

Denmark

InfraLCA



TYPE OF TOOL
*Methodology/
Guidelines/
Requirements*



MAIN SECTORS
Transport



THEME
Green



INFRASTRUCTURE GOVERNANCE PILLARS
Asset performance throughout its life

In a nutshell



OBJECTIVE: InfraLCA a tool used for quantifying the environmental and climate impact of infrastructure projects.



Agency in charge
Danish Road Directorate; Banedanmark



Levels of government
National



Year of implementation
2021



Current status
Fully operational

Overview

InfraLCA is a tool for performing life cycle assessments of infrastructure projects. It calculates the environmental and climate impact of a project in a life cycle perspective and therefore includes raw material extraction, production and transport of materials, construction activities, possible replacement at the end of the life of materials, as well as end-of-life and recycled materials. The tool can be used at different stages of the infrastructure life cycle: political phases, early design phases, detailed design and post-calculation of completed construction project. It enters quantities and tasks from a construction estimate or tender lists and estimates the potential environmental impact of the construction project. As a starting point, the tool uses its base values in the analysis, which apply to emission factors, transport distances and lifespans of products and materials. The default values can be overridden to use project-specific values. The estimated environmental impact includes 13 mandatory categories covering climate change, ozone depletion, photochemical ozone formation, acidification, eutrophication, depletion of abiotic resources and water use. In the long term, there will be a baseline inventory of a project's CO₂ emissions for all Banedanmark's and the Danish Road Directorate's projects. This will serve as a reference when making decisions about changes to infrastructure projects allowing estimation of the impact of a decision on a project's CO₂ emissions. As a project progresses, design decisions and other details are introduced resulting in changes to the baseline inventory.

InfraLCA has been used to estimate the total amount of CO₂ equivalents in the life cycle assessment of the environmental impact of the construction of the third Limfjord connection. The project is a 20 kilometer long 4-lane highway west of the Danish city of Aalborg, via the island of Egholm. The motorway will be led under the Limfjord in a tunnel and above Nørredyb on bridges to improve accessibility for road traffic to and from Vendsyssel and reduce congestion on the existing E45 connection.

REFERENCES:

- Danish Road Directorate, *InfraLCA*, <https://www.vejdirektoratet.dk/InfraLCA>