

# Embedding climate mitigation into procurement

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# Why requirements to reduce GHG?

- National goal that Sweden shall be climate neutral 2045 at latest.
- Ambition from the Government - be the first fossil free welfare state in the world.
- The Transport Administration shall according to its instruction contribute to national climate goal.
- GHG emissions from infrastructure (building, operation and maintenance) in a lifecycle perspective stands for 5-10 percent of the total emissions from road- and rail transport system.
- Transport Administration has the power to change these emissions through procurement.



# From goals to action

- Starting point – the goal in the Climate act decided by the Parliament Sweden shall not have any net emissions of GHG emissions 2045.
- The Transport Administration set a long term goal and two intermediate goals:
  - a long term goal of a climate neutral infrastructure by the latest 2045
  - 30 percent reduction of GHG emissions to 2025 and 15 percent reduction to 2020 compared to 2015
- Impact assessment together with industry showed the goals could be achieved at no or low extra cost.
- Goals implemented in procurement from 2016.



# Requirements in procurement of planning, design and building

**≥50 MSEK  
(≥€5M)**

Requirement on consultant to present measures in the planning phase, Climate calculation

Quantitative requirement on consultant or turnkey (design) contract, Climate calculation

Quantitative requirement on construction contract, Climate calculation

Climate declaration to control compliance of requirements to reduce GHG emissions

**<50 MSEK (<€5M)  
and  
maintenance**

Requirement on consultant to present measures in the design phase

Requirements on materials and energy in construction contract

Control of compliance of requirements on materials and energy, EPD and fuel declaration



Measurement selection study



Planning phase



Design phase



Building phase

# Requirements in design and building 2016- *investment projects $\geq 50$ MSEK*

- Transport Administration defines a baseline for the project using Klimatkalkyl (referring to emission levels year 2015).
- In the procurement a requirement is given to reduce the GHG emissions with x percent compared to the baseline. On average:
  - 15 percent reduction by 2020 compared to 2015
  - 30 percent reduction by 2025 compared to 2020
- If significant change of scope of works, the baseline will be updated. The percentage reduction requirement will however be retained.



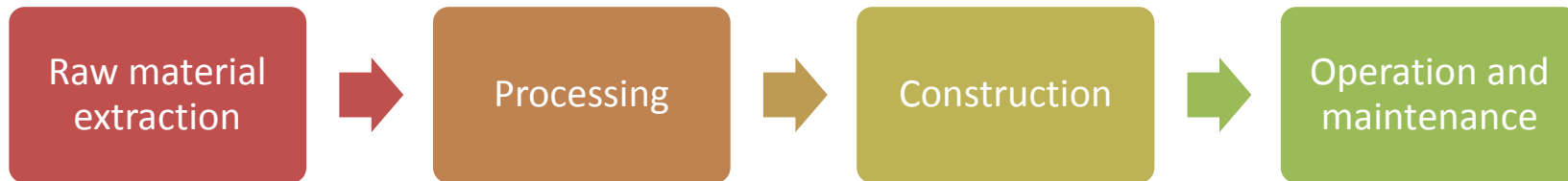
# Requirements in design and building 2016- *investment projects $\geq 50$ MSEK*

- At the end of the project, the contractor must demonstrate that the requirement has been achieved through a climate declaration.
- Performance of project specific materials has to be demonstrated through EPD. Always the case for concrete, reinforcement steel, construction steel and fuels.
- Bonus model presented in procurement for larger GHG reduction than required. Bonus paid at climate declaration.



# STA climate calculation tool - Klimatkalkyl

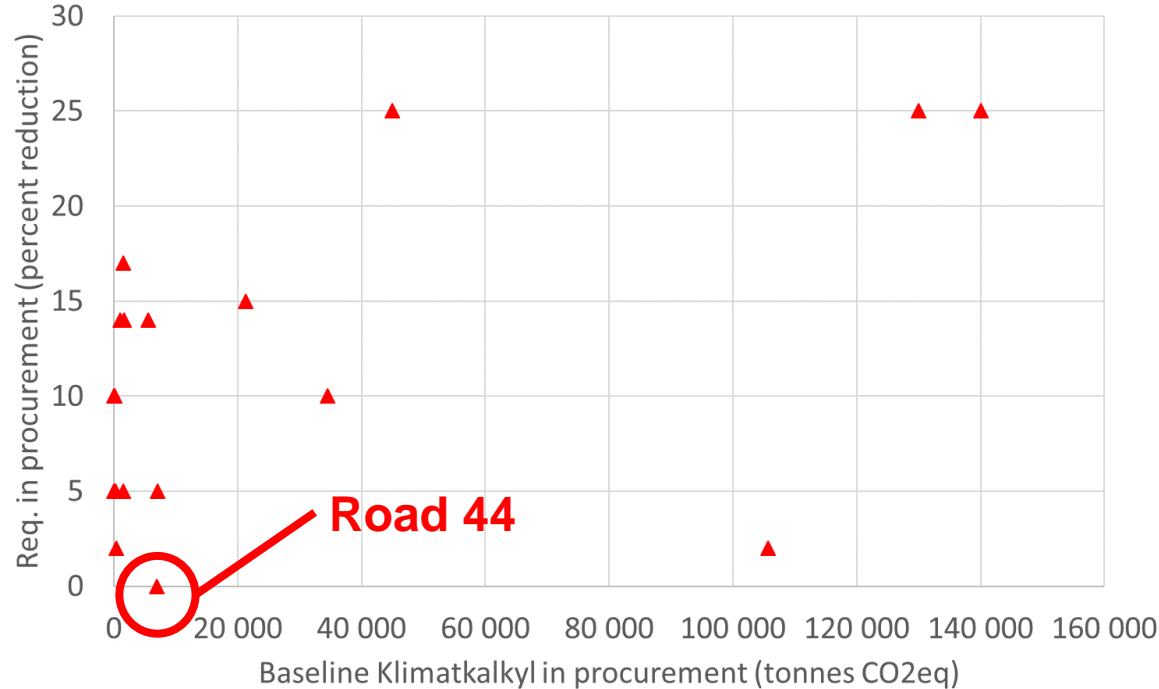
**Klimatkalkyl:** Enables efficient and consistent approaches to calculate GHG emissions and energy use for infrastructure in a life cycle perspective



