



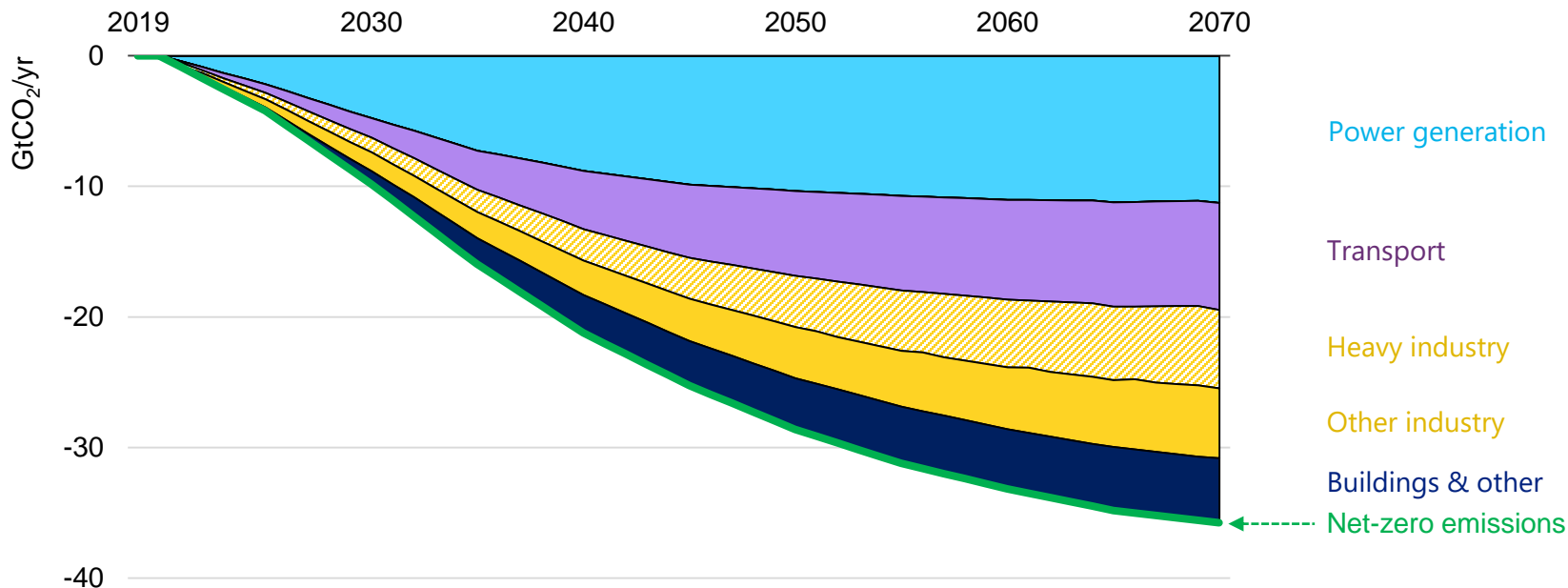
# Heavy industry at net-zero emissions

Peter Levi, Industry Sector Lead, Energy Technology Policy Division

Industry low-GHG global and EU benchmarks workshop, 27<sup>th</sup> April 2021, CENef-XXI

