

Global Material Resources Outlook to 2060

Economic drivers and
environmental consequences

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 @OECD_ENV





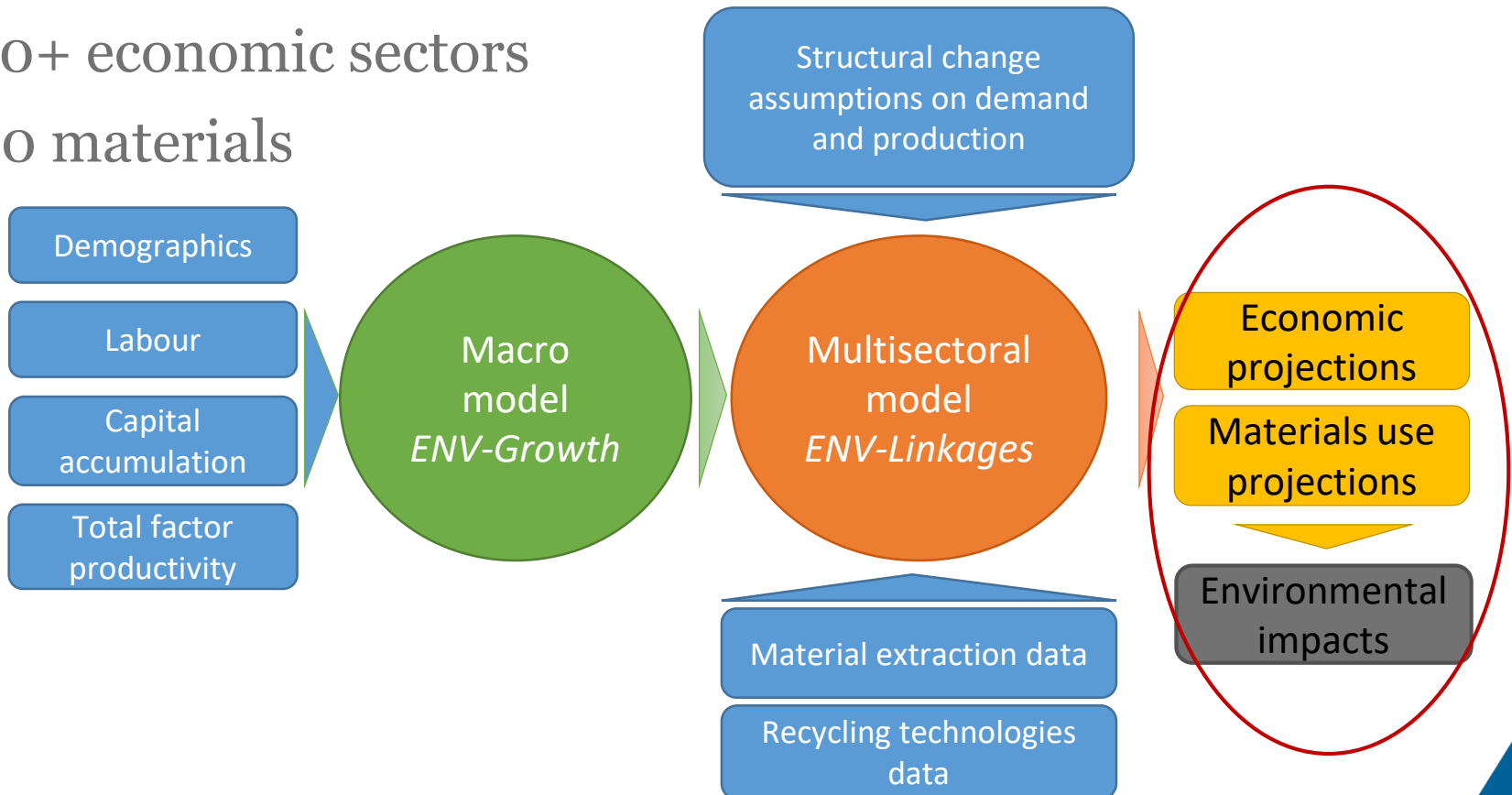
Outline

- The economic drivers of materials use
- Materials use projections to 2060
- Environmental consequences
- Conclusions and policy implications



Material Resources Outlook in a nutshell

- Global assessment (disaggregated to 12 large economies + 13 regions)
- 2060 time horizon
- 50+ economic sectors
- 60 materials



