



THE GHG EMISSIONS MODEL STUDY FOR STRAW FIRED BOILERS

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ABSTRACT

Latvia (EU) is obligated to report anthropogenic greenhouse gas emissions annually to the UNFCCC. Inventories of greenhouse gas emissions and methodologies used have to be well based and documented. The aim of this report is to give input to Latvia greenhouse gas inventory of straw fired boiler sector. The emission factors for the industrial processes used in the inventory are based both on plant-specific factors and the IPCC default values. Modeled emission factors for the non-CO₂ greenhouse gases from combustion are mainly based on studies in plant design and maintenance, operating conditions and composition of fuels. In addition, knowledge of emission generating processes has increased world-wide.

In this study, the non-CO₂ emission factors (mainly CH₄ and N₂O, and at a lesser extent, CO and NMVOC) for straw fired boiler used in the Latvian greenhouse gas inventory are evaluated based on domestic and international literature, available measurement data and calculated data.

Results of this study revealed many potential areas for improvements in the inventory. The time dependency and uncertainties of the emission factors are also considered. In addition, effect of load and straw mixes on emissions is examined. Areas for further research are also indicated.

Keywords: Straw boiler, GHG emission control, system improvement for emission control, emission factors for industrial processes