# Focusing on the power sector is not enough to reach climate goals

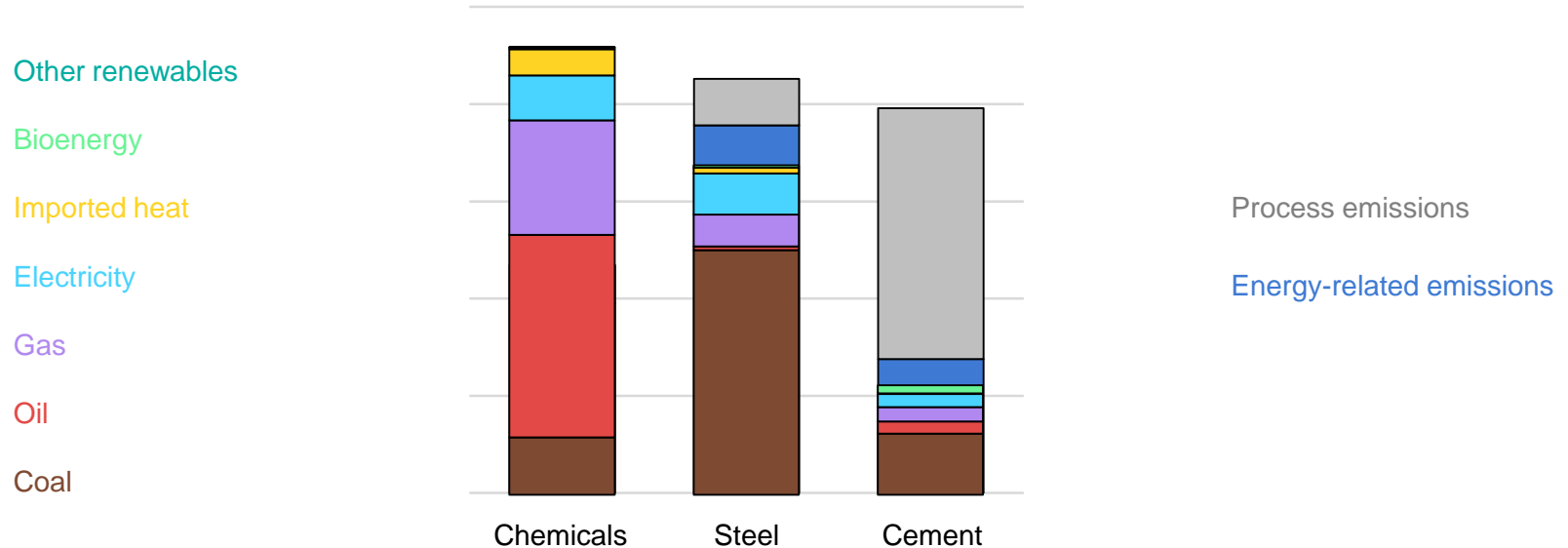
*Global CO<sub>2</sub> emissions reductions in the Sustainable Development Scenario, relative to baseline trends*



**Clean energy technology progress in the power sector is encouraging, but alone not sufficient to reach energy and climate goals. More than half of all energy system CO<sub>2</sub> emissions today are from industry, transport and buildings.**

# Industry currently accounts for a quarter of energy system emissions

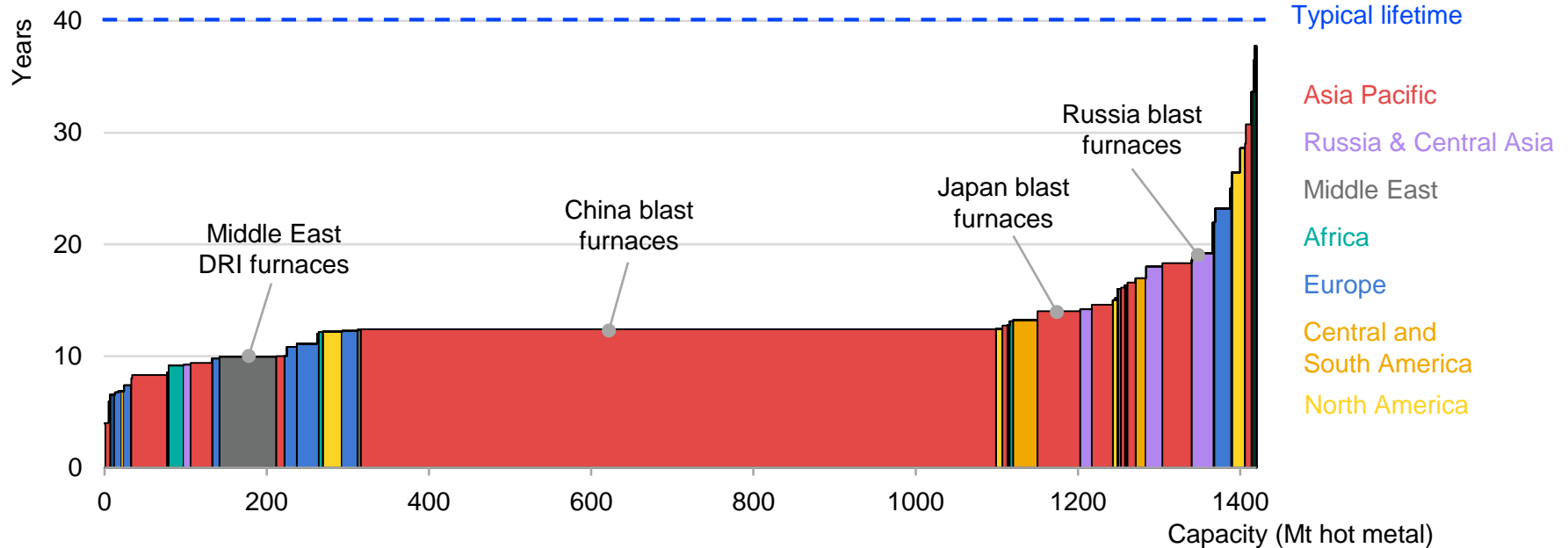
*Heavy industry final energy demand and direct CO<sub>2</sub> emissions, 2019*