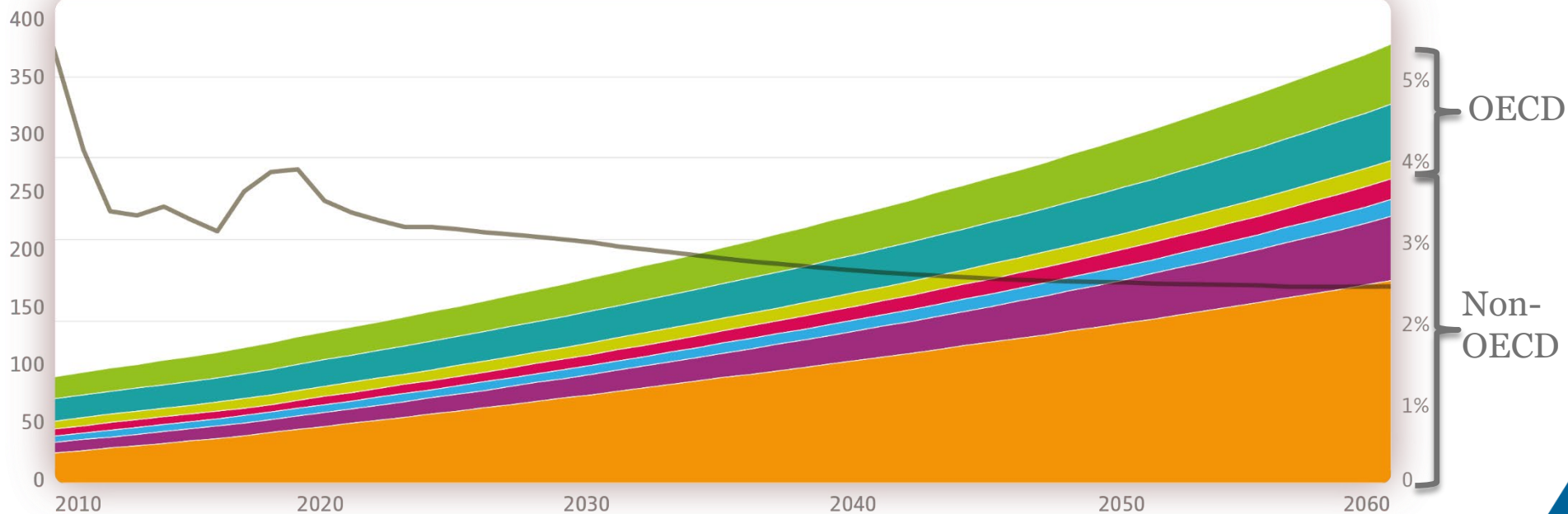


Global economy to triple ...

- OECD America
- OECD Europe
- OECD Pacific
- Other America
- Eurasia
- Middle East & Africa
- Other Asia
- GDP at constant PPP

World GDP growth rate

trillion 2011 USD



....but global growth slows down



Living standards will converge to current OECD levels

● GDP per capita in 2011 ● GDP per capita in 2060 thousand USD in 2011 PPP

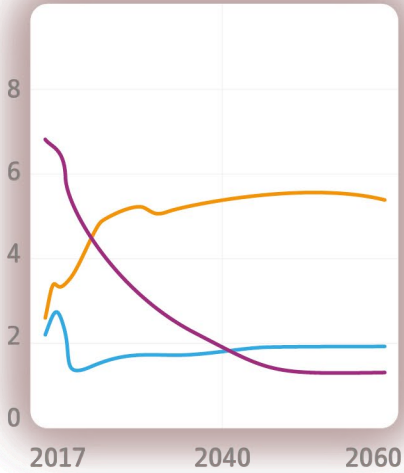




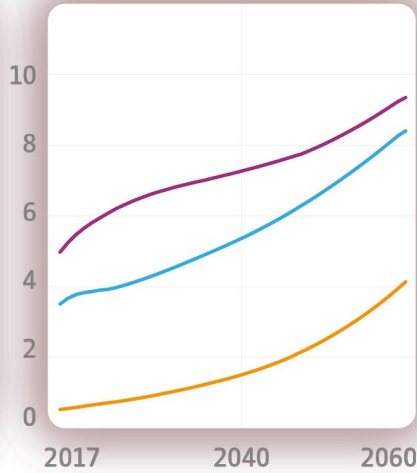
Investment increases over time and construction follows

