



Material use within the carbon budget

Resource Efficiency and Climate Change

NCEC OSLO, Sept 3, 2020

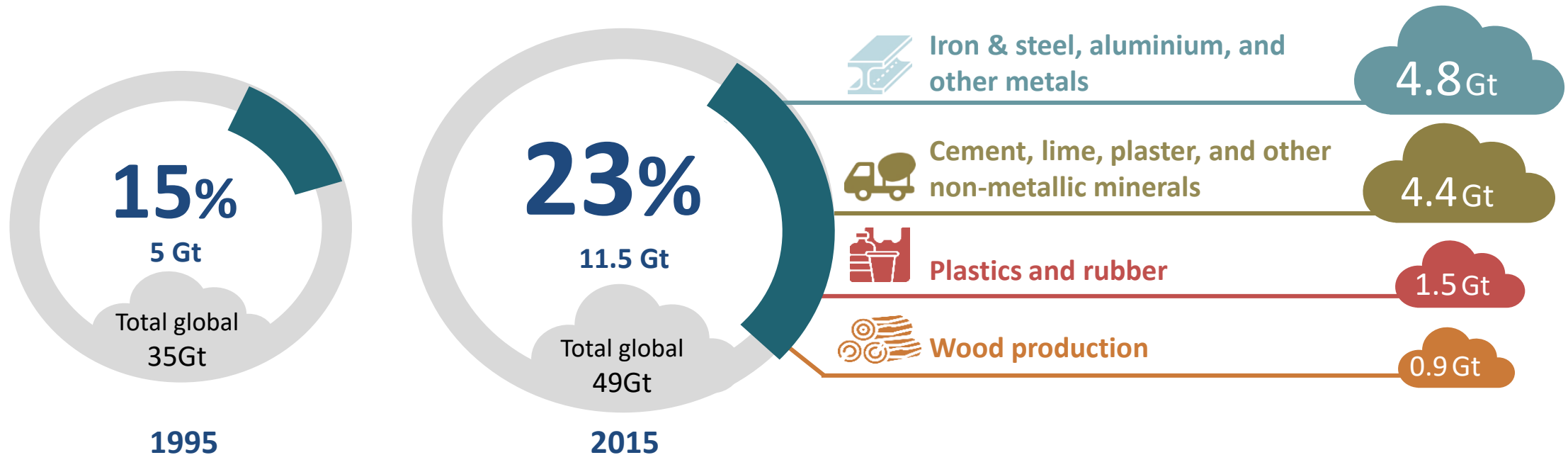
Edgar Hertwich
Norwegian University of Science and Technology



International
Resource
Panel

The production of materials causes 23% of global GHG emissions

Global GHG emissions from a value-chain perspective



Decarbonization of materials production is in the works ... but its commercialization is some way off



Stefan Löfven: "Ett epokskifte i svensk stålindustri" Foto: SVT

Här invigs nya pilotanläggningen: "Ett epokskifte i svensk stålindustri"

31 aug. 2020

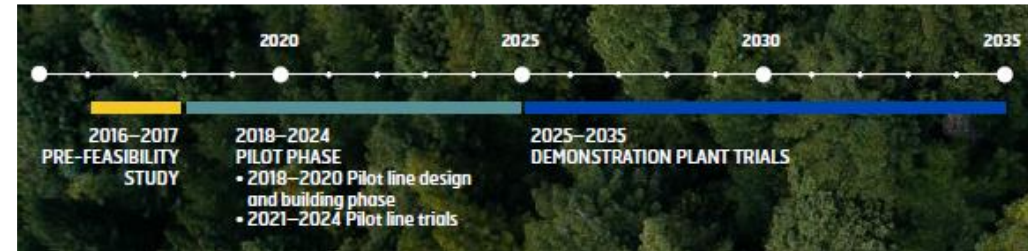
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Nu är ett stort steg taget när det gäller produktion av fossilfritt stål. Under måndagen invigde statsminister Stefan Löfven (S) Hybrit:s pilotanläggning i Luleå.

Målet med Hybrit, ett samarbete mellan SSAB, LKAB och Vattenfall, är att byta ut kokskolet vid stålframställning mot fossilfri el och vätgas, för att på så sätt minska koldioxidutsläppen.

