

9th GCOE Energy Seminar

Date: 22 October 2010 16:00-18:00

**Place: Room 201, Engineering Bldg. No.2,
Yoshida campus**



Thailand Climate Plan toward 2050

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In 2009, Ministry of Energy established the Alternative Energy Development Plan 2008 – 2022. The aim was to increase the proportion of using alternative energy to 20 percent of the national final energy consumption by 2022. Four groups of alternative energy resource were implemented : 1) renewable including hydrogen for electricity, 2) renewable for heat, 3) biofuel and 4)NGV. In addition, as of April 2010, Thailand Power Development Plan 2010-2030 (PDP 2010) were published by Electricity Generating Authority of Thailand (EGAT). PDP 2010 focused on GHG emission reduction and energy efficiency promotion as well as the diversification of fuel mix.

In this study, two power generation scenario and climate plan scenario were modeled by using LEAP program. Two power generation scenarios consisted of : 1) without PDP 2010 and 2) with PDP 2010. In case of without PDP 2010, the share of energy generation between 2009-2050 were kept constantly by using the share of energy generation in 2008. With PDP 2010 scenario, PDP 2010 were applied between 2010-2030. The share between 2031-2050 were set by 2030. The key findings were that CO₂ eq emission reduction with PDP 2010 were 25.8 MtCO₂eq (5.2%), 60.8 MtCO₂eq.(8.5%) and 122 MtCO₂ eq. compared to emission of baseline (without PDP 2010) of 498, 715 and 1,400 MtCO₂ eq in 2020,2030 and 2050 respectively.

The case of climate plan scenario, with PDP 2010 was designated as BAU case. About 30 mitigation options of energy and non energy sector were implemented: five for power generation, two for industrial , four for transportation, five for commercial and residential, three for industrial process, nine for agriculture, two for land use and forestry and one for waste sector. The results showed that total amount and percentage of CO₂eq emission reduction were equal to 82(17.2%),157(24%) and 320(25%) MtCO₂eq in 2020,2030 and 2050 respectively. By 2050, mitigation option from power generation has achieved a dominant CO₂eq reduction with a share of contribution of 37% , follow to industrial of 15% and industrial process of 14%. In term of per-capita energy related CO₂eq.emission, climate plan scenario has lower than with PDP 2010 scenario with 4.6, 4.1 tCO₂eq/capita in 2020 and 6, 5 tCO₂eq/capita in 2030 respectively.

Note: Please do not quote this results