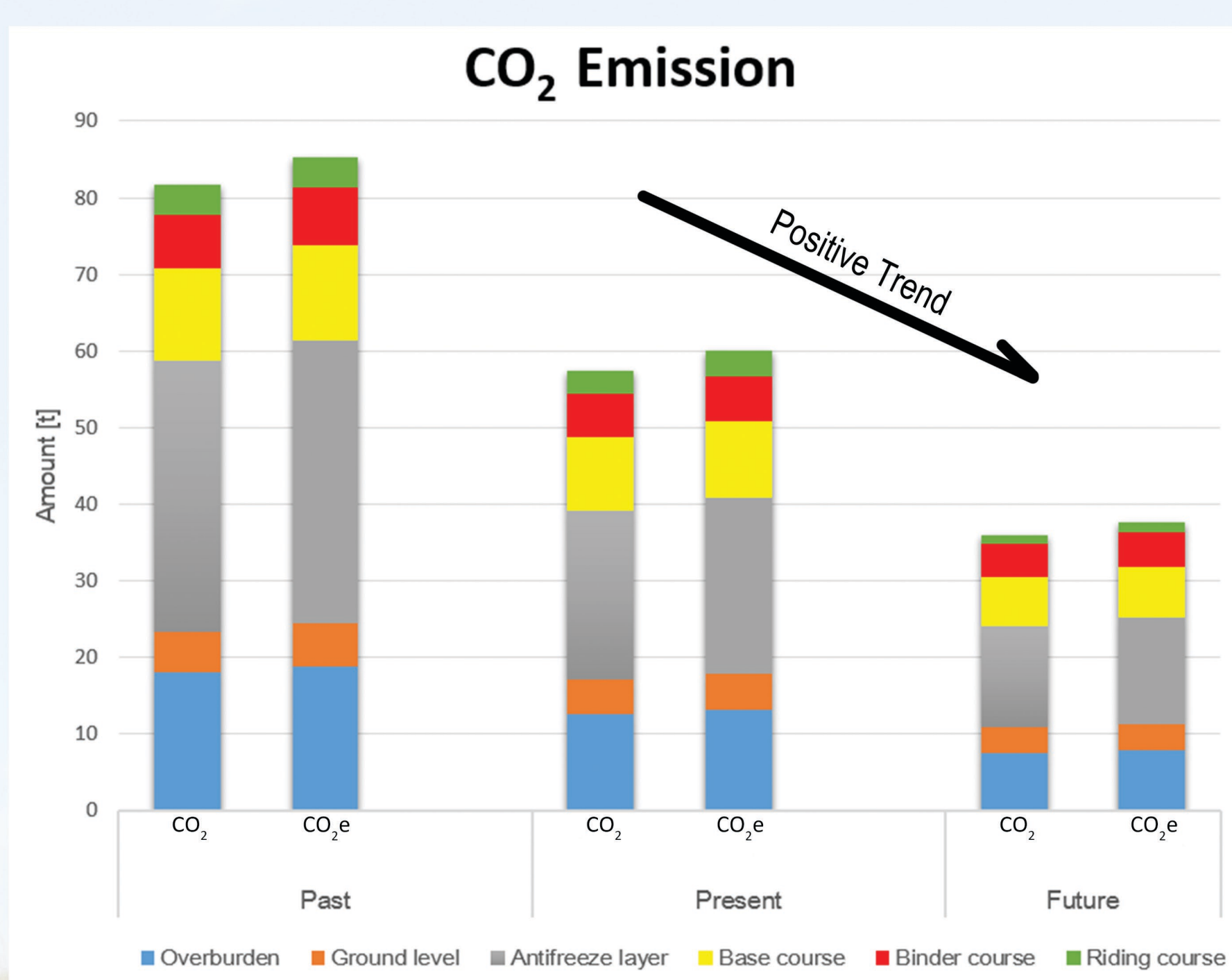
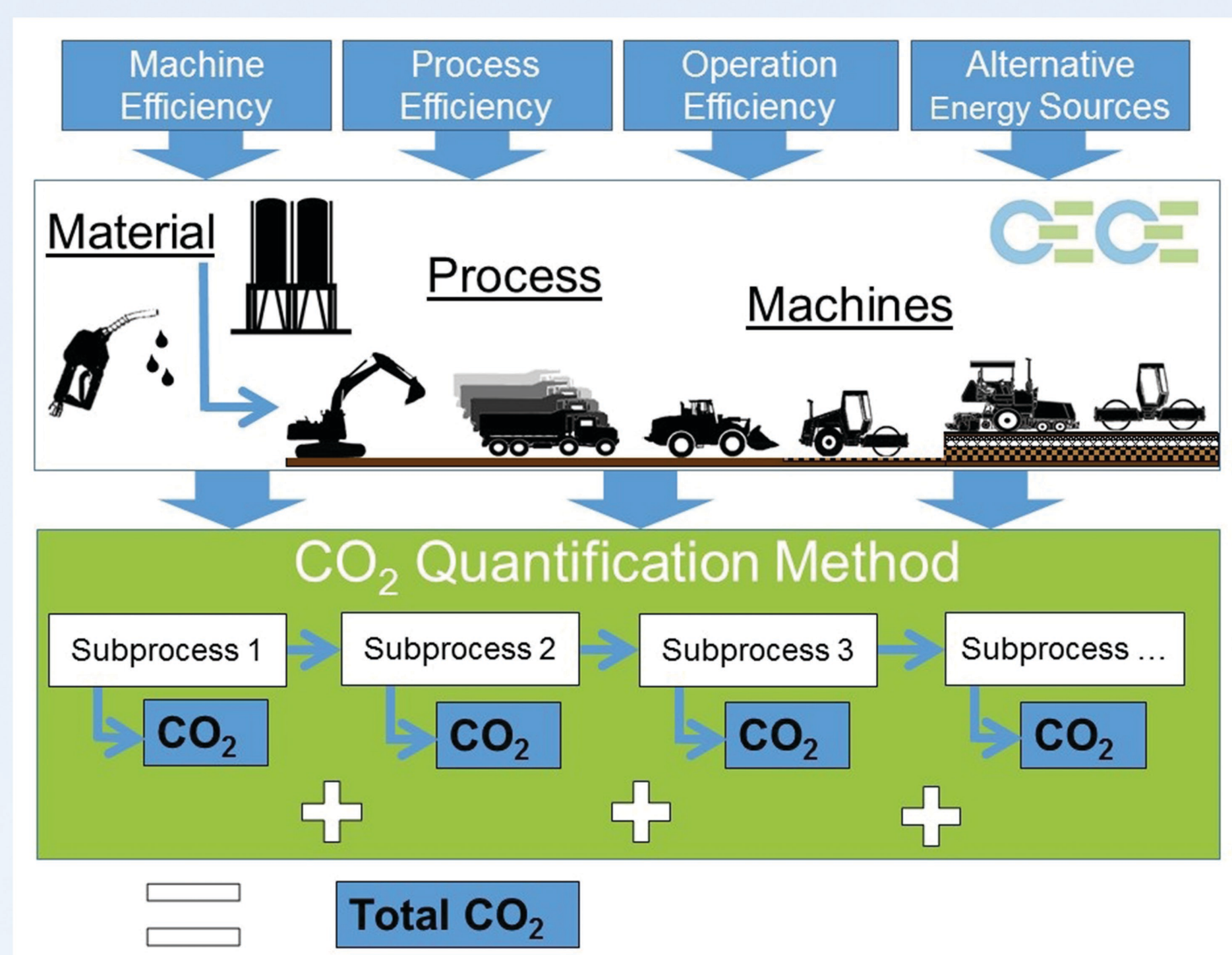