**Fossil fuels account for around 85% of the final energy used in heavy industries, which, combined, account for just under a fifth of total energy system CO<sub>2</sub> emissions.**

# Many industry assets are still relatively young

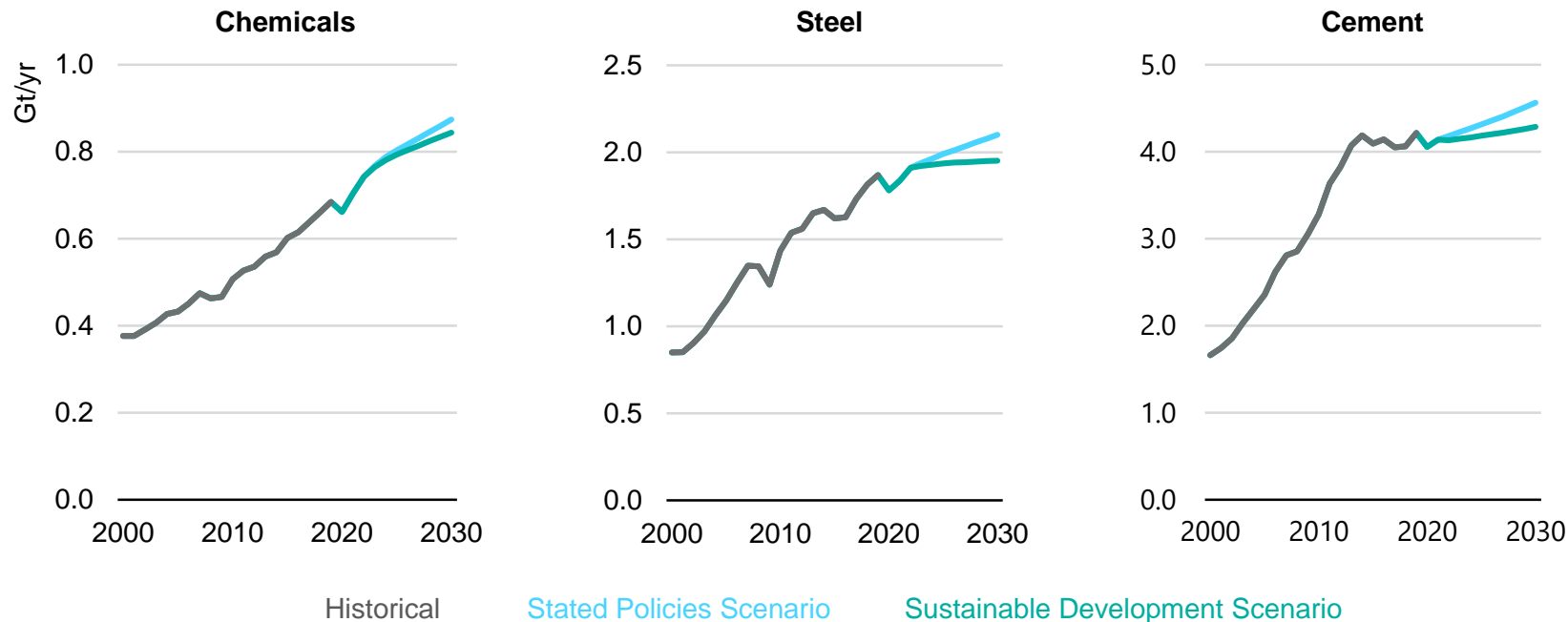
*Age profile of steelmaking from iron ore*



