

Ready for low-carbon and circular markets of construction products?

Workshop at Legambiente & KyotoClub

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Circular economy and the link to embodied carbon



□ From the CLIMATE perspective

- 1) *We cannot keep extracting raw-materials*
 - *There is not enough raw-materials for the economic growth*
- 2) *We must use less energy in the re-production to lower CO2*
 - *Typically, recycled materials use less energy/CO2 when re-producing*

□ From the INDUSTRY Perspective

- 1) *Circular economy can lower costs of production*
 - *It is about avoiding raw-material shortages and inflation on products/materials*
- 2) *Lowest CO2-footprints ensures a competitive market position*
 - *When declaring carbon footprint of products, the greenest products will win*

there is

new demands for sustainability in regulation and public procurement

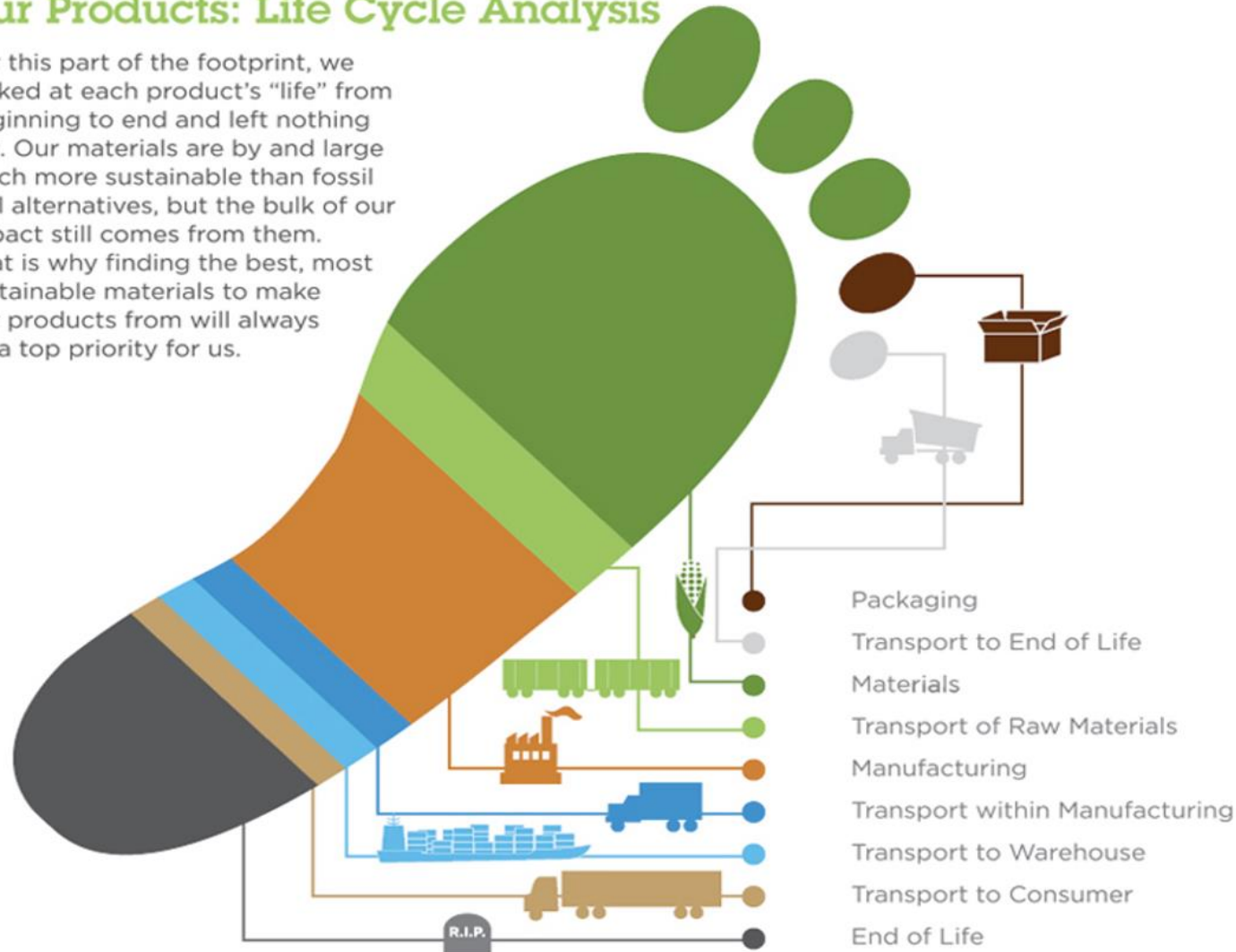
Products' life-cycle footprint

- Definition



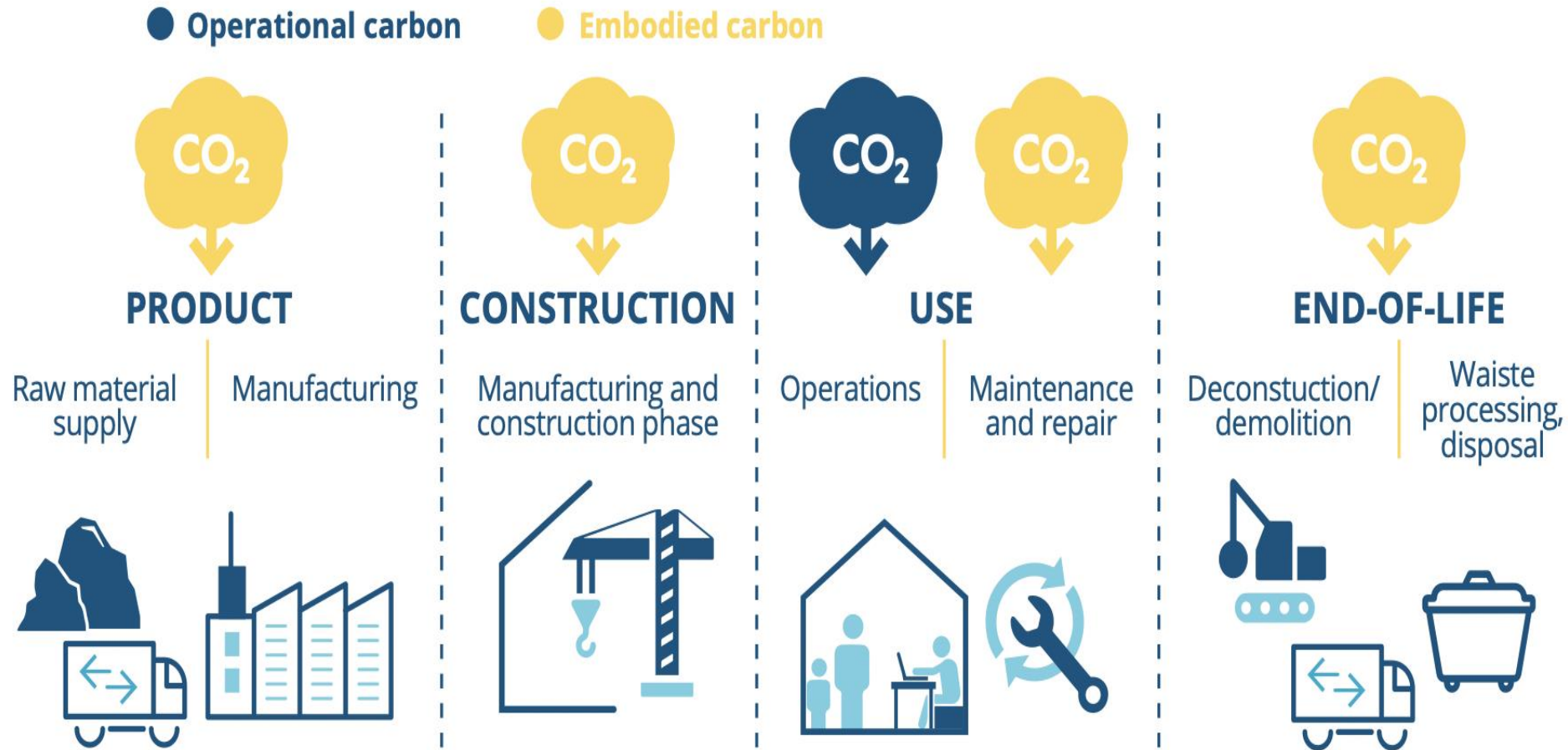
Our Products: Life Cycle Analysis

For this part of the footprint, we looked at each product's "life" from beginning to end and left nothing out. Our materials are by and large much more sustainable than fossil fuel alternatives, but the bulk of our impact still comes from them. That is why finding the best, most sustainable materials to make our products from will always be a top priority for us.