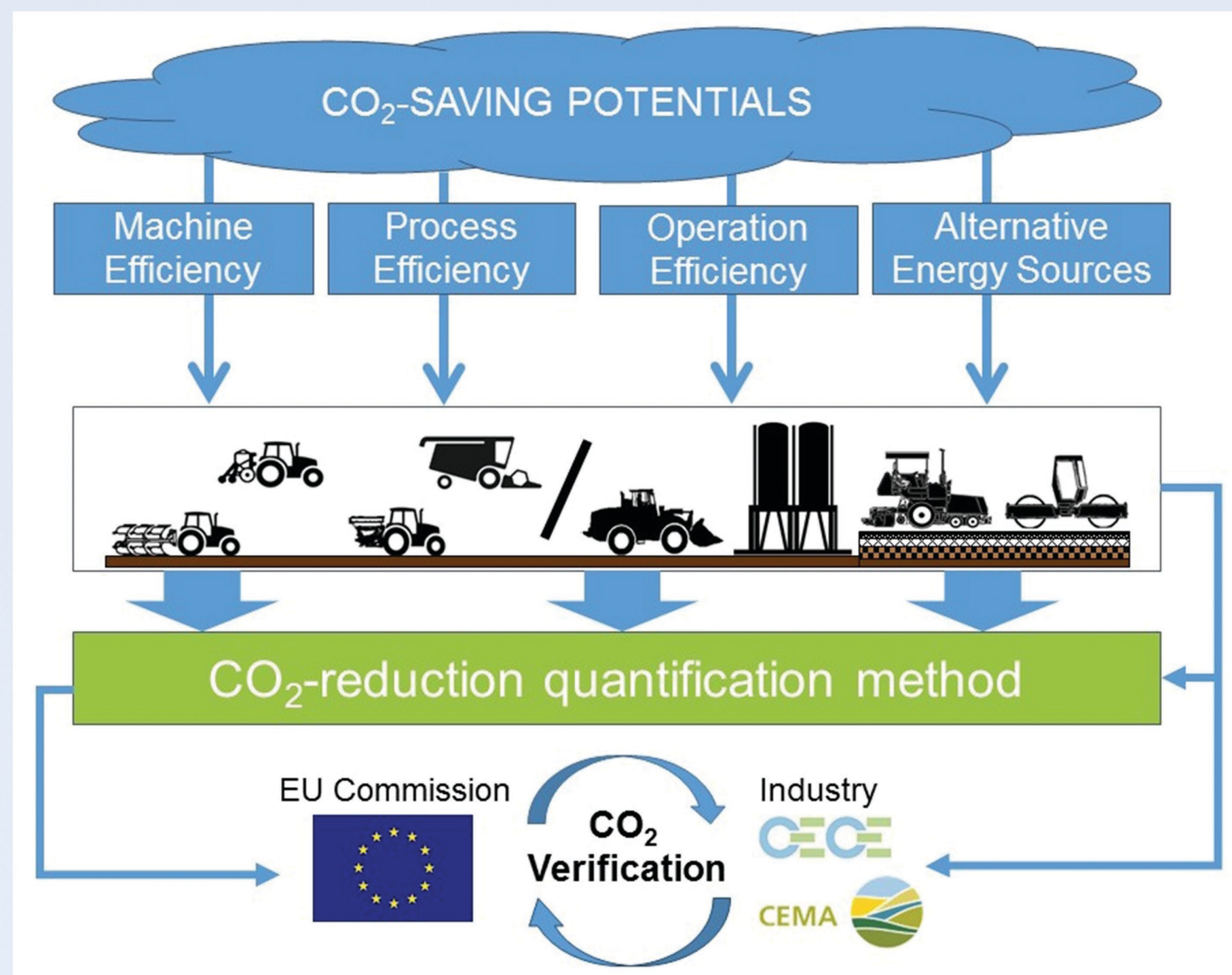


