

How to keep track on energy use within road maintenance operations

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ABSTRACT

This study is part of a PhD-project about energy efficiency at the University of Gothenburg, in collaboration with the contractor Skanska. Energy efficiency is somewhat new as a concept within winter road maintenance as the expression efficiency so far mainly has been used in terms of total maintenance rather than on energy. Looking historically in previous years' SIRWEC presentations there are many studies and projects that most likely led to energy efficiency as a by product but the energy was never considered in those cases. Economic crises, rising fuel prices and increased environmental concerns in the wake of the climate change debate have however led to an increased willingness to not only reduce costs but to become more energy efficient as well. Energy efficiency is all about sustaining the same outcome while using less fuel, at least when thinking in terms of winter road maintenance. It is hence important to know how much fuel the different winter road maintenance activities are using, to be able to estimate the efficiency of various improvements to the operations. One way of doing this is to let every driver report how much fuel each activity have used. This is time consuming and brings about the factor of finding willing drivers to take on such a task. Another more manageable way of doing this is to use calculated standards. Present study has used preset calculations for fuel use and the number of hours per winter that was used for different winter maintenance operations to calculate a comparable energy use within the operations in different climatic regions in Sweden. This will however only give so much information; hence a test will be set for the winter of 2011/2012 where the actual fuel usage will be monitored on a few vehicles in a maintenance district. The results will hopefully give a more accurate index for fuel use in the different regions.