

Roadmap to Low Carbon Thailand towards 2050

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Abstract

The research team has constructed this roadmap to low carbon Thailand for use as a basis of discussion on sustainable Thailand. The methodology involves i) development of current GHG emission inventory, ii) quantification of socio-economic activity level in 2050 according to available information from Thailand's office of the National Economic and Social Development Board (NESDB), and iii) development of GHG mitigation roadmap towards 2050 by using the AIM/Enduse model. According to the proposed roadmap for sustainable Thailand towards 2050, the amount of GHG emission increase is estimated based on i) 2050 BAU (business-as-usual) without mitigation measures, and ii) 2050 with counter mitigation measures for Low Carbon Society (LCS) of employed green technologies and energy efficiency improvement as well as the potential to reduce GHG emissions by LCS measures available during 2005-2050, which this study divided into three sub-periods: short term, medium term and long term periods. The short term roadmap is intended for the proposed Thailand's Nationally Appropriate Mitigation Action (NAMA), while the long term roadmap is provided for discussion of sustainable Thailand. The main findings are 1) The annual greenhouse gas emissions of Thailand in the base year of 2005 are 183,287 kilo-ton (kt) of CO₂. 2) Under the scenario without mitigation measures, that is the 2050BAU scenario, the GHG emissions would increase to 840,371 kt-CO₂. That is 4.6 times higher than the emission in the base year 2005. 3) By adopting the selected feasible GHG mitigation measures available by 2020, 2030 and 2050, the GHG emissions in the 2050LCS can be decreased by approximately 29.2% to 594,665 kt-CO₂ (see Figure 1). The summary of the roadmap to LCS are also presented in Figure 1.

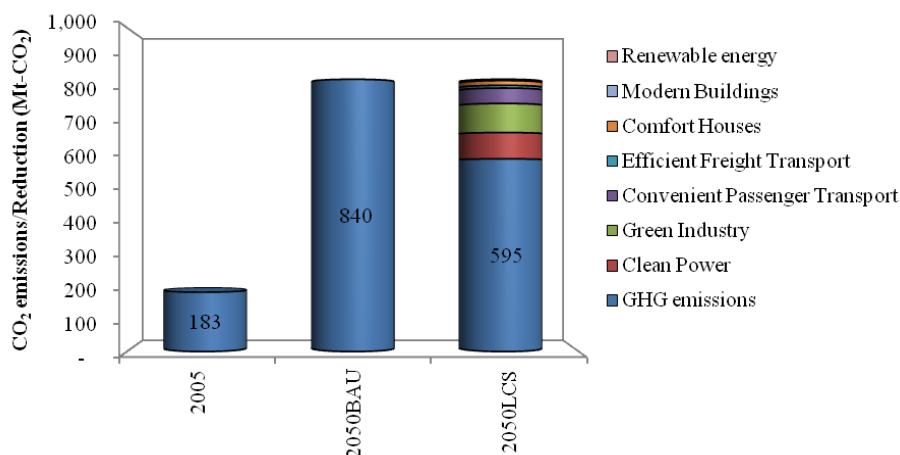


Figure 1: GHG emissions and mitigation by low-carbon actions in the roadmap