United States China Sub-Saharan Africa

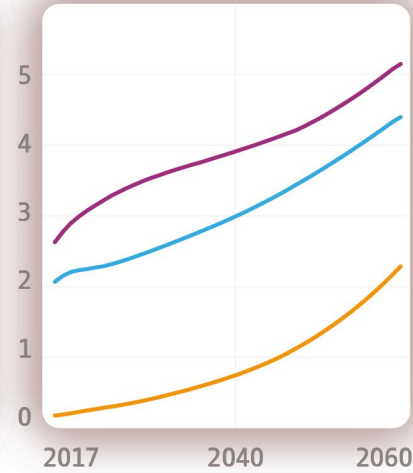
GDP growth rate
in %



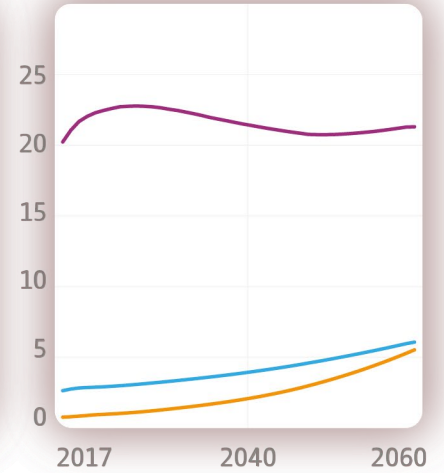
Gross investment
in tn USD



Construction output
in tn USD



Construction materials use
in Gt

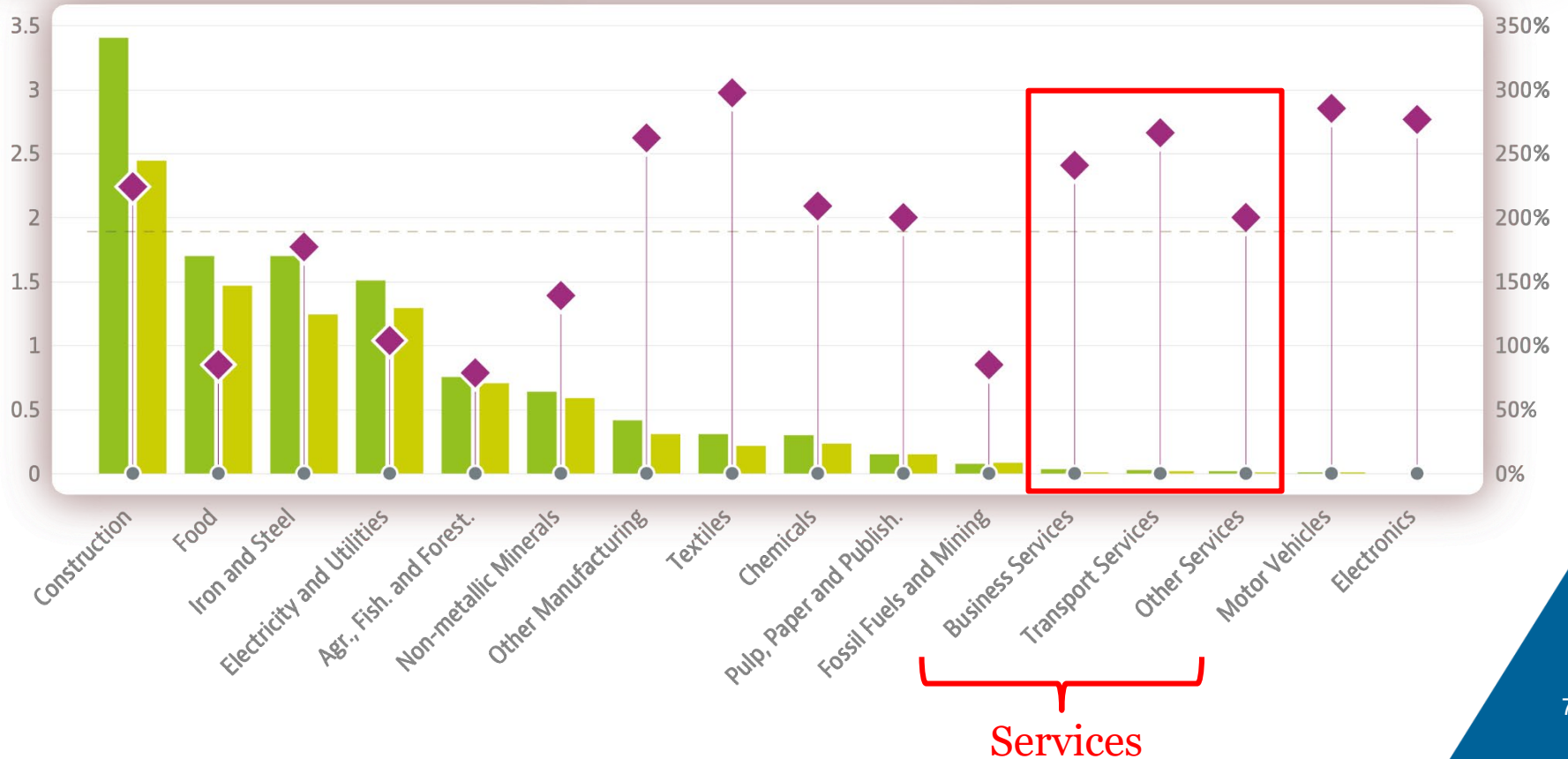




Structural change shifts activity away from material intensive sectors

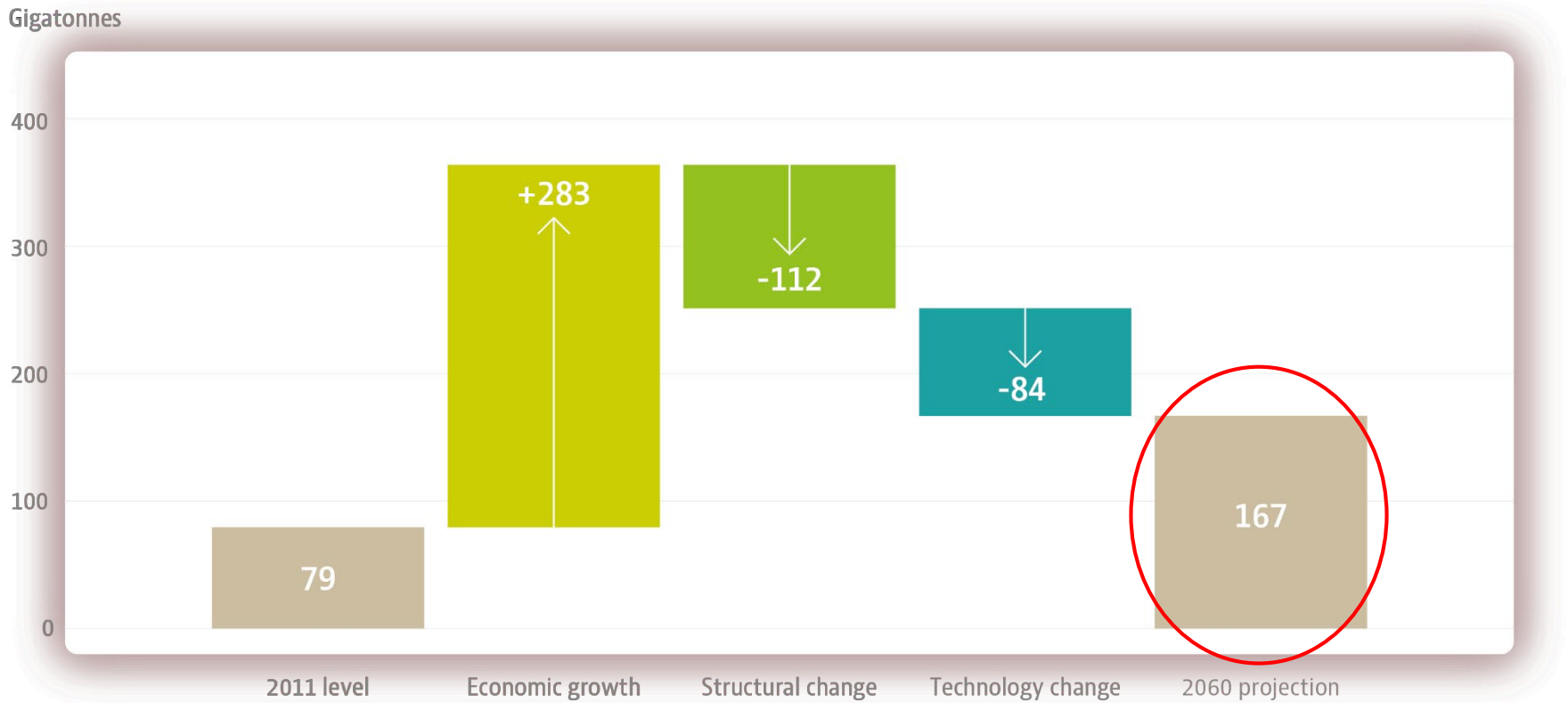
Material intensity in 2060 in tonnes/USD
Material intensity in 2011 in tonnes/USD