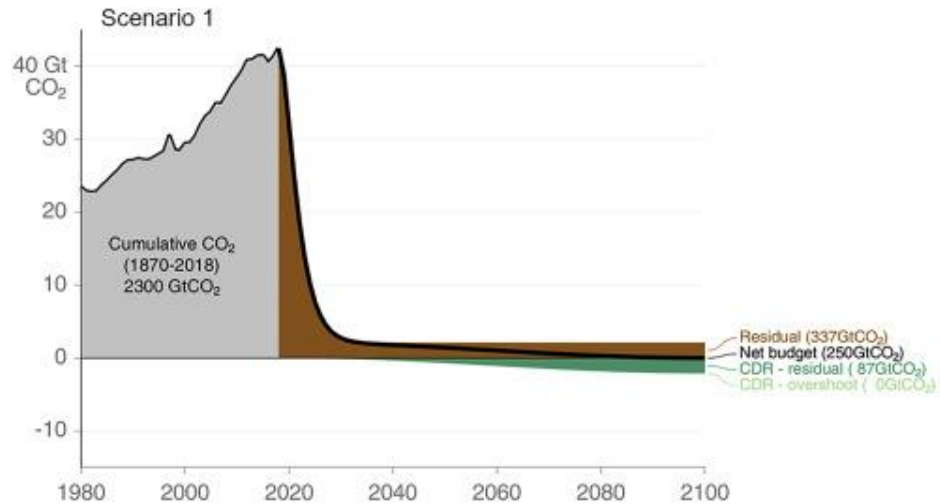
Nu testas delar av tekniken i en pilotanläggning på SSAB-området i Luleå som invigdes under måndagen.

I klippet hör du bland annat statsminister Stefan Löfven om vad anläggningen kommer betyda för Sverige.



Carbon budget

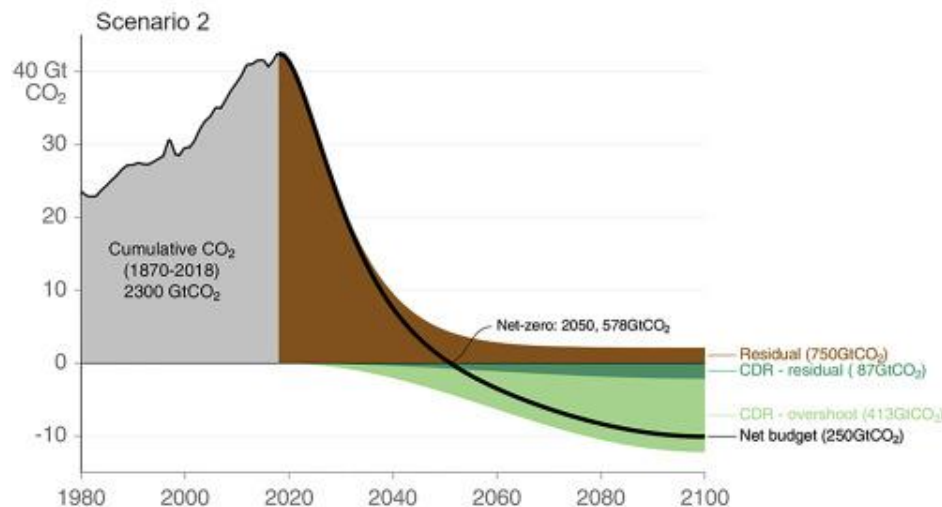
CO_2 emissions until we reach 1.5°C



Aggregate cumulative emissions lead to ultimate temperature rise.

Therefore, they are limited if we want to limit temperature rise.

Rapid drop, faster than what we achieved with COVID 19, needed to keep below 1.5 and avoid expensive carbon removal operation.



We need to reduce GHG emissions from materials before a decarbonization of production is feasible.