**China's middling-to-young production capacity accounts for upwards of 50% of the global total in key industrial sub-sectors. India and the Middle East are also key regions.**

# The outlook for production growth in the wake of Covid-19

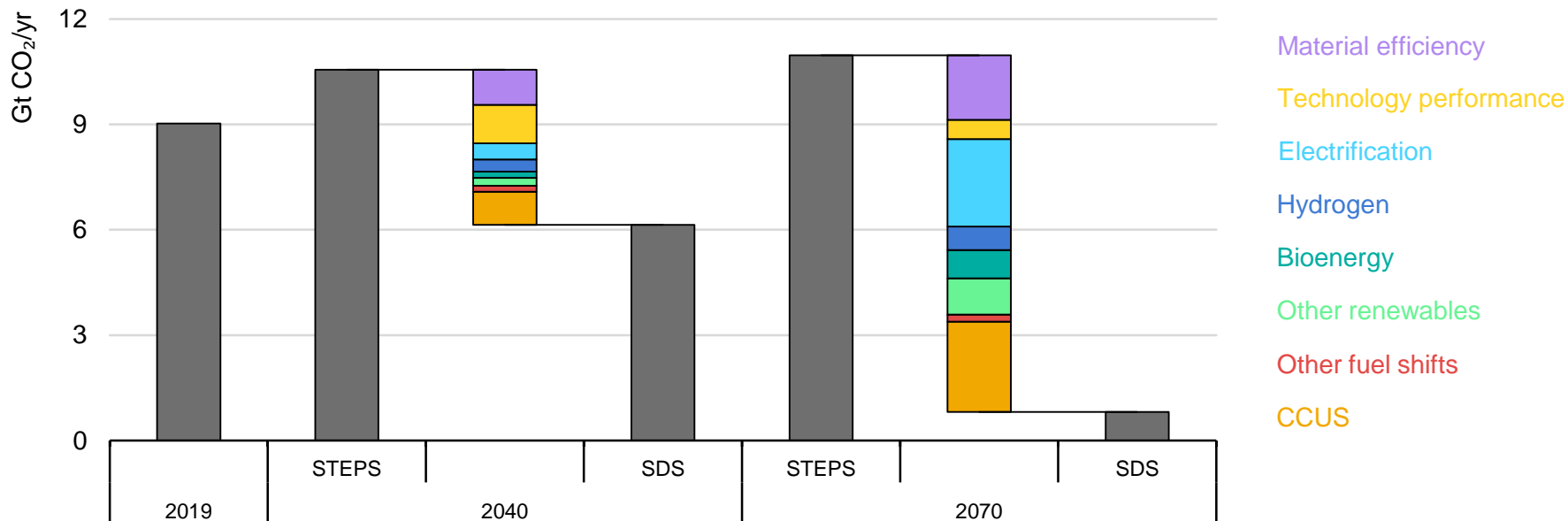
*Production growth in key heavy industries, 2000-2030*



**The Covid-19 pandemic is projected to interrupt production growth in heavy industries, but the long-term drivers of increasing production remain. Material efficiency is the key to permanently bending the curve.**

# A diverse portfolio of mitigation options

*The technology portfolio for reducing direct industrial CO<sub>2</sub> emissions, 2040 and 2070*



**An array of strategies is required to reduce industrial CO<sub>2</sub> emissions, with innovative technologies like electrolytic hydrogen and CCUS playing a large role, particularly in the longer term and in heavy industries.**

- Material producers, manufacturers, financial and research institutions and non-governmental organisations all have a role to play, but governments will take centre stage.
- Targeted actions include:
  - **Managing existing assets and near-term investment** (e.g. retro-fits and retro-fit-ready new-build plants, tradeable energy efficiency schemes, sunset clauses)
  - **Creating a differentiated market for low-emissions materials** (e.g. carbon contracts for difference, minimum content regulations, public and private procurement regulations)
  - **Developing early-stage technologies** (e.g. RD&D funding, public-private partnerships, knowledge sharing platforms, innovation co-ordination, supporting infrastructure investment)
  - **Accelerating material efficiency** (e.g. improved networks for scrap material collection and better sorting, modified design regulations)
- Priorities for Covid-19 stimulus packages: financial incentives to improve energy efficiency, improvements to recycling systems and strengthened support for pilot and demonstration projects.