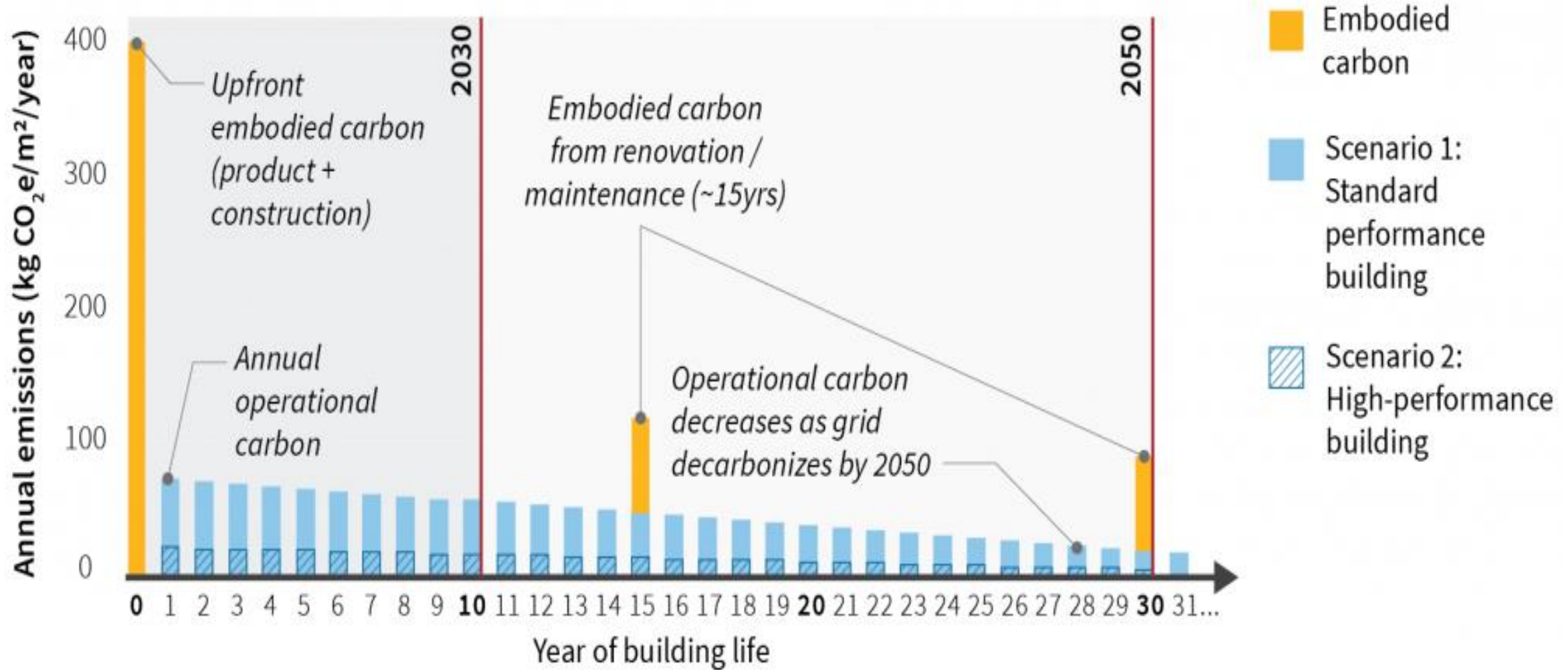
What is embodied carbon

- Definition



Embodied carbon in buildings

- When we see embodied emissions in a buildings lifetime

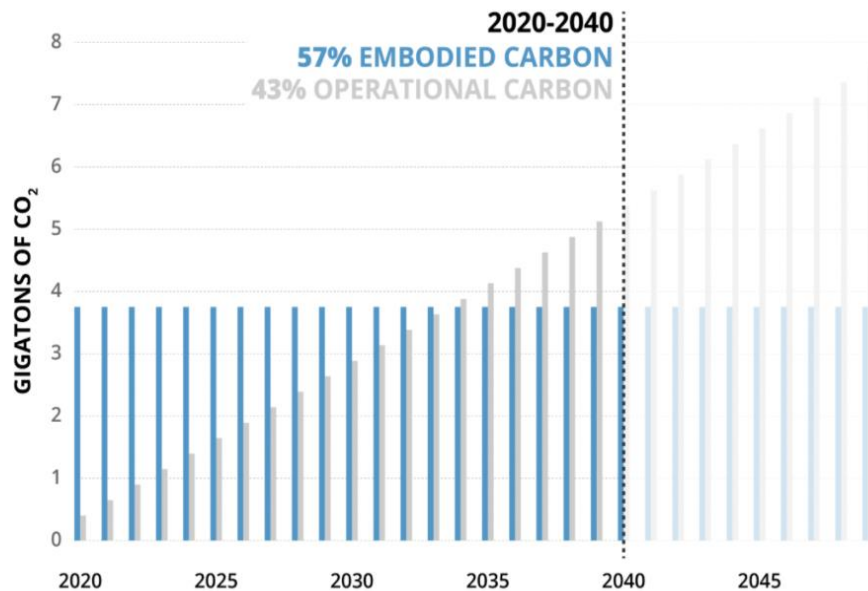


Embodied carbon in buildings

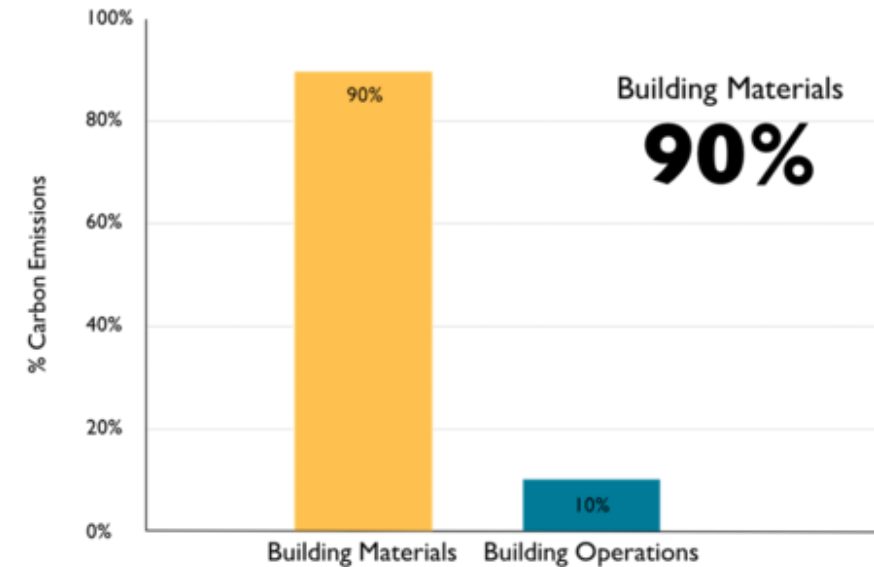
- Development



Total Carbon Emissions of **Global New Construction**
with no building sector interventions



Building Sector CO₂ Emissions
New Construction: 2015-2050



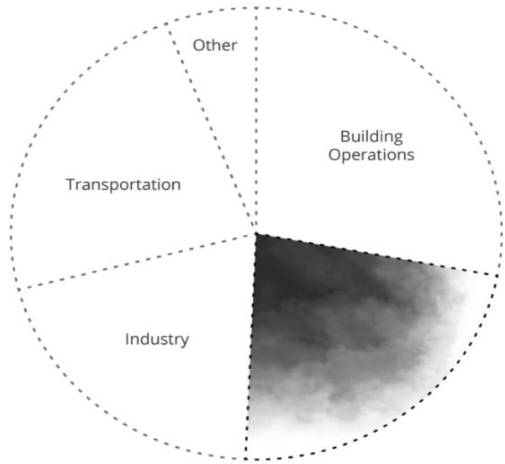
- ❑ As buildings become more energy efficient – the share of embodied carbon goes up
- ❑ In the most energy efficient buildings, embodied carbon is estimated to form up to 90% of a building's total emissions
- ❑ We expect embodied carbon emissions to increase when more homes are renovated (EU's Renovation Wave)