UN
environment
programme



RESOURCE EFFICIENCY AND CLIMATE CHANGE

Material Efficiency Strategies for a Low-Carbon Future

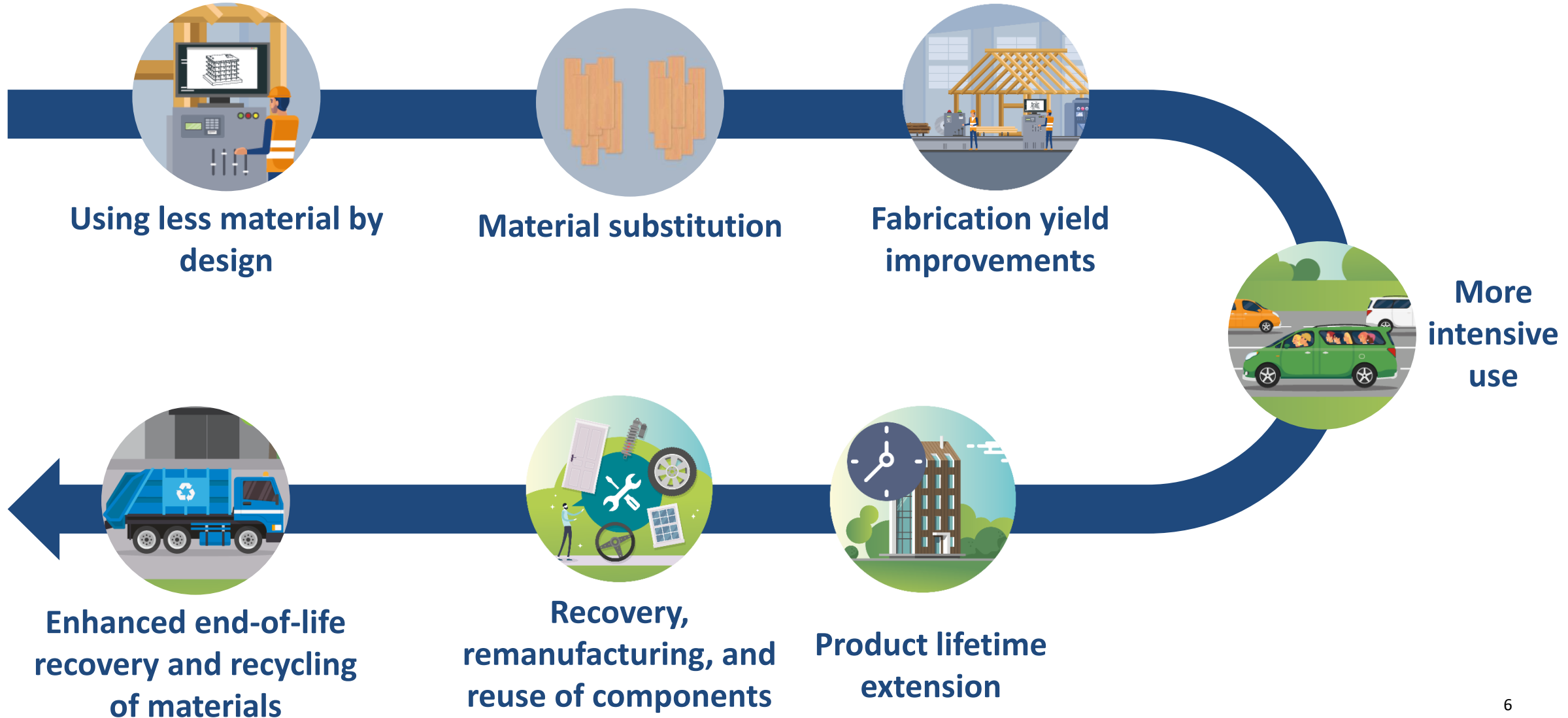