- Owned and developed by the STA
- Builds on existing data, simple to use
- Used from early planning phase to final infrastructure with increased level of accuracy
- From 2015, climate calculations required for new investment measures  $\geq 50$  MSEK
- Since February 2016, the climate calculation model has also been applied for requirements to reduce GHG for new investment measures  $\geq 50$  MSEK



# Requirements in procurement of investment projects *larger than 50 MSEK (€5M)*



**18 percent**  
reduction on  
average

Total minimum reduction  
**89 000 tonnes**



# Road 44 Lidköping – Källby

## *First project with climate requirements*

Turnkey contract with design and building of:

- Re-construction and widening of road 184 to 2+2 road on a 1.6 km stretch.
- New construction of 7 km 2+1-road new road 44 i a stretch south of village Filsbäck.
- New construction of 7 concrete bridges and 2 soil-steel composite bridges.
- Re-construction and new building of 3.5 km local roads and a number of private roads and walking and cycling roads.



# Procurement – Road 44

- 1:th project med climate requirements.
- The request for tender was sent out March 2016
- Base line 6990 tonnes CO2 eq.
- 0 percent reduction.
- Bonus for reductions up to 10 percent.
- For 10 percent reduction a bonus of 1% of contract value.
- No penalty.
- The baseline climate calculation was given in the request.
- Skanska was given the contract worth 232 MSEK (€23M)



# Measures the entrepreneur carries out

## Measures in design

- Reduce amount excavation and filling
- Optimise non-bound superstructure
- Optimise pavement

## Measures in building phase

- Choice of fuels (HVO100 instead of diesel)
- Choice of suppliers (reinforcement steel)
- Choice of material (plastic pipes instead of concrete)

**Reduction 14 percent** compared to updated baseline



# Requirements on materials and fuels from 2018

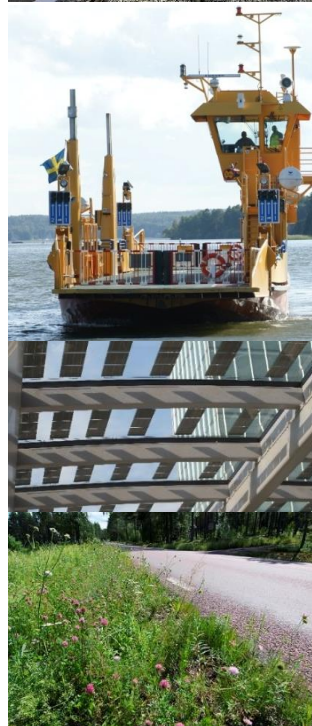
*in smaller investment measures (<50MSEK) and in all maintenance contracts*

Product/material	Contract ends 2020-2024	Contract ends 2025-2029
Reinforcement steel	$\leq 0,72 \text{ kg CO}_2\text{e/kg steel}$	$\leq 0,52 \text{ kg CO}_2\text{e/kg steel}$
Construction steel	Environment product declaration type III (EPD) for selected products	Environment product declaration type III (EPD) for selected products
Cement	$\leq 0,70 \text{ kg CO}_2\text{e/kg cement}$	$\leq 0,62 \text{ kg CO}_2\text{e/kg}$
Concrete	25 % reduction CO <sub>2</sub> e Environment product declaration type III (EPD) for concrete	35 % reduction CO <sub>2</sub> e Environment product declaration type III (EPD) for concrete
Fuel to vehicles and machines in Metropolitan areas (Stockholm, Gothenburg and Malmö)	At least 20 percent of energy use for vehicles and machines shall be renewable electricity or sustainable fuels not included in reduction duty (for example HVO100 or B100).	

# More climate mitigation measures

*That the Transport Administration carries out*

- Long term planning in line with climate objectives.
  - Scenarios and prognosis how transport can meet climate objectives
- Urban environment agreements
  - Support infrastructure public transport cycling incentives sustainable cities
- Climate neutral road ferry operation in 2045
- Only buying renewable electricity from 2018.
- Strategy for electric production in the infrastructure 2018.
- Pilot on biodiverse energy production 2018-2019.
- Climate requirements on procured transports.
- Eco driving mandatory for driving licence.
- Speed cameras (ATC) which also contributes to lower emissions.
- And more....



# What happens next?

## Extending to greater part of procurements

- Climate requirements in procurement of pavement contracts in 2019.
- Climate requirements in procurement of summer and winter maintenance contracts in 2019.
- Requirements for climate performance and EPD in procurement on railway materials 2016-

## Evaluation and R&D, examples

- Control Station 2018 with evaluation of requirements and development of goals and requirements beyond 2030.
- Research on transformative changes needed to reach climate neutral infrastructure, Mistra Carbon Exit.