It is about saving the planet

- Business as usual is not enough



Annual Global CO₂ Emissions



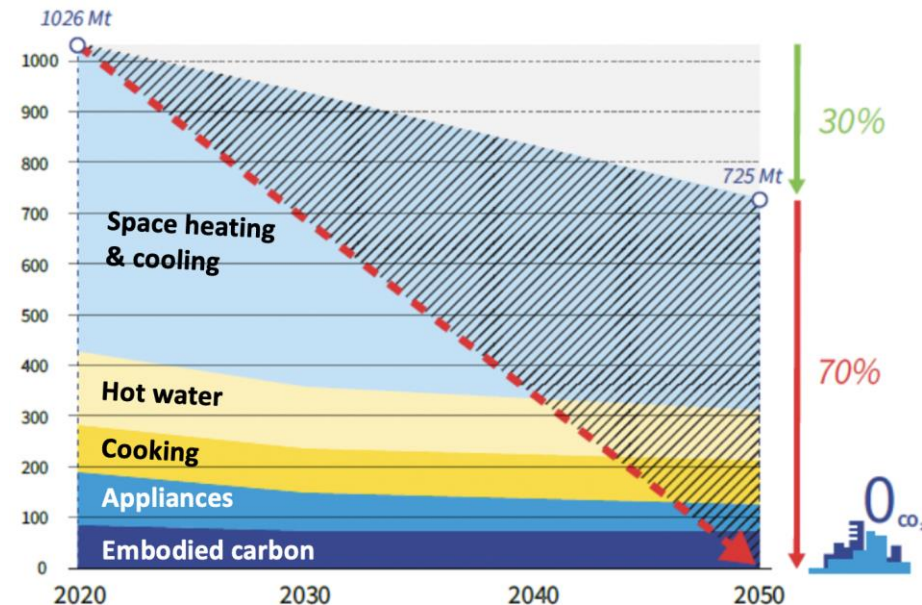
23%
Concrete (11%)
Steel (10%)
Aluminum (2%)

❑ The European Green Deal - it is about saving the planet !

- ❑ Europe has to be climate-neutral by 2050
- ❑ This means that all sectors and all industries must deliver climate-neutrality by 2050

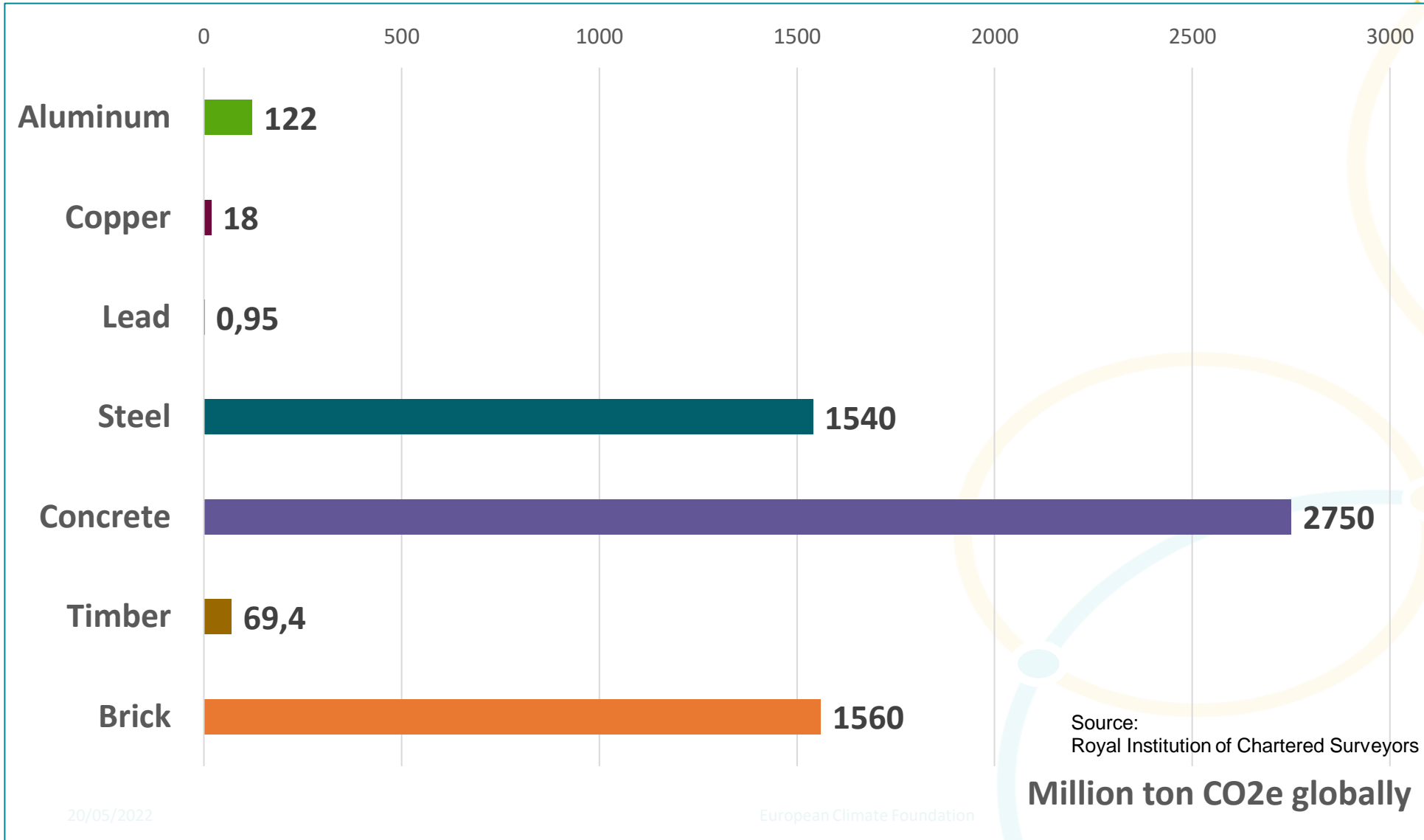
❑ Buildings - it is about 36% of the EU's CO₂ emissions !

