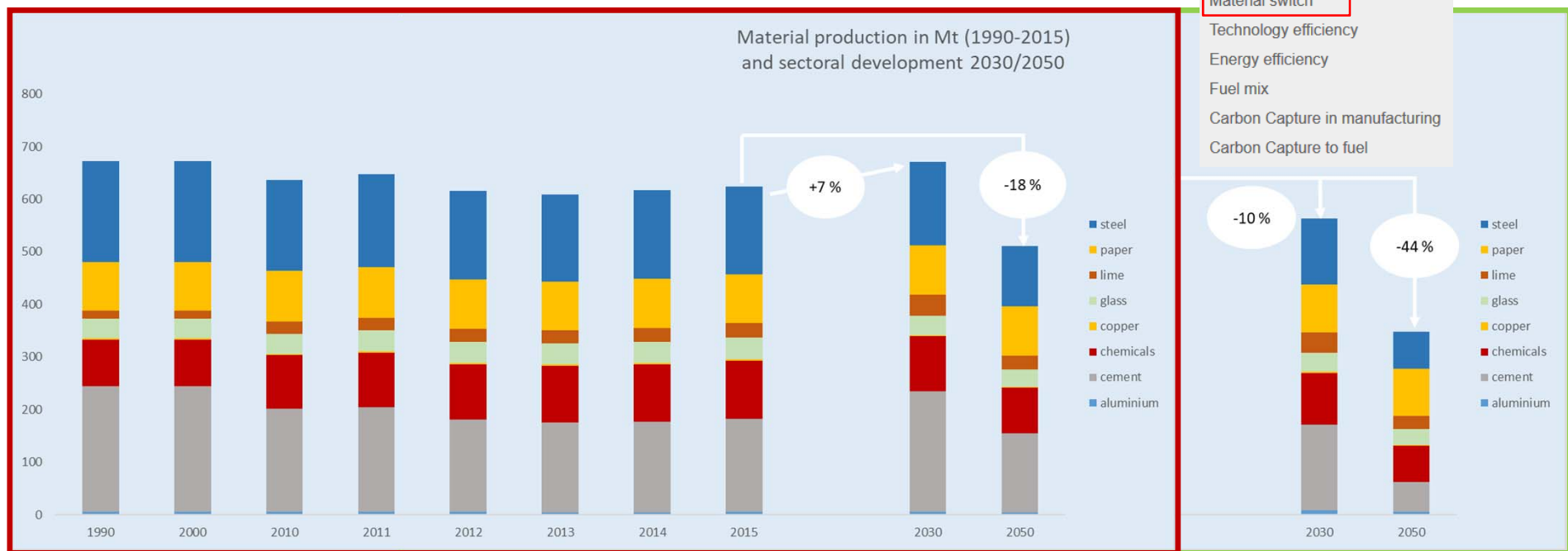


OUTPUTS



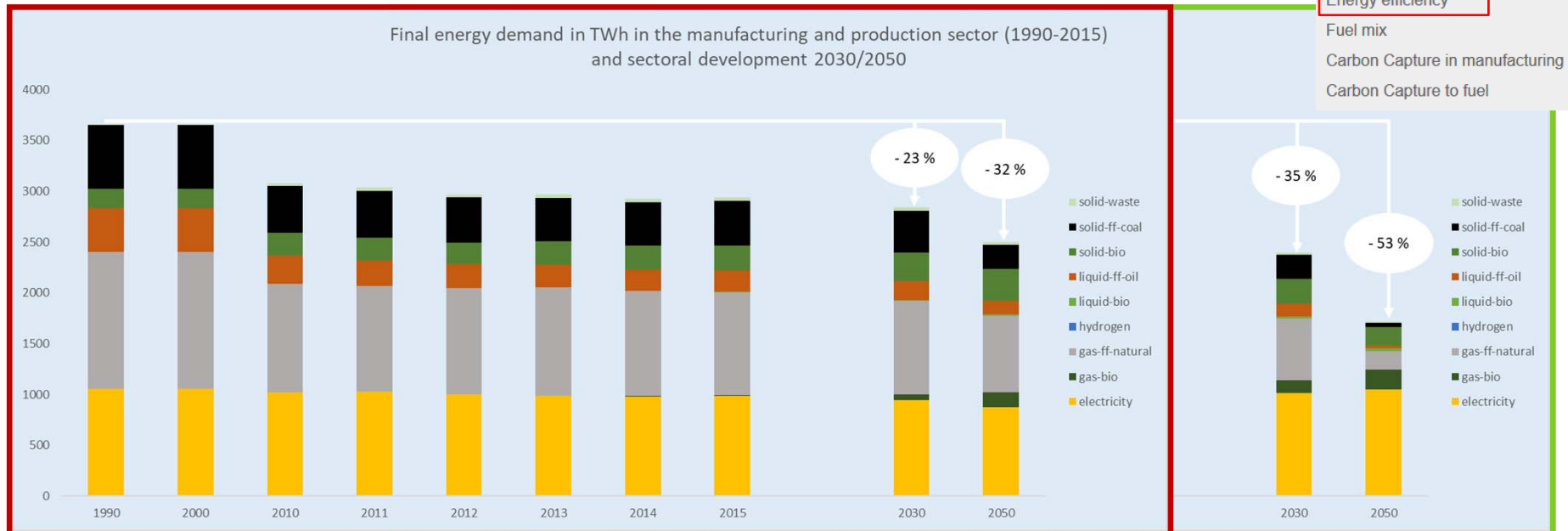
Key message

- **Material efficiency** goes up to 33 % (smart product/material design, re-use of materials) and **reduces total material production by 15 %**
- Substitution of carbon-intensive materials by **lightweight materials** by 30 % **reduces material production by 8 %** compared to EU-Ref