Output growth 2011-2060 in %
Average output growth 2011-2060 in %





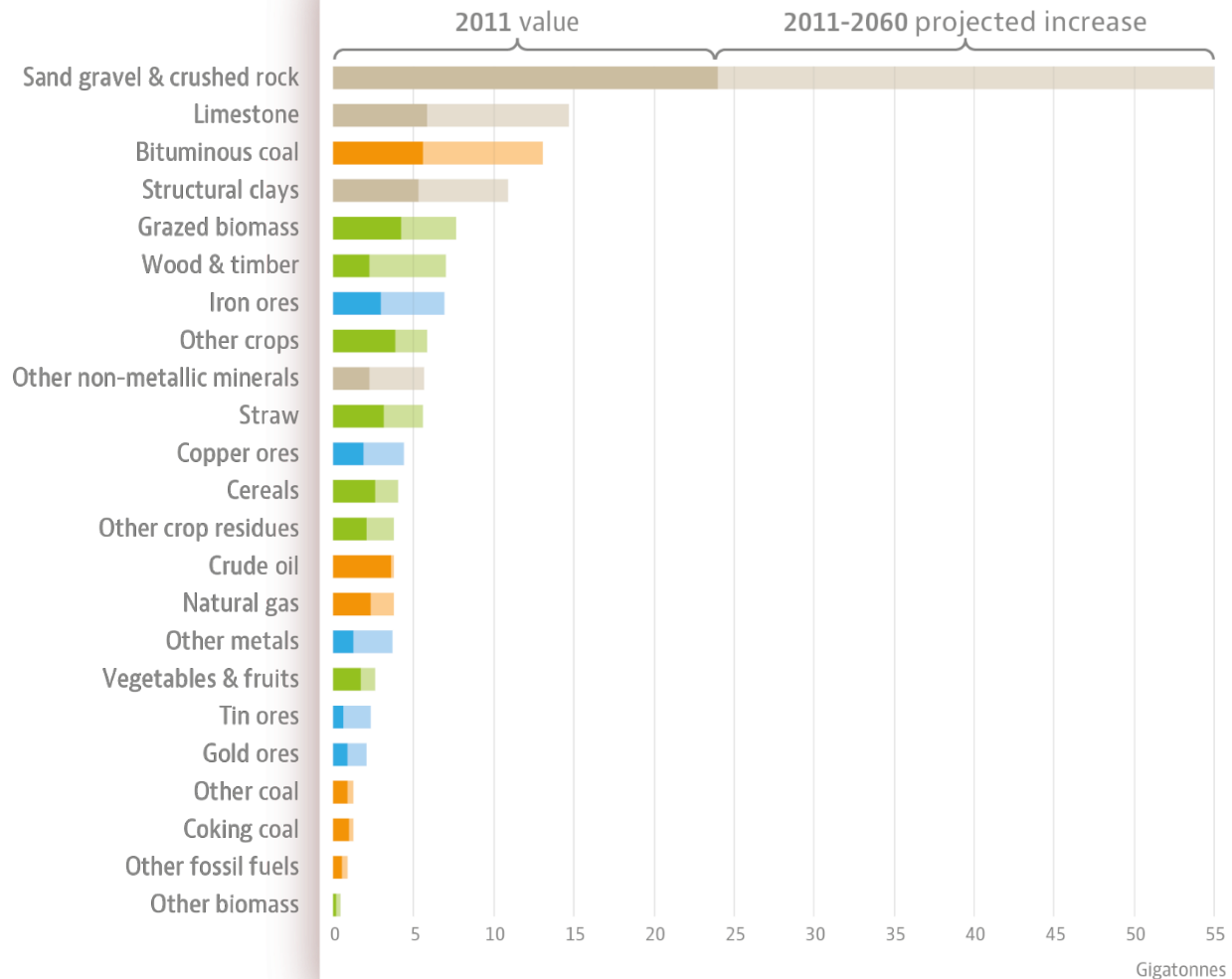
Competing forces lead to near doubling of materials use