Summary for Policymakers

#ResourceEfficiency4Climate
@UNEPIRP
@EmissionsGap



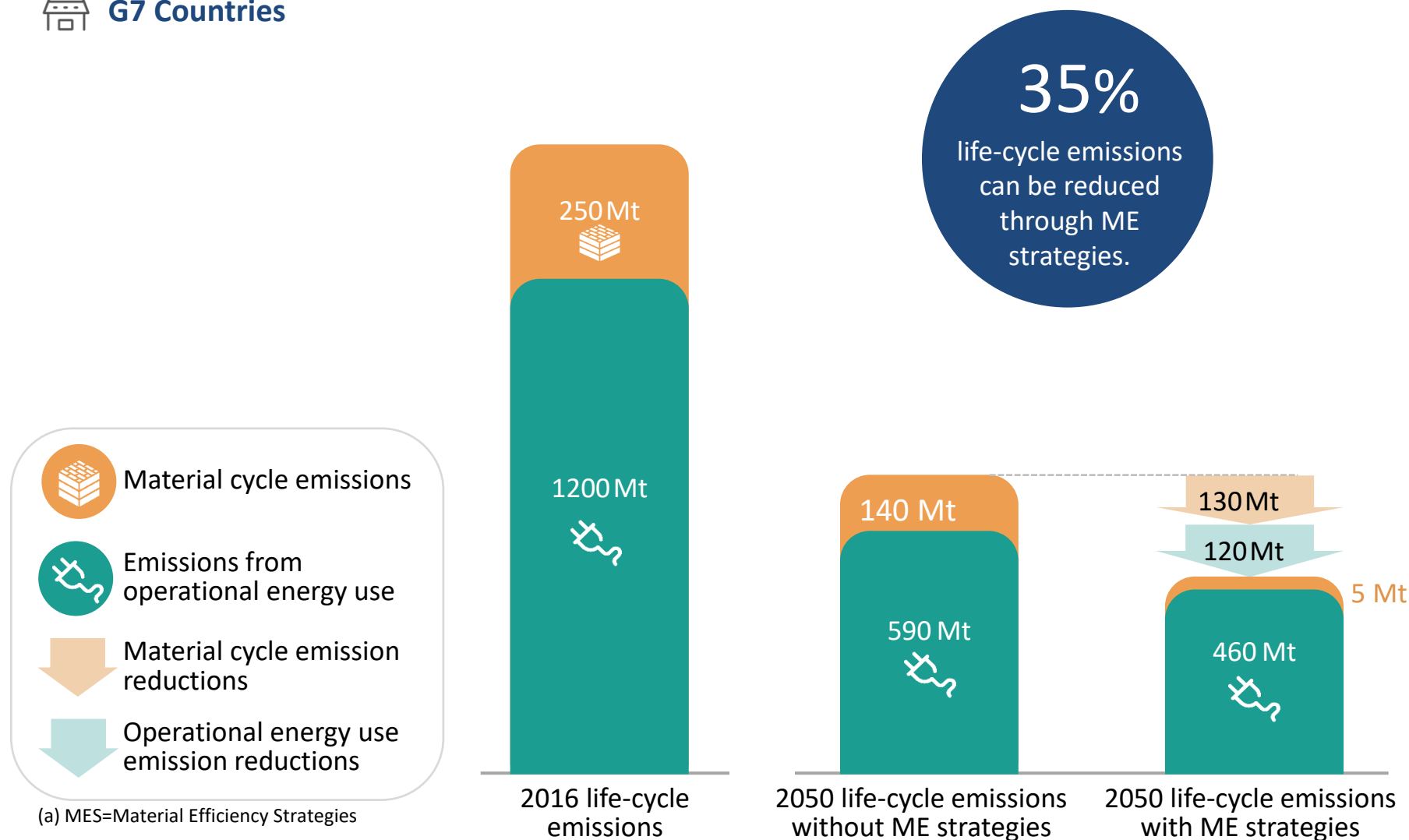
bit.ly/35UsI11

Report assesses seven crucial Material Efficiency