- ❑ Buildings account for 50% of all raw-material extraction
- ❑ Buildings account for 30% of all generated waste across sectors and industries
- ❑ Embodied carbon is between 10-20% of buildings' CO₂
- ❑ Embodied emissions must decrease by 40% to fulfill the 2050-goal



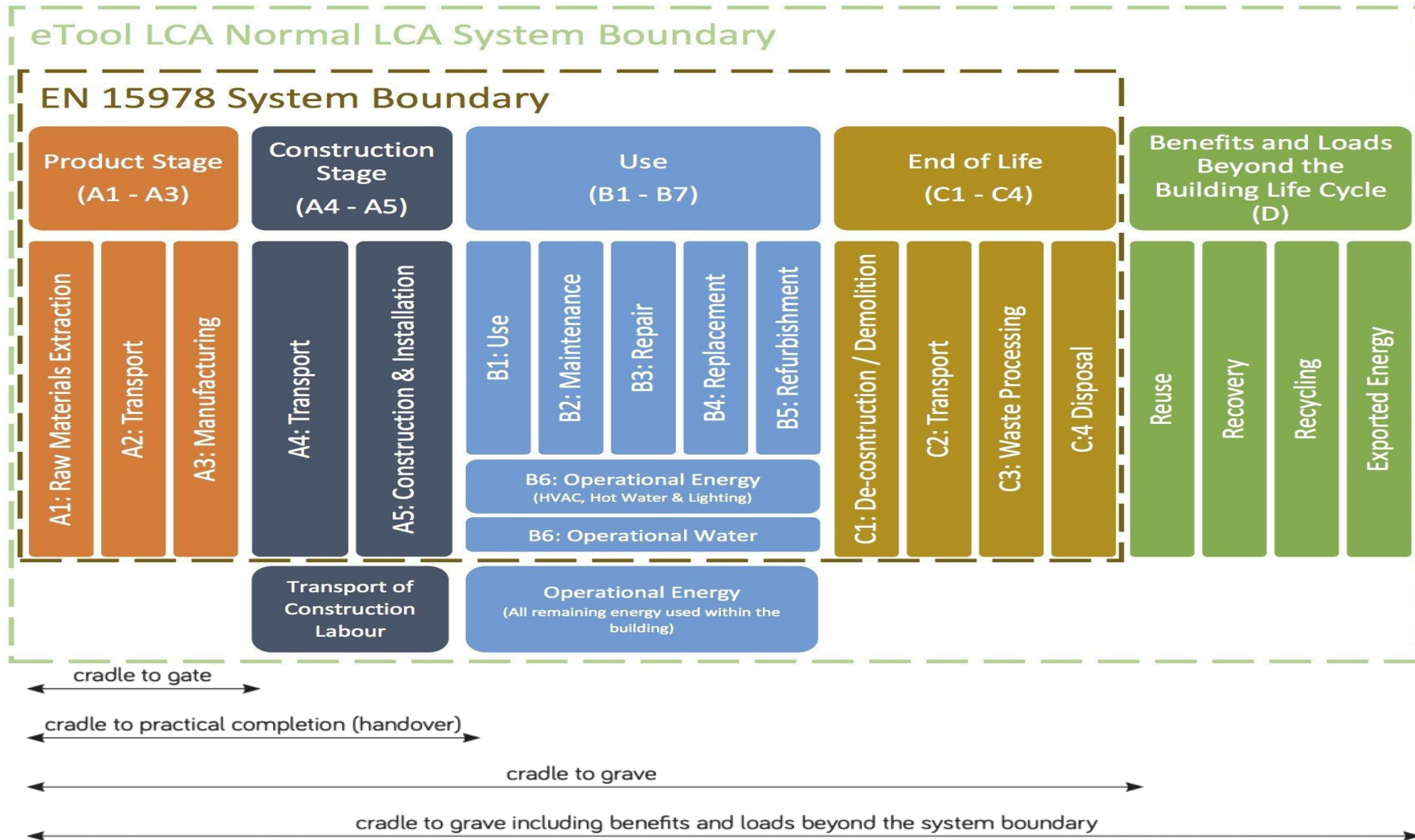
Embodied carbon in materials

- Footprint of production of construction products



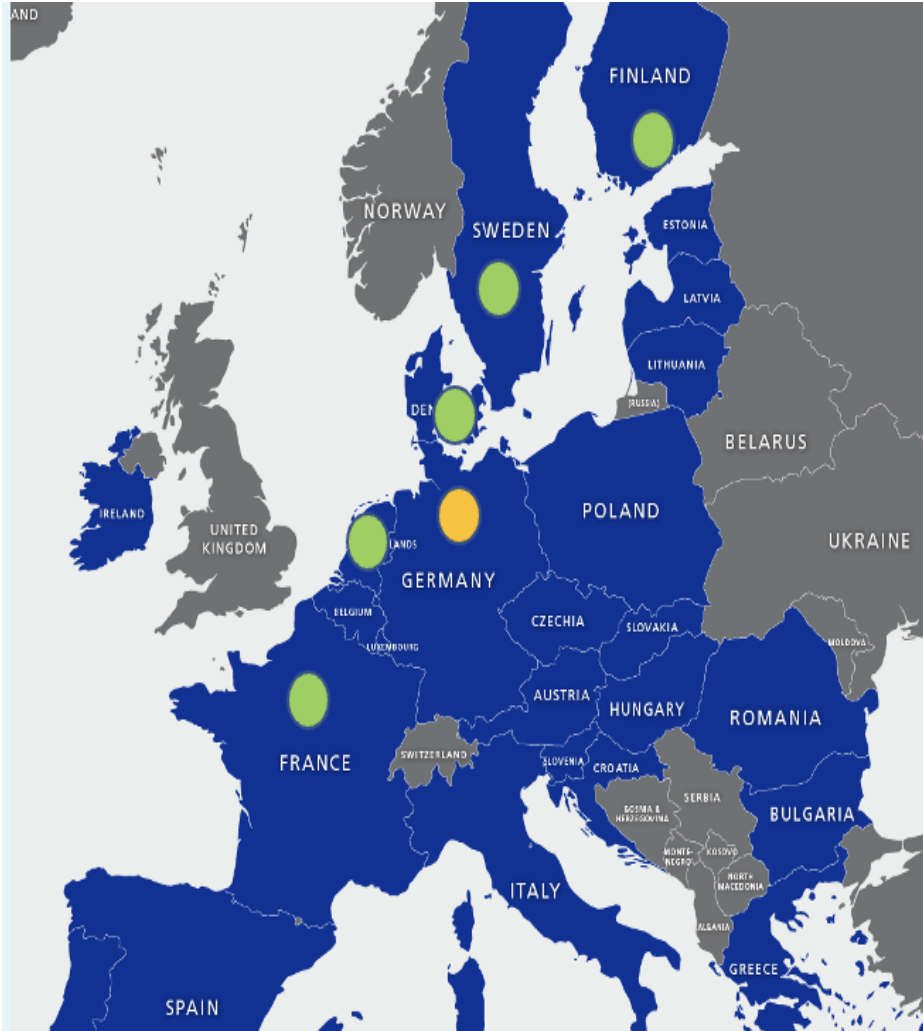
What is embodied carbon

- How do we account for it on the buildings level



Getting Europe moving

- 'Business as usual' is not enough



❑ EU countries are moving - *it is about saving the planet*

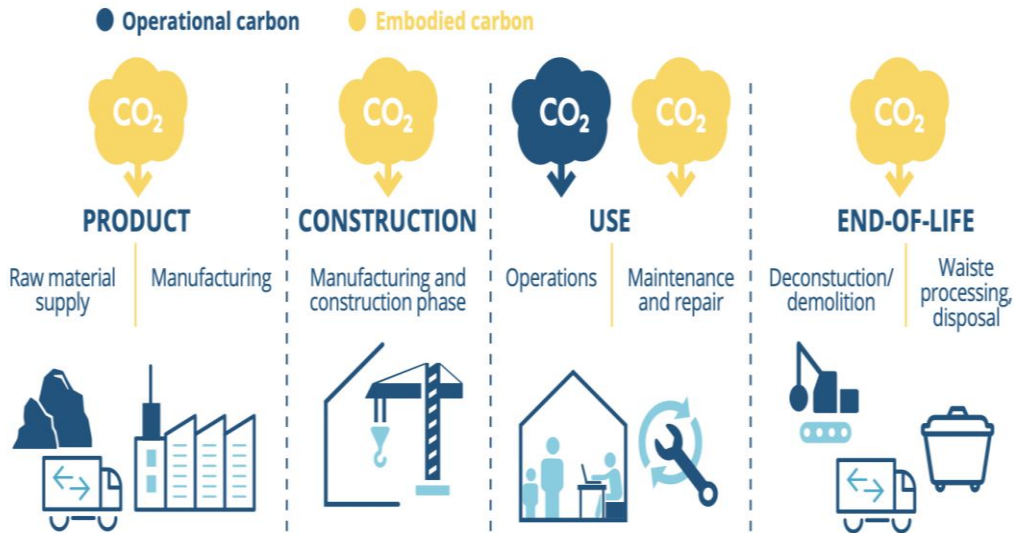
- ❑ *France, Germany, Netherlands, Sweden, Finland and Denmark are measuring the CO2 footprint of buildings and products*
- ❑ *5 of these countries have maximum values for the CO2-footprint of buildings*
- ❑ *These are countries buying Italian construction products !*

