USAID PFAN-Asia Mobilizes US$12.6M for 9.5MW Biomass Project in Thailand

"We are lucky to meet PFAN-Asia and received their support to assess our business as well as their guidance throughout the negotiation process with potential investors." *Tanakrit Sudpraserd,* Director, Business Development

Smo Thong's power plant will transform organic palm waste into electricity for the province.

Founded in 2003, Smo Thong Biomass Co.Ltd is a manufacturer of distilled palm oil. The company plans to build, own and operate a 9.5MW biomass power plant on 280 rai of land in Surat Thani province in southern Thailand, producing electricity for the Provincial Electrical Authority under the Very Small Power Producer Program.

The power plant aims to use empty fruit bunches (EFB), a waste product of the palm oil milling process, as the primary fuel for power generation. EFBs typically exhibit high moisture content and low calorific value, characteristics that make them difficult to use as a fuel source. In order to overcome these technical challenges, the project is investing a considerable amount of effort in identifying and selecting the appropriate combustion technology for the plant, setting an example for other palm oil millers to follow in the future.

Once operational, Smo Thong expects the power plant to generate 83,220,000 kWh of electricity per year. With an average annual electricity consumption of 2,052 kWh per capita in Thailand, this means that the plant can generate enough electricity to meet the needs for approximately 40,500 Thai people. In addition to increasing the supply of electricity, the power plant also supports the government's initiative to reduce its dependence on imported fuel and reduce or avoid greenhouse gas emissions (GHG) through displacement of existing and/or new fossil fuel generation. In total, the project expects to avoid or reduce GHG emissions by 45,500 tons of CO_2/year – equivalent to taking 9,579 cars off the road, or reducing 108 million passenger car miles.[1]

Smo Thong's power plant project will also create positive environmental and social impact. For example, the disposal of EFB is often problematic, and when left to decay at solid waste disposal sites, can begin to emit biogas containing methane – a potent greenhouse gas that is not only a potential fire hazard, but is also characterized by a putrid odor that can carry over large areas. EFBs that are harvested and used as a fuel for the new power plant will avoid this predicament and be sustainably 'recycled' into electricity for others. Smo Thong's project will also benefit the local community by creating new local job opportunities for the development, construction, and ongoing maintenance of the power plant.

With support from USAID's Private Financing Advisory Network-Asia (PFAN-Asia), Smo Thong recently signed a Memorandum of Understanding with a strategic equity investor for US$12.6M to jointly develop this biomass power project. Smo Thong was first introduced to PFAN-Asia at the Renewable Energy Asia event in Bangkok and was admitted to the program in July 2014. Following an initial investment readiness assessment, the project received further support in refining its financial model and, more recently, reviewing and structuring the first round of external investment.

[1] EPA.gov online GHG equivalency calculator; http://www.epa.gov/cleanenergy/energy-resources/calculator.html