

Pilot project turning waste into power

Singapore-based Sindicatum Sustainable Resources Co's waste-to-electricity generating plant has been selected by the Energy Ministry to be Thailand's pilot project to turn community waste into renewable energy resources.



Sindicatum waste-to-electricity generating plant in Nakhon Pathom.

The project, seen as a solution to urban development, is located at Kamphaeng Saen in Nakhon Pathom.

Sindicatum, through its wholly-owned Zenith Green Energy and Bangkok Green Power, has operated two biogas projects located near the local municipal landfill.

By using waste from the municipal landfill, each biogas plant can generate eight megawatts of electricity.

"Being Thailand's pilot project for this kind of energy development project means that they will financially survive by government support," said Areepong Bhocha-oom, permanent secretary.

He said renewable energy from waste from communities and the agricultural sector nearby was selected as the government's priority to support in terms of investment incentives such as tax relief and feed-in tariffs.

"Urbanisation and the growth of the industrial sector have led to a huge increase in waste from daily consumption, which requires serious management. It is not only the bad odour from waste dump sites. Methane from this kind of waste poses 18-20 times greater risks of affecting global climate than carbon dioxide," said Mr Areepong.

Last year, Thailand produced 26.8 million tonnes of waste, of which 20 million tonnes were dumped without proper management.

Early this year, the landfill in Samut Prakan generated a huge amount of methane gas that caused severe air pollution and bad odours across the eastern part of Greater Bangkok and some districts in southern Bangkok.

A repetition of the incident led the National Council for Peace and Order to demand the Energy Ministry help out.

"Therefore, waste-to-electricity has become one of our priorities in 2015," said Mr Areepong.

He said the study by energy policymakers found the potential of waste-to-electricity nationwide of around 800 MW but now it could operate and transmit to the grid lower than 100 MW.

Because technology and the cost of waste management have changed, the ministry is revising feed-in tariff rates and conditions in order to help these projects to be commercially viable.

Thailand has hundreds landfill nationwide but the cost of turning waste into power has been too high to make it commercially.

And even though the new technology helps reduce the cost of producing biogas from waste and makes it more feasible, poor waste management of municipals across the country is still a big barrier to the development of such projects.

For Sindicatum, each project generates electricity of 376 million kilowatt-hours (kWh) or 10 million units of power per month from 6,000 cubic metres per hour of biogas produced from municipal waste.

The company has bought biogas from local supplier, Group 79 Co, which produces biogas from waste from landfills before delivering it to Sindicatum. Biogas from Group 79 comprises 45-50% methane, 40% carbon dioxide and 10% of other substances.

The two biogas projects have a total investment cost of 892 million baht and could take only five and a half years to make a break even. The company has received adder for two projects at 2.5 baht per unit since 2010.

Sindicatum president Robert Driscoll said it planned to open the third waste-to-electricity project in the same district under its wholly owned Crane Renewable Energy Co, with an investment of 500 million baht.

Chaiyos Sasomsap, Group 79 president, said apart of producing biogas from waste, it is testing the technology to turn used plastic bags into fuel to use in electricity generating process.