Strategies to reduce emissions



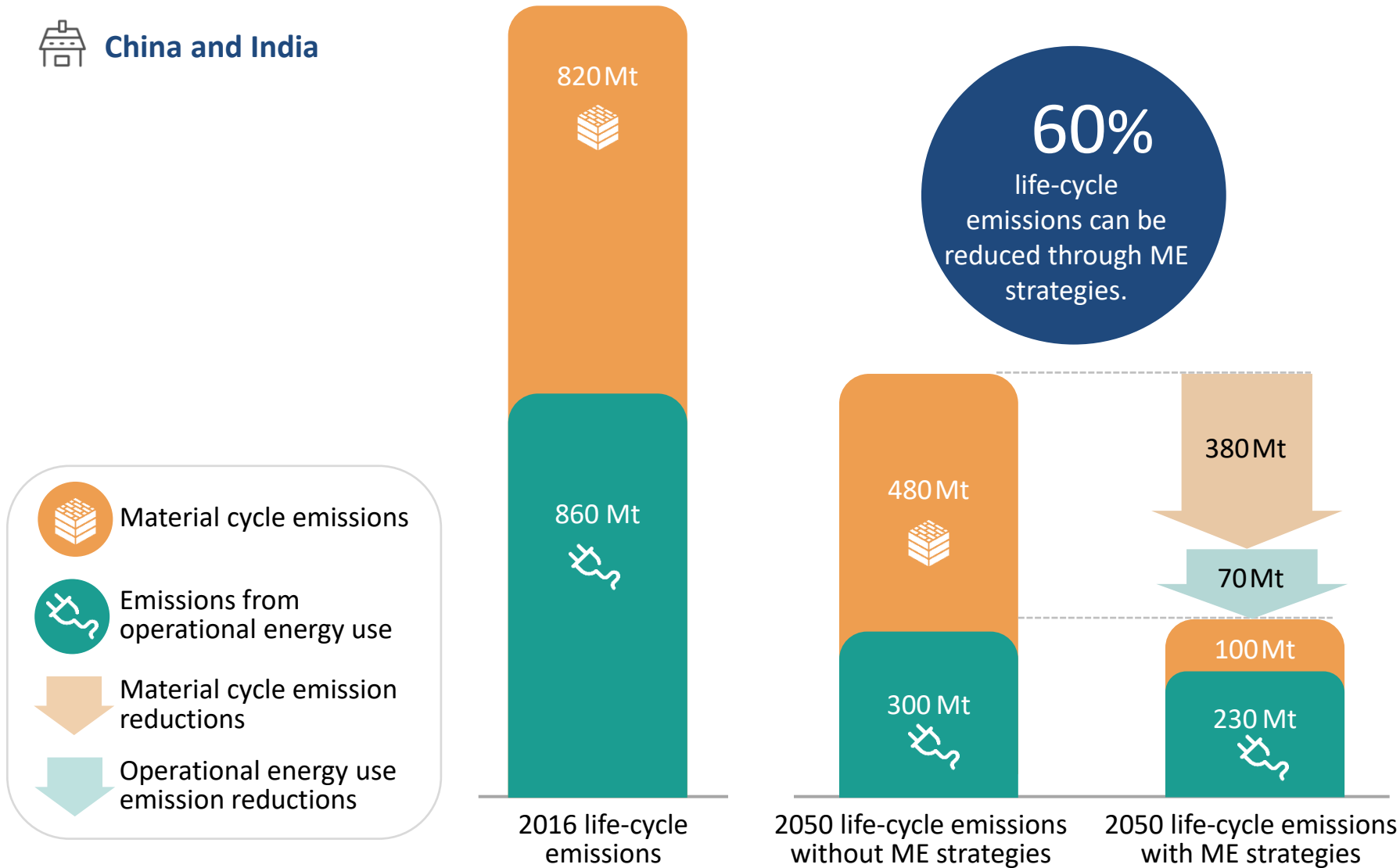
Material Efficiency Strategies can reduce 35% of lifecycle emissions from homes in G7 countries in 2050