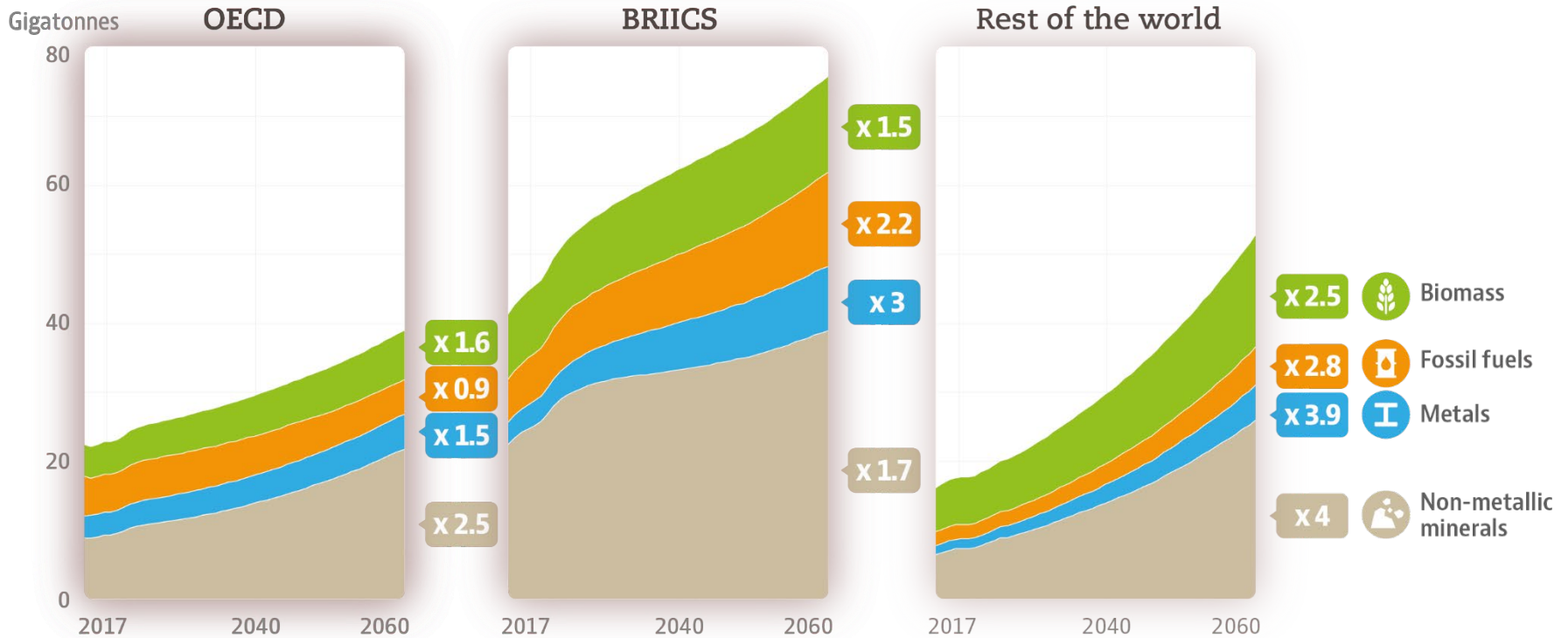
Growth in material use differs widely across materials

- Biomass**
- Fossil fuels**
- Metals**
- Non-metallic minerals**



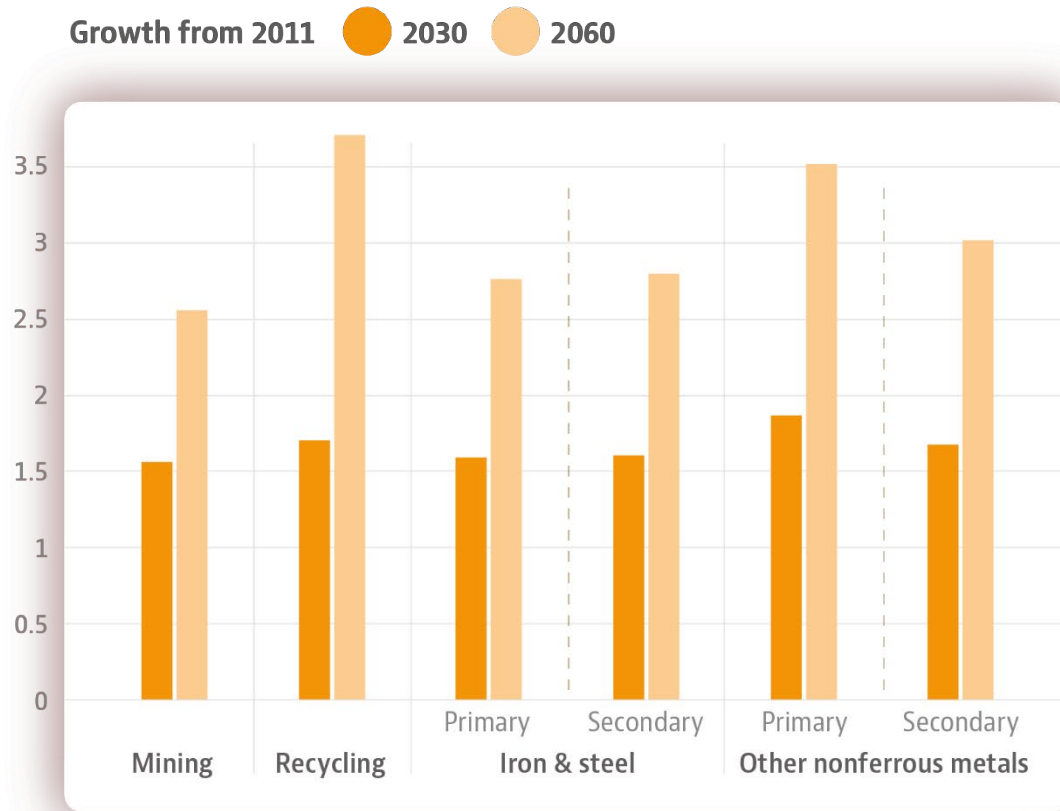


.. And across countries





Recycling grows faster than mining ..