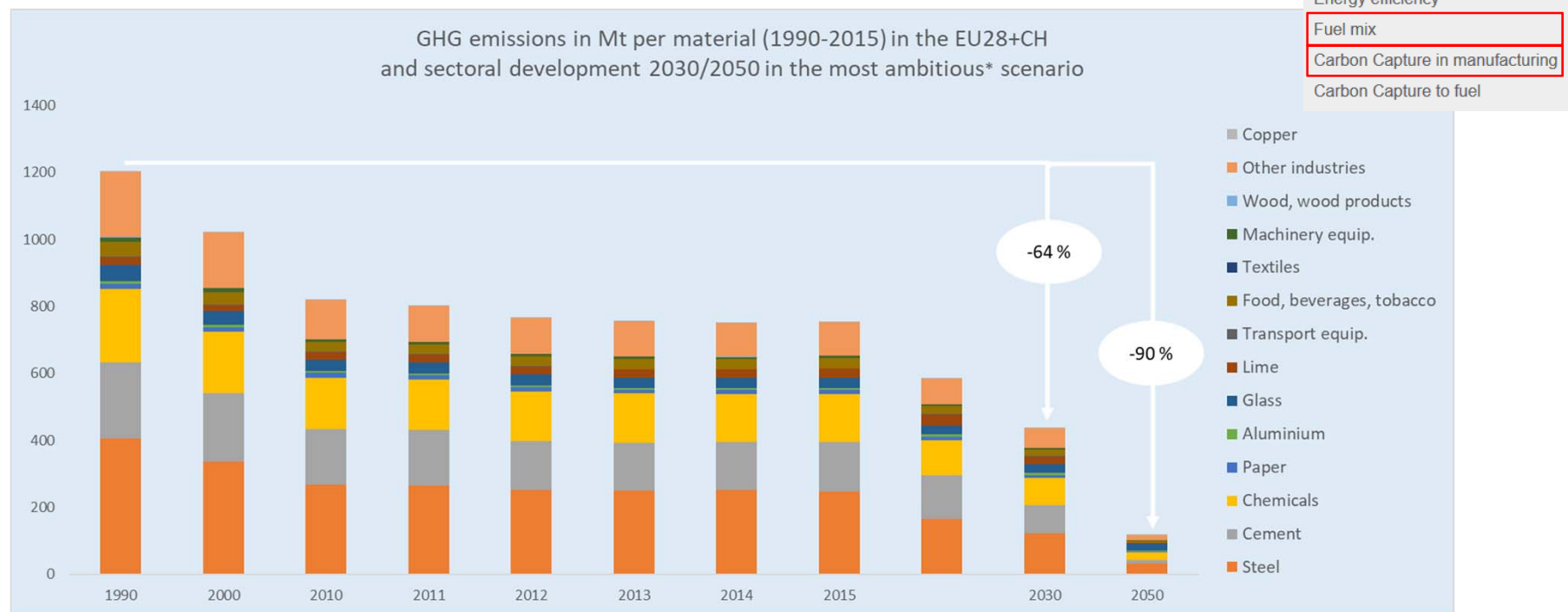
Key message

- **Energy efficiency measures** in the range of 10 to 35 % cause a reduction of the **energy demand of 17 %**
- Increase of **technology efficiency** (low-carbon technologies, recycling, electrification etc.) reduces the **energy demand by 10 %** compared to EU-Ref



Key message

- By changing the fuel mix to **less carbon intensive fuels** (biomass, hydrogen, electrification of heat etc.) GHG emissions can be **reduced by 26 %**
- Up to **70 % of carbon emissions are captured** in some sectors, reducing emissions **by 232 Mt or 45 %** compared to EU-Ref



Key messages in manufacturing and production

- Consideration of **product-to-material(-to-mineral)-links**, representing the interlinkages of demand-side activities and supply.
- Ambitious level setting shows **trade-offs between sectors** (example transport: ambition in modal split or passenger technology increases material demand)
- **15 industrial sectors** covered by up to 4 technologies/sector.
- An increased share of novel technologies, the switch to renewable energy carriers and the electrification of processes in the heavy industry, as well as increasing the energy efficiency leads to a **53 % energy consumption reduction** in 2050 (compared to 1990) and **90 % decrease in GHG emissions**.
- A full decarbonisation of the industrial sector may not be achievable without CCS, in a **EU reference scenario** 24 Mt as well as 230 Mt in a **most ambitious scenario** can be sequestered in 2050.

60 Gt

175 Gt

Pathway

Choose example pathway for Europe:

Europe

Austria

Key behaviours

- > Travel
- > Homes
- > Diet
- > Consumption

Technology and fuels

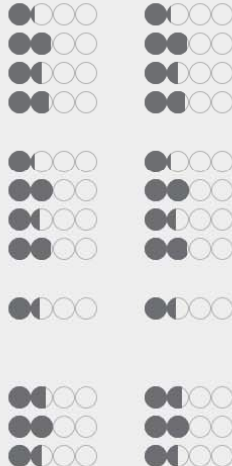
- > Transport
- > Buildings
- > Manufacturing
- > Power

Resources and land use

- > Land and food
- > Biodiversity

Boundary conditions

- > Demographics & long-term
- > Domestic supply
- > Constraints



Emissions Energy Transport Buildings Industry Land-use Agriculture Water Minerals! Air Climate! Jobs Costs World

GHG emissions Austria

