

Experience from public
procurement of
infrastructure projects
with high demand on
carbon reduction

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TRAFIKVERKET



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)
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

≥50 MSEK (≥€5M)

Requirement on consultant to present measures in the planning phase

Quantitative requirement on reduced GHG emissions on consultant or turnkey (design) contract

Quantitative requirement on reduced GHG emissions on construction contract

Climate declaration to control compliance of requirements to reduce GHG emissions



Measurement selection study



Planning phase



Design phase



Building phase

Requirements in design and building *investment projects ≥ 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.



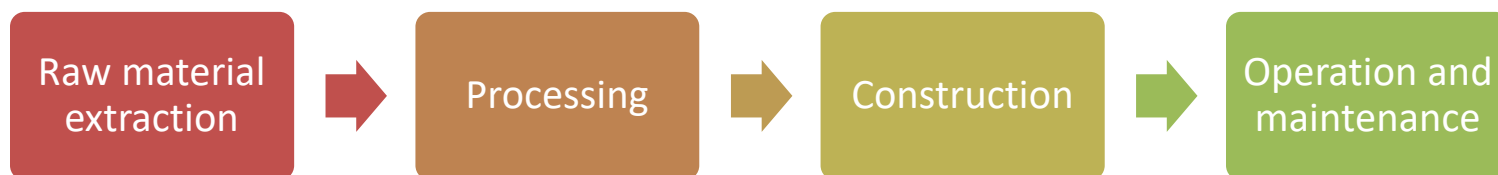
Requirements in design and building *investment projects ≥ 50 MSEK*

- 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 ≥ 50 MSEK
- Since February 2016, the climate calculation model has also been applied for requirements to reduce GHG for new investment measures ≥ 50 MSEK

Requirements for emission reduction only one part of strategy for reducing GHG emissions from infrastructure

- **Functional requirements for emissions reductions and energy savings are the key.**
- Research and demonstration projects to promote promising technologies.
- Identify barriers to use solutions that are profitable and develop these as well as regulations to make them possible to use.
- Ensure that today's solutions work in the future.



"Example from the business"

Frame work - Concrete sleepers

- Contract was signed early 2017 with Strängbetong and A-Betong. The contracts apply for 5+5+5+5 years and includes fastening equipment.
- Base line in number of tonnes, CO₂: **55 kg/piece**
- Contract clause – Minimum to reduce: **4 kg (1:st period) another 5 kg 2:period**
- Bonus, if target is reached, max 2% of value of delivered goods (0,2% per percent extra reduction).
- Requirement to deliver EPD before delivery can start.
- Result **45,5 kg/piece** 1:st period (full bonus) and lower cost.



"Example from the business" **Civil- and track works Marmaverken-Söderhamn**

- Contract was signed early 2017 with NCC Sverige AB. It is design- and build contract for ground and bridge works and construction contract for the railway works.
- Base line in number of tonnes, CO₂: **254 ton/year**
- Contract clause – Minimum to reduce: **10%**
- Bonus if target is reached, max 1,4 million. SEK (0,9% of contract value))



What happens next?

Extending to greater part of procurements

- Requirements for climate performance and EPD in procurement of sleepers and rails for switches in 2018.
- Pavement maintenance, new requirements tested in pilots in 2018 and introduced in procurements from 2019.
- Follow-up methodology required in procurement of maintenance contracts in autumn of 2018.
- EPD req. in extension of rail contract for line in 2018.

Evaluation and R&D

- Control Station 2018 with evaluation of requirements and development of requirements beyond 2030.
- Mistra Carbon Exit etc. research