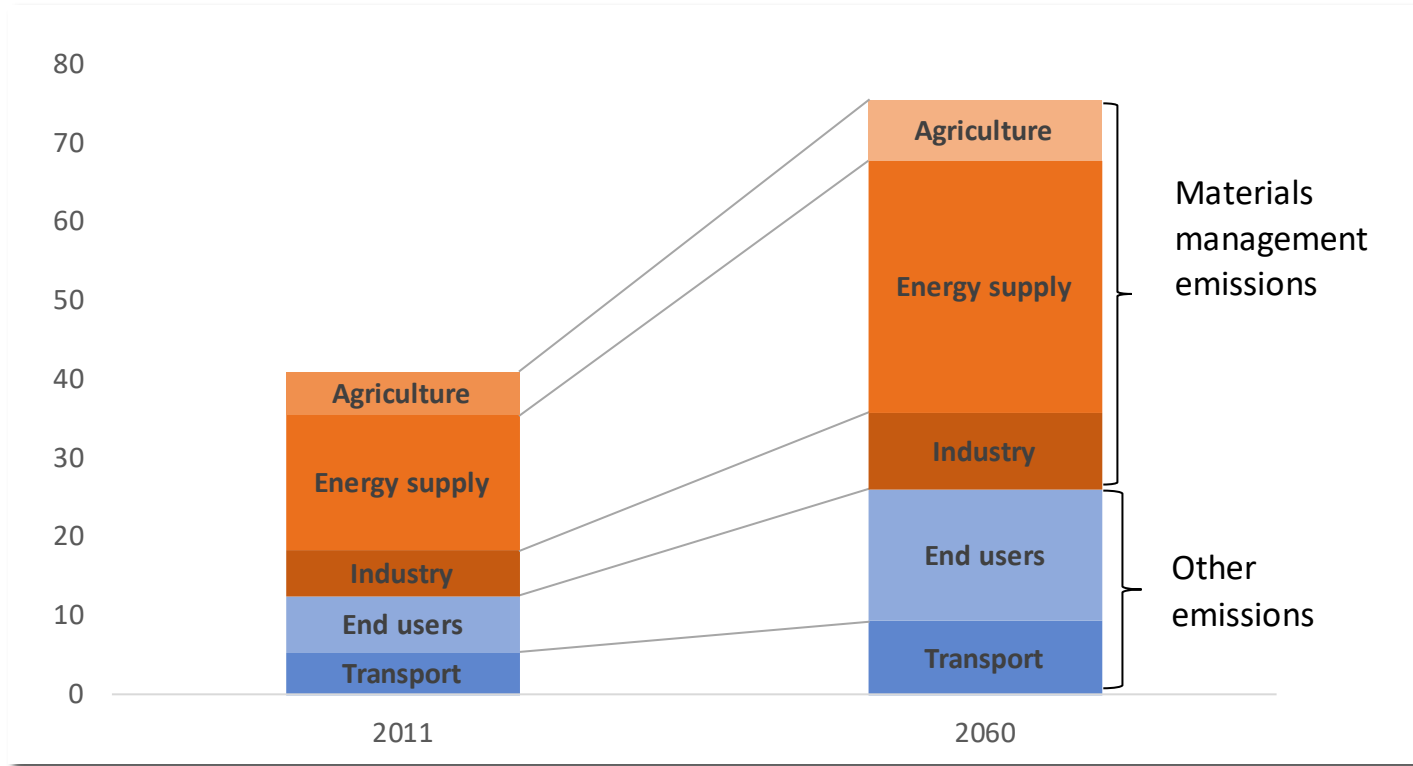


.... but remains a small share of the economy



Greenhouse gas emissions related to materials management will more than double

GHG emissions in CO₂ equivalent



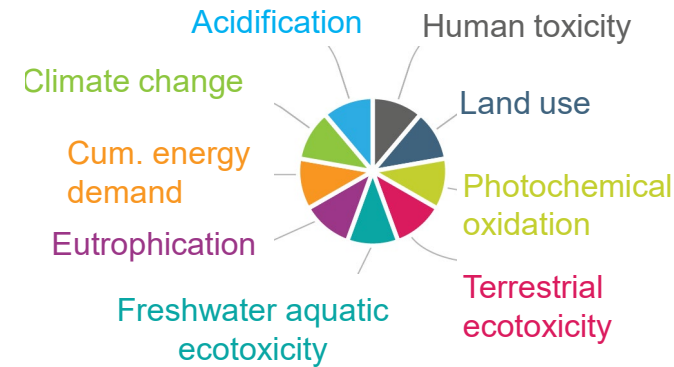
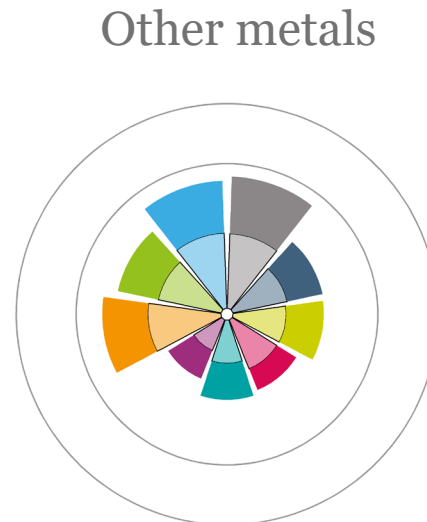
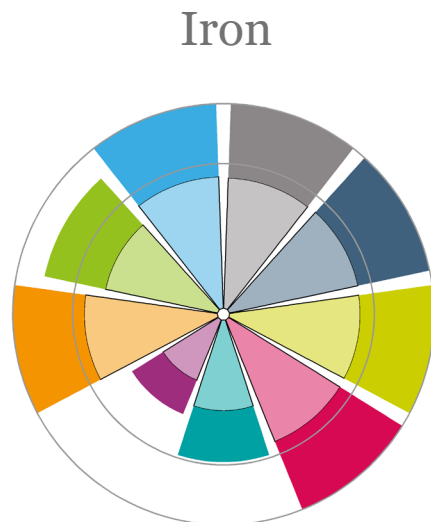
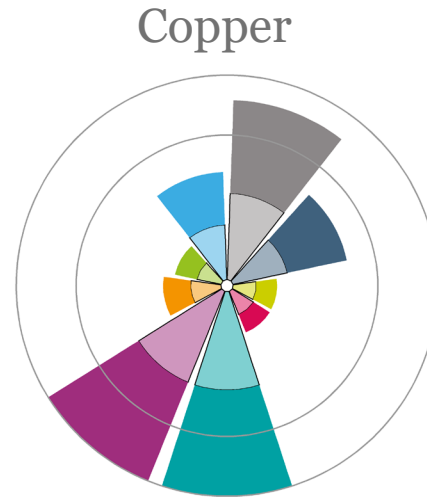
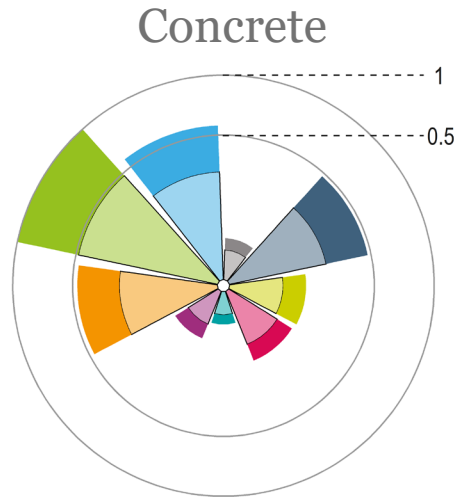
12% of total GHG emissions associated with 7 key metals