 **G7 Countries**



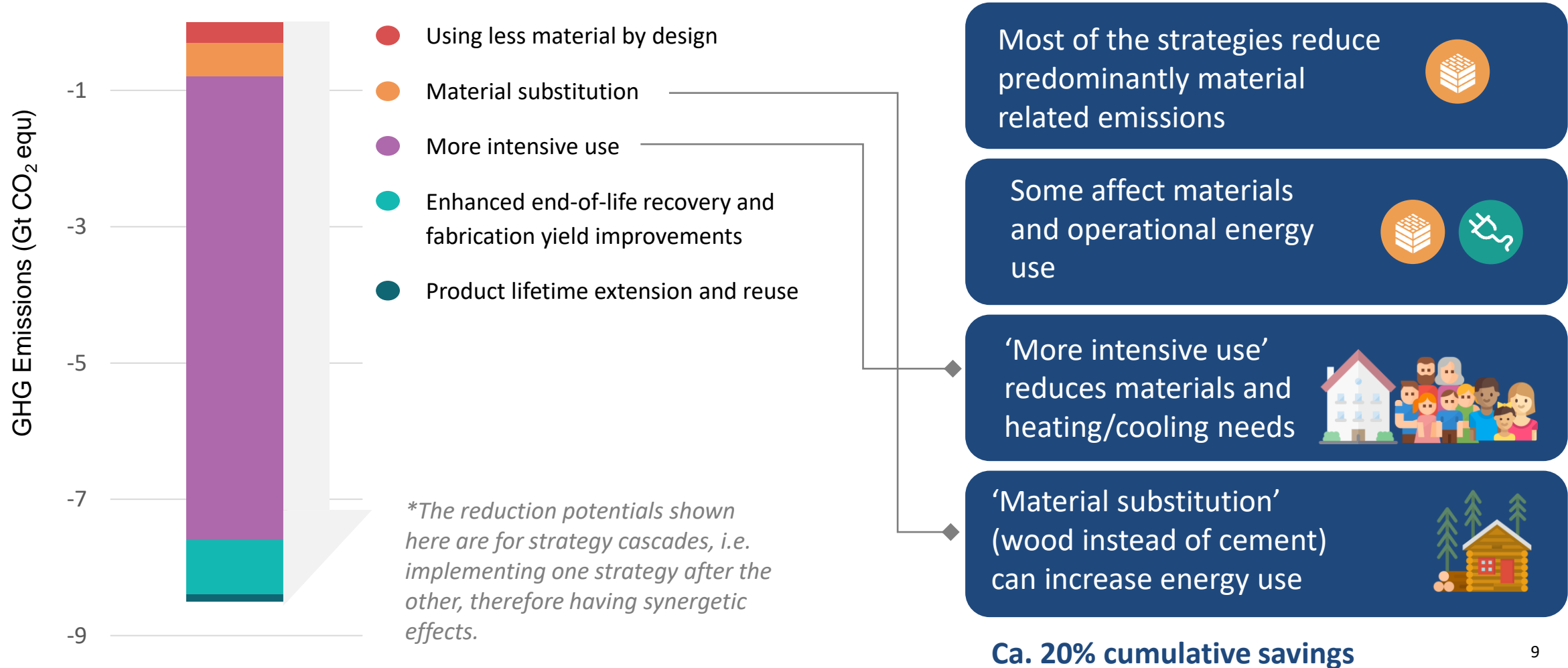
MES can reduce 60% of lifecycle emissions from homes in China and India in 2050

 China and India



More intensive use and recycling are the most important strategies

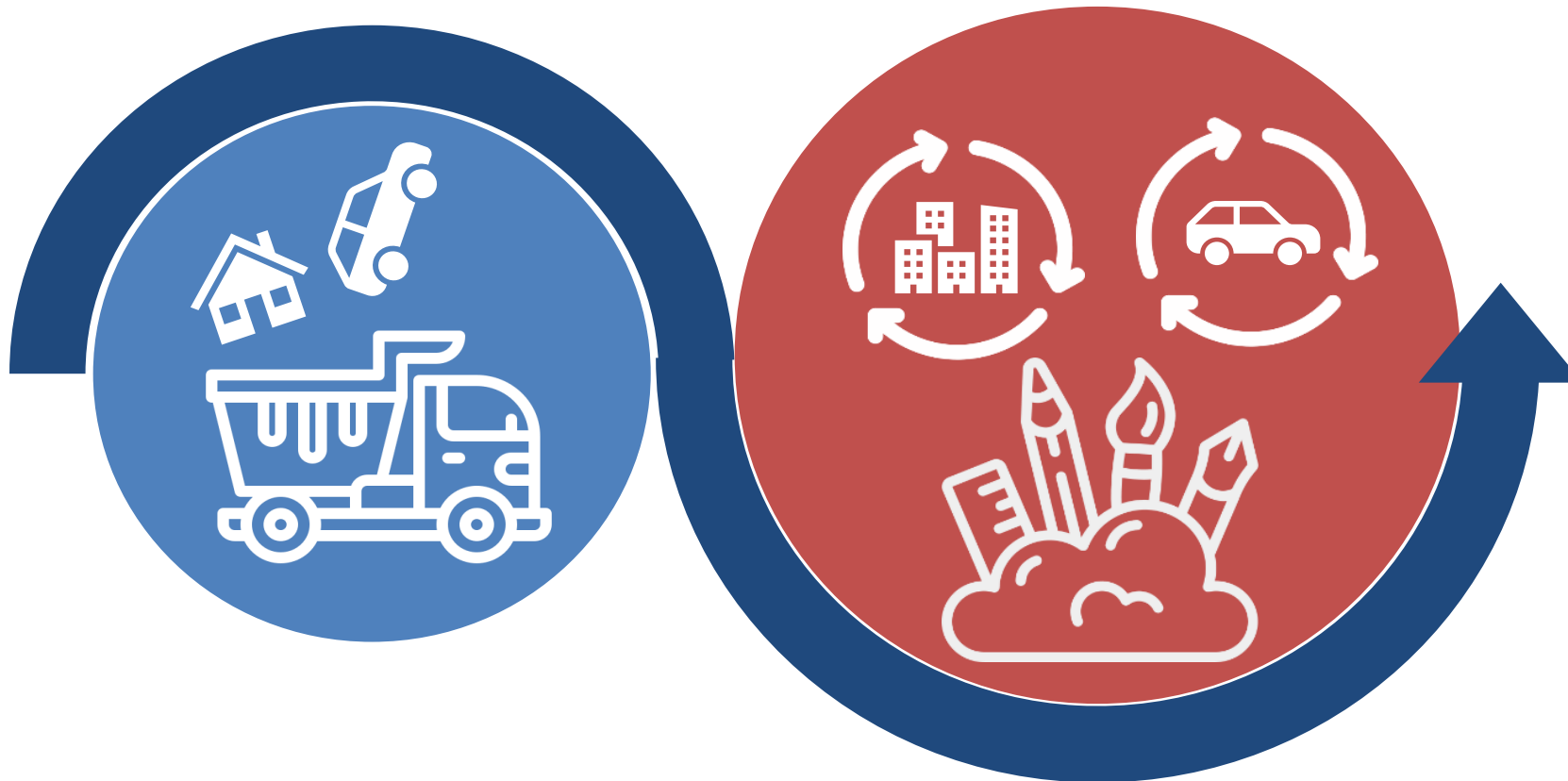
Potential GHG savings from material efficiency strategies for homes in G7 (2016-2060)



