Carbon emission reduction targets for project-focused construction companies

A case study of the Skanska group

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Abstract

The construction industry is responsible for about one third of the annual global GHG emissions and its products carry significant lock-in risks: infrastructure and structures built today will contribute to anthropogenic GHG emissions for the next decades. Due to operational diversity, structural complexity, and the emission fluctuations associated with project-based work, construction companies struggle, however, with defining relevant carbon reduction targets. This study aimed at deriving a conceptual model for how these organizations can set targets that are meaningful in respect to their business characteristics. Conducted as a case study of the Skanska group, a qualitative approach was used: Interviews with different business units as well as literature reviews about the existing target setting methodologies, science-based methods, and approaches in other yet similar industries as well as competitors were leveraged to collect information. This data was qualitatively analyzed, discussed and compared against the requirements of defining reduction targets in the construction industry. An overarching, company-wide target is neither practically conceivable nor environmentally robust. Companies such as the Skanska group are recommended to differentiate between their different operations and to develop separate targets for each. Depending on the business volatility of these operations absolute or relative target setting methods are to be used. Meaningful relative targets require operations with low emission homogeneity to be broken down into further separate targets for individual activities, e.g., individual targets for the manufacturing of asphalt and concrete. Construction work itself has to be addressed by individual targets on project level for each project type, e.g., highways, bridges, offices, and residential, in order to avoid the issues of structural complexity and emission fluctuations. Creating a company-wide performance indicator embracing all construction work is only possible by normalizing these project-based targets a second time, e.g., by measuring the turnover of projects meeting the individual reduction targets.