Carbon footprint and challenges in infrastructure projects

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CONSTRUCTION CLIMATE CHALLENGE™

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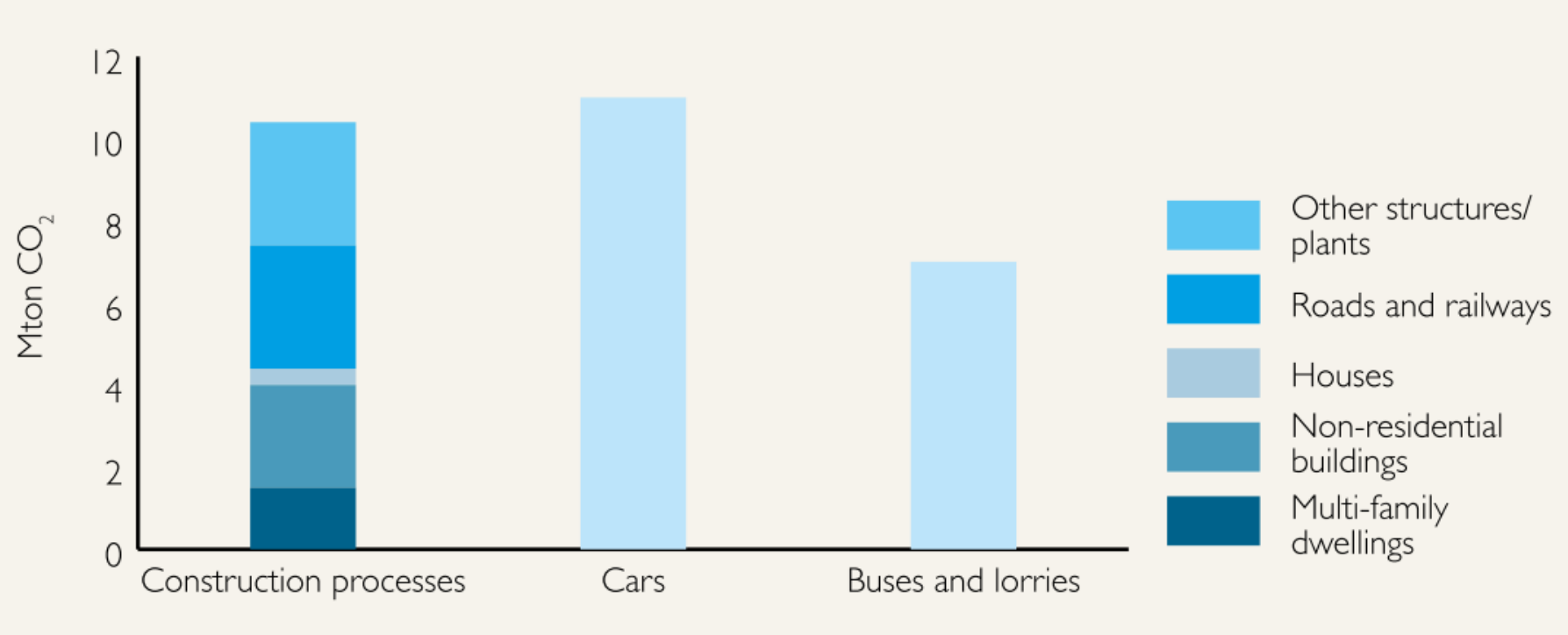
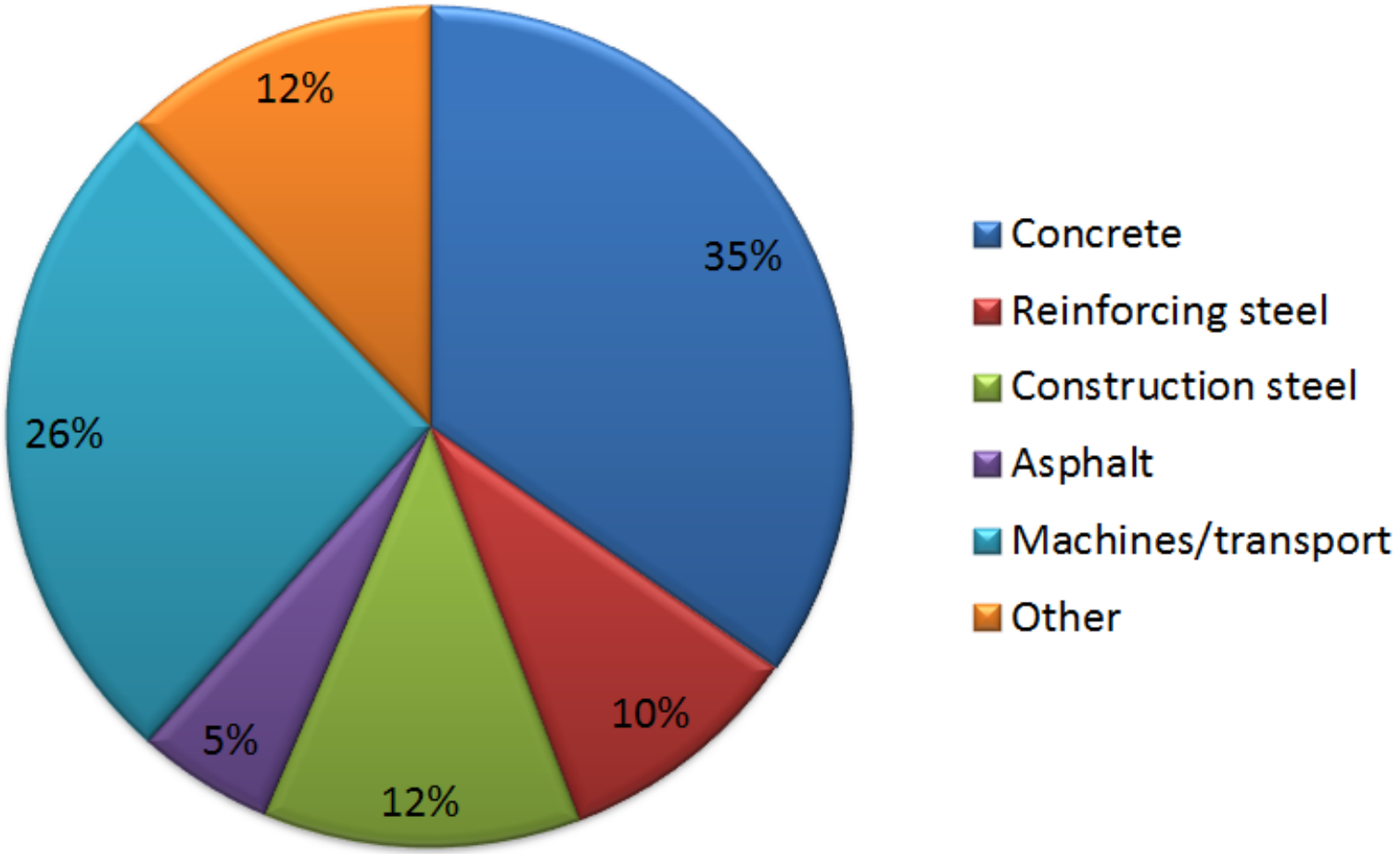
Estimate of the annual greenhouse gas emissions from construction projects in Sweden*