12% of total GHG emissions associated with concrete

50Gt CO₂ eq emissions associated with materials cycle



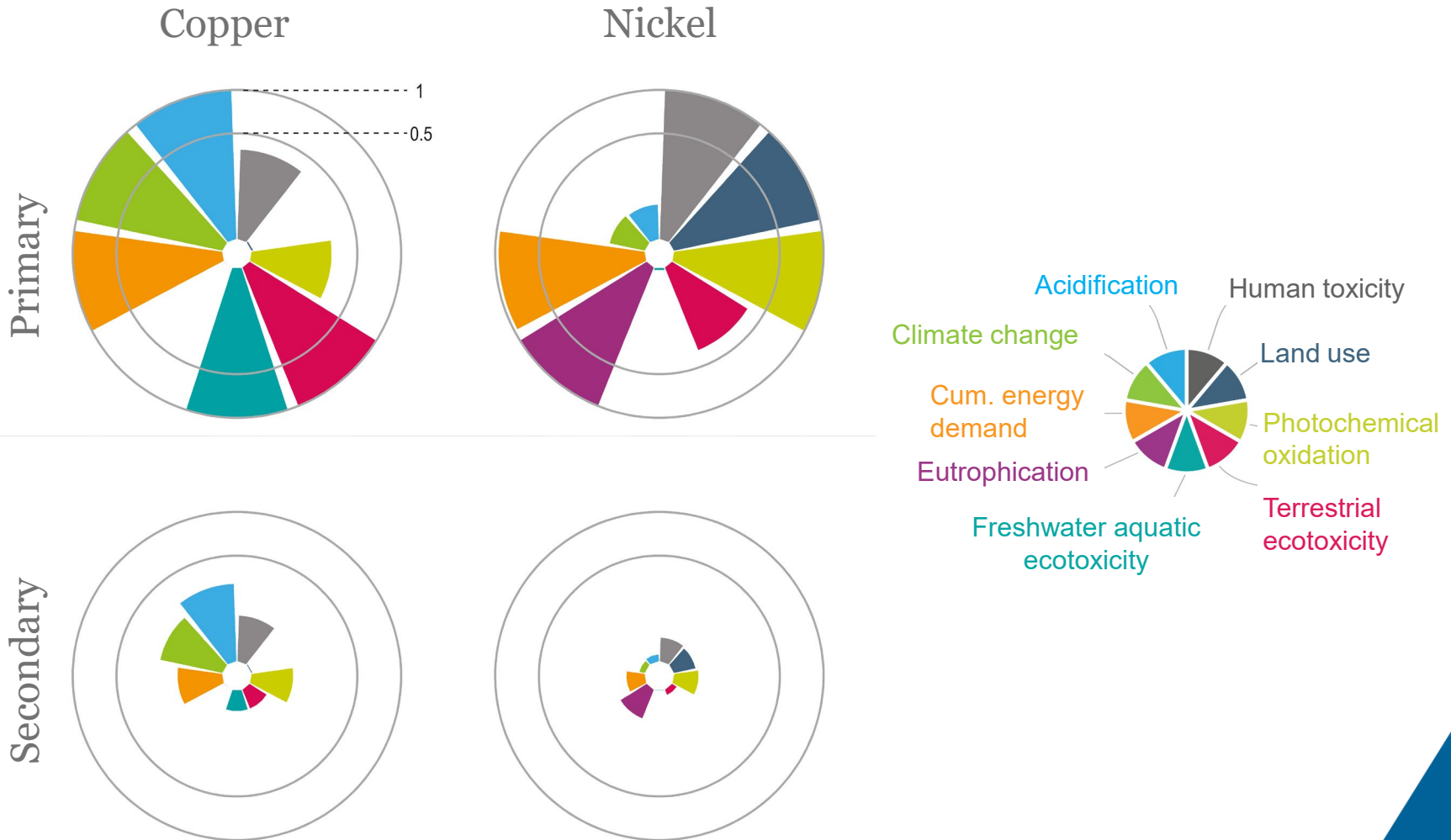
Environmental impacts from extraction and processing will more than double, but vary widely by material



Total environmental impacts (highest impact in 2060 normalised to 1)

