

# Emission Free Construction Site-Thermal Overloading of the Charging System

Master's thesis number: MT-34-22

## Introduction and background

The purpose of this study was to evaluate the thermal overloading of the Fast Charging CCS-2 cable and proposed a study based model for CCS-2 cable on the Emission free construction site. CCS-2 cable is used for charging the construction machinery with the help of a mobile battery. In Norway, research on fossil-free and emission-free construction sites has accelerated in recent years, with the goal of contributing to global, national, and regional emission reduction targets. All construction sites release various gases like Methane Carbon dioxide and other waste pollutants which harm the environment and also cause global warming. Different municipalities set the target to move toward. Skagerak Energi also took a step toward this and start a pilot project.

## Problem description and objective:

As the batteries will be charged by the fast-charging cable CCS-2 on the charging station which is connected to the grid, the effect of fast charging on the cable must be studied. The current carried by CCS-2 charging cables in the range of hundreds amps. Such a high current can cause of producing heat in the cable conductor which damages the cable insulation and reduces the life span of the cable. The important goal is to identify the limiting factor of the cable when it comes to thermal overloading. Investigate what temperature limits apply.

## Collaborations:



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