



2050 Pathways Calculator

By Greenhouse Gas Information Center

Thailand Greenhouse Gas Management Organization (Public Organization)

Nowadays, the global trend has developed in sustainable way in all aspects. Energy development is the fundamental of socioeconomic development; meanwhile, the Greenhouse Gas (GHG) emissions from energy development and usage impact to environmental, especially in climate change. All of conventional energy process flows from exploration through transformation and usage are emitted GHG to the atmosphere and cause the greenhouse effect. In sustainable development, not only keeping economic growth and stabilization of socioeconomic and quality of life but also have to taking good care to the environment for sustainable of the ecosphere. The energy development directive need involvement from all stakeholders to mutual setup the development plan and adopt all aspects of gain and lost including the advantages or disadvantages of each technology options.

The UK Department of Energy and Climate Change (DECC) developed the model “2050 Pathways Calculator” as a tool for UK achievement the GHG emissions target at least 80% by 2050, relative to 1990 levels. For this to happen, we need to transform the UK economy while ensuring secure, low-carbon energy supplies to 2050. The 2050 Calculator is an award-winning, user-friendly model that let’s create your own emissions reduction pathway, and see the impact using real scientific data. The calculator can help everyone to engage in the debate and lets government make sure that our planning is consistent with this long-term aim. This model can provide projection by choosing different trajectory level 1 - 4 in technology options and demand sectors to compose different scenarios as pathways to achieve mitigation target and sustainable development.

After the success of "2050 Pathways Calculator" in UK, DECC together with The UK Foreign and Commonwealth Office and The UK Department for International Development to setup capacity building project as a knowledge transfer in the development of the calculator to other countries. For Thailand, the Thailand Greenhouse Gas Management Organization (TGO) joined to this project. TGO also invited the Department of Alternative Energy Development and Efficiency (DEDE) and Energy Policy and Planning Office (EPPO), Ministry of Energy to provide informative data and national energy development plan.

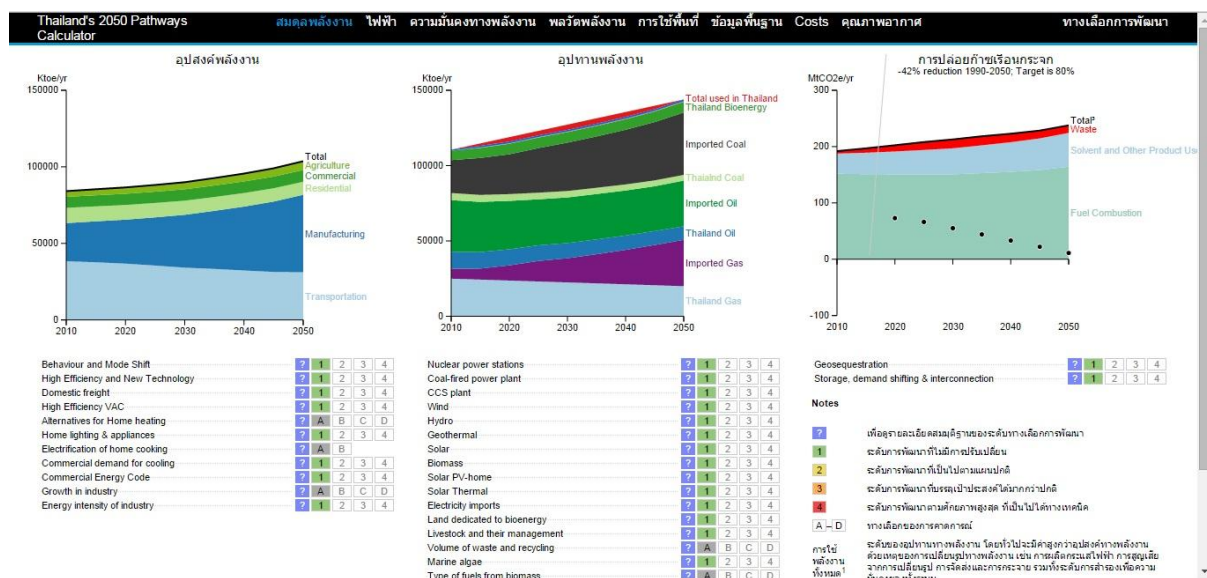
About the Model

The “2050 Pathways Calculator” is developed base on the energy balance concept which illustrate the relationship among Energy Demand, Energy Supply and Transformation. In addition, the model can provide the effect of different scenarios such as the level of GHG emissions, the capital cost of supply and transformation development, the cultivation area of energy crop plantation, and the air quality from choice of fuel combustion. This model is developed by using MS Excel and it is able to compile to the web tool version, which can be disseminated through the website.

The Development of Thai 2050 Pathways Calculator

TGO, DEDE and EPPO joined in this project with support by the British Embassy Bangkok to receive the knowledge transfer program from DECC on how to develop the model. Fortunately, DEDE had been developed the energy statistic by using energy balance concept for long time so the data used in Thai's calculator came from DEDE's energy balance. In addition, EPPO provides the national energy development plans to setup the sector categories and trajectory levels. Moreover, the model also included the transportation development plan as a sector which is the second sector in energy consumption and the third in GHG emissions. After Thai team had developed a prototype model, we conducted several workshops among stakeholders to revise driving factors in each sector and the trajectory levels to fit with the reality situation.

Thai 2050 Pathways Calculator had been launched in November 2014 which was interested by all stakeholders and the presses. The Thai 2050 Pathways Calculator web tool can be accessed by visiting "<http://thai2050.tgo.or.th/>".



Thai 2050 Pathway Calculator Web Tool

The Ministry of Energy and Office of the National Economic and Social Development Board will appoint this model to use as policy support tool, especially integration of all energy development plans (i.e. (1) Power Development Plan, (2) Alternative Energy Development Plan, and (3) Energy Efficiency Development Plan). The calculator can illustrate the relationship among the level of successive of each measure from those plans which some are synergistic or some are contradiction. Meanwhile, the web tool will be use as public consulting tool which promote the understanding base on the scientific fact in the visualized form. The Ministry of Energy plans to use the calculator with the revise version of energy development plans of 2015 as the policy tracking tool for the progressive of the measures implementation.

TGO still provide the support on technical aspects for the further development, data updating and modification of driving factors to fulfill our role to support low carbon development mission.