*Royal Swedish Academy of Engineering Sciences, *Cimate impact of construction processes*, 2014

Which are the major sources for climate gas emissions from infrastructure projects?*



* Carbon and energy calculation for National Transport Plan 2014 – 2025, Sweden, WSP

Reduction requirements from Swedish Transport administration since February 2016

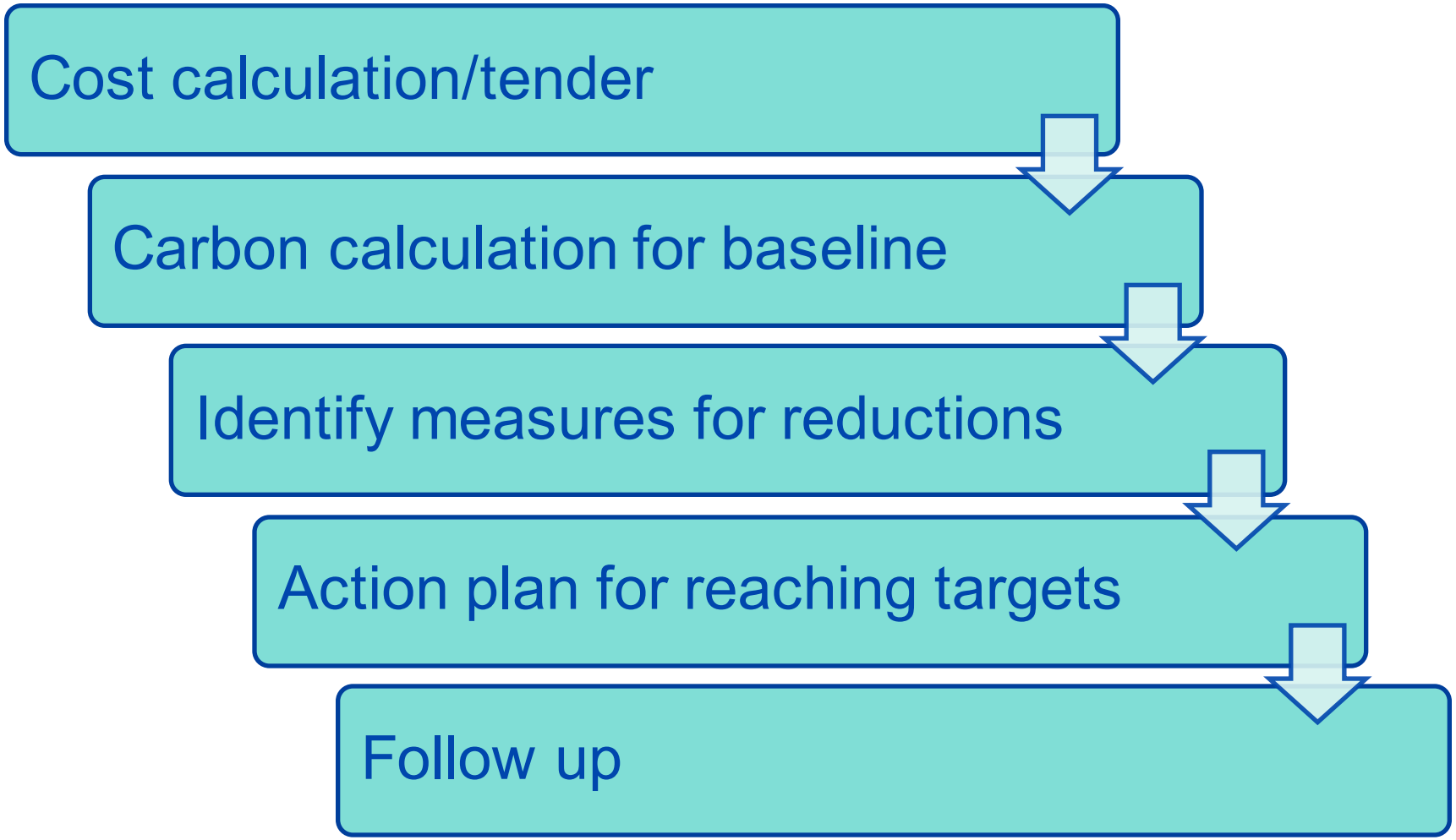
→15% reduction by 2020 compared to 2015

→For detailed planning and construction

→Based on the vision of zero net emissions by 2050

→Functional requirements ➔ stimulate innovations!

Requirements to stimulate a process for improvements



In line with systems for sustainability assessment of infrastructure projects

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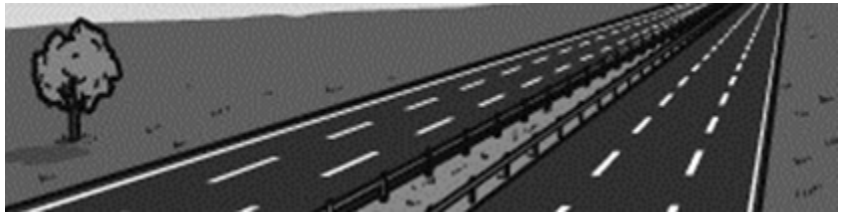
Examples of projects implementing reduction measures

- Several projects in Sweden; Bypass Stockholm, Extension of Subway etc.
- Follobanen, Norway
- Sidney Metro North West, Australia
- 2022 FIFA World Cup, Qatar
- Crossrail and HS2, UK
- North-South Line, MTR, Hong Kong
- California High Speed Railway, USA

Swedish Transport Administration model for Carbon Calculation

10 km



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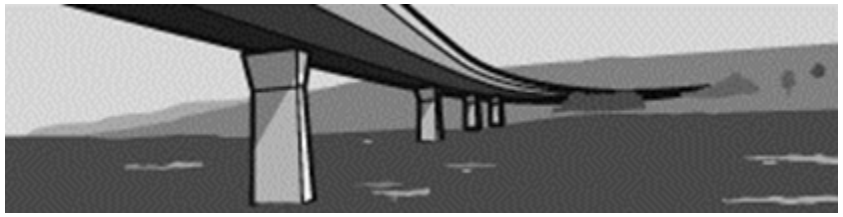
1 km