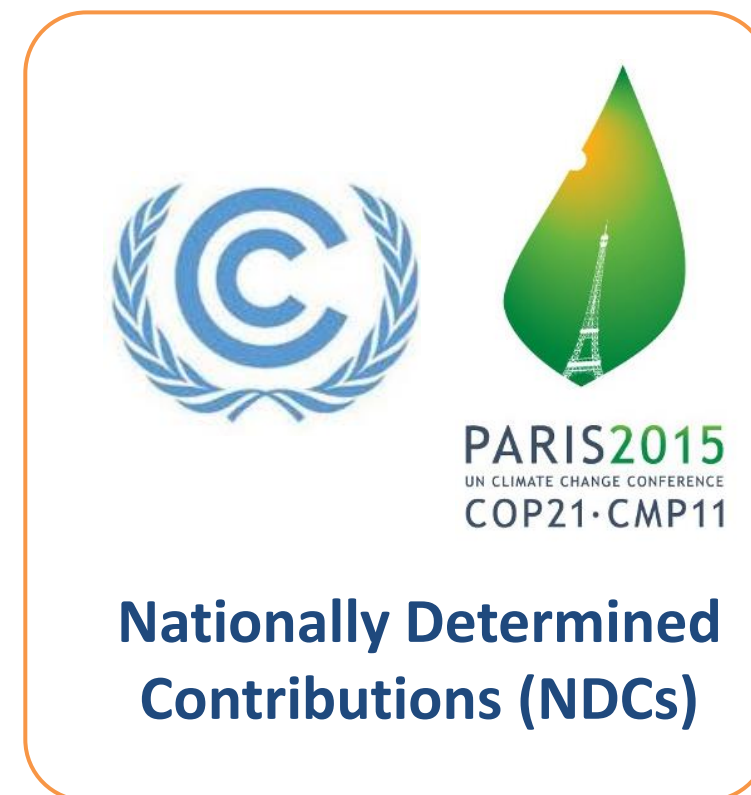
Current material efficiency policies often lack a climate impact perspective and climate policies often miss the material-efficiency perspective

Current material-related policies focus mostly on **end-of life** landfill diversion

However, the **design** of houses and vehicles is a key point of leverage for GHG impact



Policies that apply across sectors may be of equal importance



THANK YOU

Download the summary and other material at:

www.resourcepanel.org



For questions and engagement please contact edgar.hertwich@ntnu.no