

Market dialogue on climate measures in future construction projects

Information



Information on the market dialogue

1. Introduction

The Danish Road Directorate, Banedanmark og the Danish Building and Property Agency have begun an analysis on possible climate measures that are possible to incorporate into our future projects. Each of the three agencies, alongside contractors, material suppliers and other external actors, are already working on measures that can reduce CO₂ emissions from construction projects. Therefore, The Danish Road Directorate, Banedanmark og the Danish Building and Property Agency would like to invite the market to participate in a common dialog about what CO₂ measures that are possible to incorporate into future projects.

All three agencies have worked over a number of years to develop LCA models¹ that are used to analyse and calculate the climate and environmental impact from a life cycle perspective for products, materials, transport and work used during the construction project. One of the intentions behind the development of the LCA models *InfraLCA* and *LCAbyg* was to be able to set requirements for CO₂ reductions in connection with planning and construction as well as operation, renewal and maintenance of future projects. *InfraLCA* and *LCAbyg* have now been developed and are widely used for the planning of construction projects. Hence requirements for CO₂ reductions must now be realised, with the attained knowledge from the models. Therefore, the three agencies wish the dialogue to concentrate particularly on which climate measures it is possible to start incorporating into future projects, as well as which changes the client, contractors and material suppliers can incorporate into future construction projects.

Against this background does the three agencies invite their suppliers to participate in the market dialogue by answering several questions about what climate measure they asses can be incorporated into future projects. Suppliers who have delivered construction projects within the last 3 years for over DKK 25 million are encouraged to participate in the market dialogue.

2. The market dialogue

The purpose of this market dialogue is to survey what climate measures the market considers to be the most obvious and appropriate to implement in future construction projects.

The market dialogue consists of two documents:

1. An information document: *1. Market dialogue from BDK, BYGST and VD (EN)*. This describes the process for the market dialogue as well as information about some

¹ LCA is an abbreviation for Life Cycle Assessment. The model can calculate the environmental impact from the product's entire life cycle. The LCA model contains several environmental indicators, of which the one that is currently the main focus is CO₂.

of the climate measures that are currently being analysed. It is assumed that the information document is read before answering the question frame.

2. A questionnaire: 2. *Questions for suppliers regarding the written market dialogue (EN)*. This is a questionnaire that interested suppliers can answer and return to the three agencies. It is not a requirement to answer all questions in order to participate in the market dialogue. If there are questions that are not relevant to you, then you are welcome to refrain answering these questions.

The market dialogue includes the following activities:

Table 1.

Date	Activity
12.12.2022	Materials for the dialogue is published on the three agencies tender portals.
16.01.2023	Suppliers who wish to participate in the market dialogue must send their answers to the questions in document 2: 2. <i>Questions for suppliers regarding the written market dialogue</i> . The answers to the questions in document 2. Should no later than the 16.01.2023 be sent to kash@bane.dk, with ddm@vd.dk og throh@bygst.dk in copy.
09.01 - March	The three agencies review the responses.
March 2023	A summary of the primary findings from the market dialogue is published on the tender portals of the three agencies, at the same place where the market dialogue is announced.

3. Climate measures that are analysed

The Danish Road Directorate, Banedanmark og the Danish Building and Property Agency are currently analysing possible measures that can reduce climate and environmental impact on future projects. This dialogue will contribute with input from the market regarding what possible climate measures can be to incorporate in future construction projects in order to reduce the climate and environmental impact. Hence the focus of this market examination is climate measures that can reduce CO₂ emissions. If you are aware of other measures that can reduce the climate and environmental impact, we would also like to hear about them, however the focus is on measures that can reduce CO₂ emissions.

3.1 Terminology

In order to be able to group possible climate measures within different functions, you are requested in questions 2.3 and 2.4 to describe what areas you work within. Please use the functions and their descriptions provided in the table below in your answers.

Table 2.