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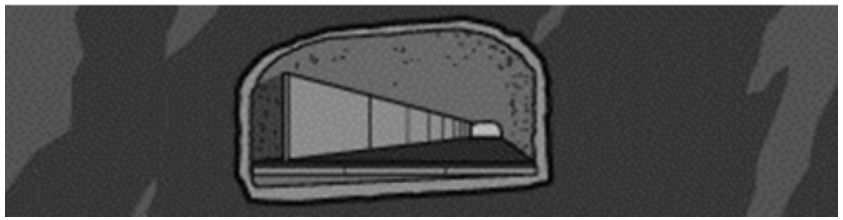

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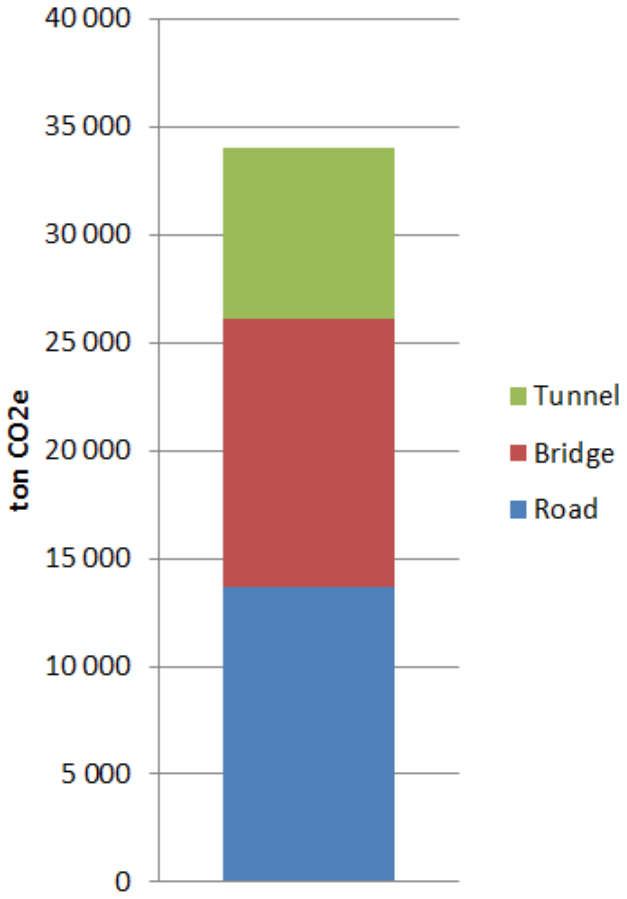


Consequence analysis of requirements – in dialogue with the industry

→Existing regulations and instruments is not enough!

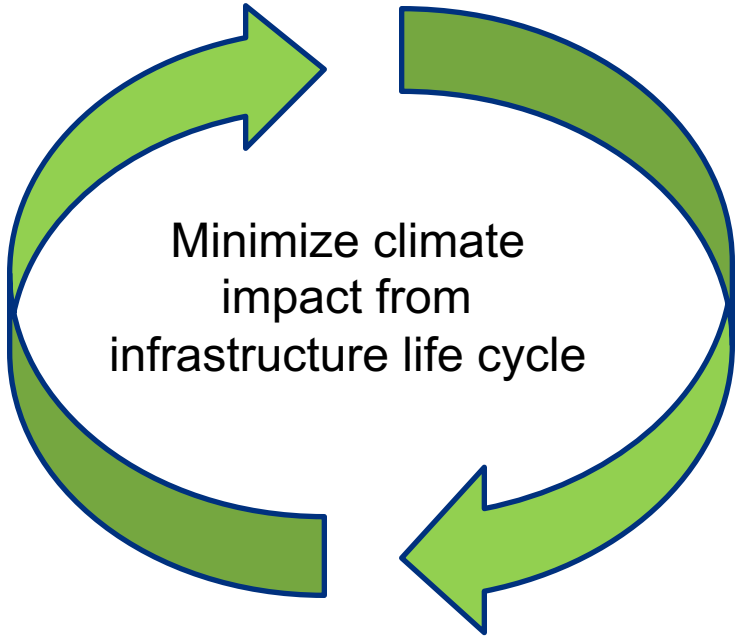
→There are large reduction potentials just by using todays best available technology!

- Up to 20-25% until 2020 and up to 50% until 2025!
- And this onlys for detailed planning and construction…

→**Enthusiasm! We are ready!**

How do we meet the challenge? – Together!

Public and private clients
- create drivers and incentives



Contractors and consultants
- find new innovative solutions

Suppliers of material and equipment
- product development

Just do it! To start working with it is most important!
Details and percentages are less important.