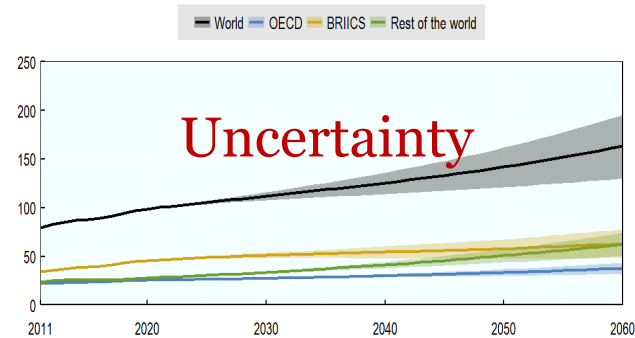
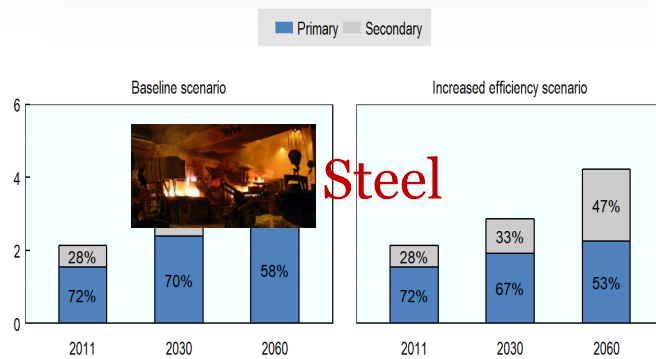
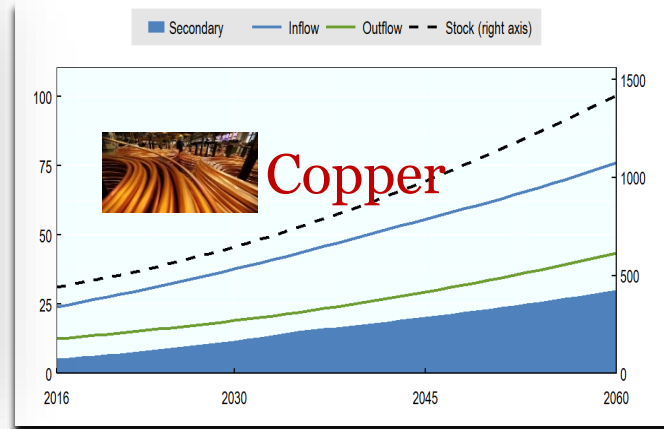
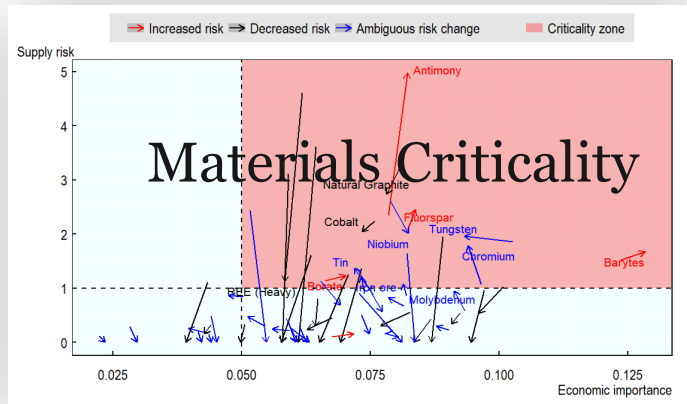


Primary materials cause much more environmental damage





The Outlook also covers projections of ...

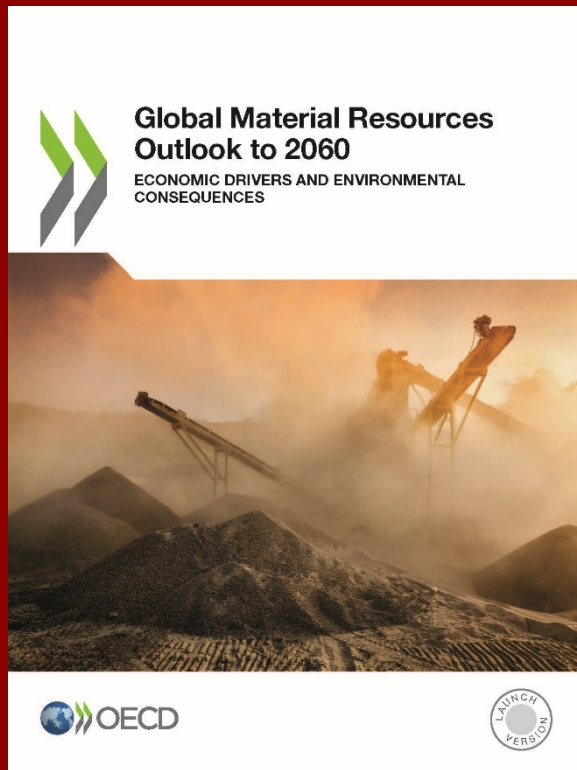




Conclusions

- Conflicting socio-economic trends will drive materials use. Despite structural and technological change, **global materials use will double** between now and 2060, translating into a **relative decoupling**.
- This exacerbates a **wide range of environmental impacts**, and is on a collision course with meeting the objectives of the Paris Climate Accord.
- While **recycling** becomes more competitive over time it is not sufficient to shift the balance between primary and secondary materials use.
- Given the stark differences between materials we need greater **granularity for resource efficiency policies**, motivated by environmental concerns.
- Greater **coherence** is needed between resource management and climate policies, as well as other policies, such as trade and innovation.

Thank you for your attention!



Find the report, highlights and explore the data at:

oe.cd/materials-outlook

For more information, contact:

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