CO₂ Quantification for typical Mobile Machine

Application in Earthmoving, Road Construction, Quarry and Building Construction Processes.



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Motivation

The objective of the European Union is to reduce 40% of the CO₂ emissions until 2030 compared to 1990 (CECE, 2016). The pressure concerning the reduction of emissions is very high from the politics and society. The approach has been developed in cooperation with the European Construction Equipment Committee (CECE) and the European Agricultural Machinery Committee (CEMA). The industry of mobile machines favours a market driven and process depending CO₂ reduction. Such approach would ensure the companies competitiveness in the global market.

Procedure

In fact, there are many factors influencing the fuel consumption of a mobile machine. Each construction machine has different functions, different technologies and different areas of application. In addition, because a construction results out of a combination of works from different machines, the use of a machine type depends also on what other machines were used and / or will be used. The material used during operation should also be considered. For example, the use of recycling material should be favoured over conventional material and should appear in the CO₂-balance.

Mobile machines are influenced by many factors, for an objective and effective CO₂ quantification, the mobile machine needs to be related to their construction application.

Current Status

Aim of this project is to further develop the scientifically substantiated method on how the reduction of CO₂ emissions in the construction sector can be quantified and can be validated. In the first step, reference construction applications in the building construction, road construction, earthmoving and quarry sectors have been defined. These applications have been parametrised in order to quantify the CO₂ emission with the developed method. This method will be validated with data from construction sites.

The method will be implemented into a tool. The tool will hold data from the past and will be able to show the development trend. This tool will permit politics, industries of construction machines and construction companies not just to quantify CO₂ emissions but also to reduce the CO₂ emissions through optimal planning.

Project partners & Funding committee



COMMITTEE FOR EUROPEAN CONSTRUCTION EQUIPMENT



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