❑ EU-legislation – *getting all of Europe moving*

- ❑ *Revision of the Energy Performance of Buildings Directive (EPBD)*
- ❑ *Revision of the Construction Product Regulation (CPR)*
- ❑ *New Ecodesign Regulation (ESPR)*

Getting Europe moving

- Potential regulation to bring down embodied carbon



❑ **Building regulation**

- ❑ *Whole-life carbon regulation of buildings – not just operational energy !*
- ❑ *Whole-life carbon regulates both operational- and embodied carbon*
- ❑ *Maximum values in the EPBD*

❑ **Product regulation**

- ❑ *Regulating the CO₂ / energy footprint of products (CPR & ESPR)*
- ❑ *Creating carbon transparency and requirements (CPR & ESPR)*
- ❑ *Requirements and threshold values for products' carbon, recyclability, reusability and repairability (ESPR)*
- ❑ *Common EU-databases for construction product declarations can create a market of low-carbon products (CPR)*



Getting Europe moving

- Ways forwards



❑ **EU-level regulation must be supported by national governments / MEPs / ministries**

- ❑ *Avoid having too many different national regulations and models to ensure good market conditions and exports*
- ❑ *EU-level thresholds to ensure that national industries do not lose competitiveness*
- ❑ *EU-regulation must build on European standards*

❑ **Incentivize due-diligence for low-carbon products and buildings**

- ❑ *Support transformation of industries and product innovation with lower CO2-footprint*
- ❑ *Public procurement to boost demand-side policies for low-carbon products*

❑ **Increase knowledge, implement and participate in developing European standards**

- ❑ *EN 15978 – for assessments of buildings CO2*
- ❑ *EN 15804 – Environmental Product Declarations*
- ❑ *NEW standards on circular economy in buildings are being developed now !*

(CEN TC 350 SC1) // Ente Italiano di Normazione (www.uni.com & Committee lead Birgitte Ostertag, bo@ds.dk)