

The challenges in achieving biodiesel target of renewable energy policy in Thailand

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Energy consumption in Thailand has increased in line with the country's economic expansion and population growth. The imported energy is the main source of Thailand. Oil import has the highest proportion at 80% of total domestic oil consumption, with an increasing trend from 297 million barrels in 2010 to 318 million barrels in 2013. The value is over 1,000 billion THB (approximately 31 billion US dollars).

The Thai government has promoted the Renewable and Alternative Energy Development Plan for 25 percent in 10 years (AEDP 2012-2021) to develop alternative sources of renewable energy in order to replace fossil fuel and oil import, and to move towards the low carbon society. Palm-oil based biodiesel is one of the attractive renewable fuel in Thailand. The policy production target is set at 5.97 milliliter per day by 2021. Such that 880 thousands hectares of oil palm plantation will be required. In 2013, Thailand had approximately 720 thousands hectares of oil palm plantation with the target gap of 160 thousands hectares. In response to land availability for oil palm expansion, the strong legislation to protect the forest has effectively forced the expansion mainly taking place on pre-existing croplands, causing the risk of local crop lost and the competition for land utilization between energy crop and food crop.

The average of oil palm fresh fruit bunch (FFB) yields and overall oil extraction rates (OER) in Thailand during 2005-2009 are 16.8 ton per hectares and 16.6%, respectively. Malaysia and Indonesia, the world leaders of oil palm producers, have a much higher rate above 40 ton per hectares of FFB and 25% of OER. The approximate value between this gap is several billion THB. This can be explained by that oil palm plantations in Thailand are mostly owned by local farmers and smallholders. Consequently, planting technologies and lacking capital are the main factors to lower yield and quality. Despite this, the Thai government is optimistically looking at the issues as an opportunity to stimulate economic systems in rural areas and thus providing farmers' income distribution and better quality of life.

To achieve the policy target, the Thai government has currently provided (1) subsidies in various forms to farmers as an incentive to convert their croplands to oil palm plantation, (2) cash grants for technology research and development, (3) research funds for a better practice in farm management and rural development studies, and (4) research funds for possibilities of exportation in the future, concerning with the international protocols such as RSPO. These strategies have been developed in consideration of lessons from the past on dramatic deforestation, massive biodiversity losses and extinction of species that have been occurring in other oil palm producing countries. These promising strategies are therefore the challenges.

Keywords: alternative energy policy, food and energy crop competition, biofuel, oil palm expansion, RSPO