Name of work	Detailed description
<i>Earths</i>	Foundations, climate protection, torrential rain protection, groundwater protection, fauna passages, sheet piles, dewatering, sewer work, environmental engineering, wiring, ballast, track box, drainage, ditch and drainage works, transport logistics and sustainable land management, earthworks, terrain regulation, foundations, terrain decking, pile foundations, sheet piling
<i>Construction by rail-ways and roads</i>	Buildings, tunnels, steel bridges, sheet piling, concrete (In situ and as concrete elements), reinforcement, waterproofing, platforms
<i>Pavement for roads</i>	Asphalt, road marking, fencing, asphalt production
<i>Road and railway equipment</i>	Noise protection screens, guardrails, railings, signs and portals, barriers, permanent and mobile solutions, VMS boards and ITS, signals, supply boards
<i>Vegetation</i>	Vegetation and landscaping, clearing for construction sites.
<i>Railway tracks</i>	Rails, switches, sleepers
<i>Overhead line</i>	Steel masts, suspension, carrying rope and catenary cables, mast foundations
<i>Office buildings</i>	Electricity, water, heating, ventilation, installations
<i>Constructions sites and access ways</i>	Installation of a carriageway surface, Base course/gravel, mulch removal, driving plates
<i>Steel</i>	All steel forms incl. thin plate constructions, inside and outside
<i>Building structures: Heavy walls/external walls</i>	Masonry, elements including insulation work, in-situ and element walls
<i>Building structures: Lightweight walls and roof</i>	Lightweight facades, interior works, roof structures, rafters

3.2 Requirements for Non-Road Mobile Machinery

The agencies are considering strengthening the environmental requirements for work vehicles/construction machines on the construction site, cf. questions 4.1 - 4.4. The reason for considering new requirements for construction machines is to reduce their emissions of particles, NO_x and CO₂ respectively. The emissions of construction machines are regulated by the EU's emission standards for Non-Road Mobile Machinery (NRMM). These are divided into increasingly stricter stages according to the machine's time of sale - in the same way as the increasingly strict EURO standards that apply to all passenger and lorry vehicles in the EU.

The agencies are considering a gradual strengthening of environmental requirements for work vehicles/construction machines used in future construction projects. Several contractors work for more than one agency and it will therefore be an advantage if the agencies phase in in the same requirements over time.

Table 2: Proposal for a gradual strengthening of environmental requirements for work vehicles

Year of the requirements coming into effect	Diesel-powered vans (including all different configurations of vans).	Diesel-powered lorries used on the construction site (over 3.5 tons)	Non-road mobile machinery
2022	Registered on or after 1 January 2012	Registered on or after 1 January 2015	Must comply with Stage III b or have particle filter fitted
2023	Registered on or after 1 January 2012	Registered on or after 1 January 2015	Must comply with Stage IV or have particle filter fitted (Except machines in category Stage III b, Kat L)
2024	Registered on or after 1 January 2012	Registered on or after 1 January 2015	Must comply with Stage IV or have particle filter fitted
2025	Registered on or after 1 January 2016	Registered on or after 1 January 2015	Must comply with Stage V or have particle filter fitted

Older machines with the appropriate retrofitted equipment are still permitted, provided that retrofitting lowers the emission level, equivalent to Stage V - [EU requirements as defined in Stage standards \(Danish\)](#).

3.3 Electric powers equipment in construction

The agencies are analysing the possibilities of introducing demands in future projects for wider use of electric-powered equipment than today. Input from the market is desired to find an appropriate degree of phasing in of new equipment and new technologies, cf. questions 5.1 - 5.12.

It is clear that more equipment is becoming available as electrically powered equipment, see for example: [Database: Emission-free Construction Equipment \(by manufacturer\) - Bel-lona.org](#). However, it still needs to be clarified by the three agencies which types of electrically powered equipment that are most relevant when setting requirements for usage on construction sites. Therefore, a number of questions try to uncover what type of electrically powered machines that is most obvious to start demanding in future projects.

Alongside a requirement for the use of electrically powered equipment, there will be a requirement for the equipment to be charged on the construction site via the electricity grid or power banks. It is therefore not permitted to use diesel generators for charging the equipment. Use of electrically powered equipment can be both the contractor's own machines or it can be rented or leased equipment.

3.4 Other

The agencies are considering the possibilities to reduce CO₂ both in the building process and in construction itself. Requirements for the reduction of CO₂ are set in the Building Regulations 2023, by requiring the use of LCA calculations. In addition, the minimisation of resource consumption is also considered, including the handling of material waste and recycling. Moreover, it is of interest to the agencies to know how far the industry is in relation to the preparation of EPD for use in project calculations alongside the supplier proposals for material optimization, cf. questions 6.6 – 6.10, 7.1-7.2 and 8.1 – 8.13. Lastly, it will be of interest to know more about how the contractors stand in relation to recycling of both materials on the construction site and in the structure itself, cf. questions 9.2, 9.3 and 9.10.