KEINO Competence Centre for Sustainable and Innovative Public Procurement

HIGH REDUCTION POTENTIAL

Infrastructure construction and maintenance services

The realisation of emission reductions in procurements is affected by

- Emissions from construction and buildings as well as emissions from traffic and construction site machinery
- Low-carbon options for procurement and low-carbon solutions and procurement models on the market
- Existing criteria, tools and means to determine and verify low-carbon solutions
- The know-how of the procurer as well as other existing objectives and boundary conditions of the procurement

Construction site activities are estimated to generate 5% of the total carbon footprint of the built environment, while construction accounts for 25% of total public procurement emissions. Approximately 25% of traffic emissions are generated as a result of construction sites. The main source of emissions is the use of fossil machinery and transport equipment.

Emission reduction measures and their emission reduction potential*

- Improving resource efficiency: using resource-efficient solutions instead of virgin landmasses
- Crushed concrete
- Low-emission asphalt
- Industrial by-products
- Minimising the need for transportation
- Making use of masses in the site
- Intermediate storage of masses at or near the site for reuse
- Disposal of the masses as close as possible to the target
- Construction site services
  - Fossil-free site – operations 90%
  - Emission-free site – operations 100%
- With the help of the emissions database for infrastructure construction, it is possible to identify low-carbon product alternatives per site
  - Infrastructure construction emissions database

*) The estimation of the emission reduction potential is based on individual case studies in which emission reductions indicated by percentages have been achieved for the measure in question. The percentages describe the difference to the alternative solution presented for the applicable life cycle stage(s), depending on the case. However, the amount of emission reductions depends on the entity, circumstances and starting data, so the percentages are only indicative and cannot be directly generalised or compared with each other. Source: Siiskonen et al. 2022.

Examples of low-carbon solutions for regional construction

The Green Deal commitment for emission-free construction sites

- **Lukutori in Espoo – emission-free construction site pilot**
- **Kuninkaantammi in Helsinki – fossil-free construction site as the criterion**

Learn more about the Green Deal commitment

In Oslo, all construction sites are fossil-free

Read more KlimaOslo, 2019

Hämeentie (infrastructure project)

- **Emissions calculation for different scenarios**
- **Intermediate storage and re-utilisation of land masses**
- **Fossil-free site**
- **Estimated savings of 27% compared to normal**
- **Planning the renovation of a street section - Case Hämeentie, City of Helsinki**

Read more about case Hämeentie (in Finnish)

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