

ENERGY

Hunt on for low-cost ethanol

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Thai Roong Ruang Sugar Group is seeking technology to produce ethanol from an alternative raw material, bagasse, in order to make use of waste from the sugar industry and increase Thailand's ethanol production at a lower cost.

The company's executive director Ugrit Asadathorn said Thai Roong Ruang has been working on the project for more than a decade, in close cooperation with Japan's New Energy and Industrial Technology Development Organization (Nedo).

Nedo is an organisation that plays a major role in Japan's economic and industrial policies as one of the largest public research and development management groups. It has two basic missions: addressing energy and global environmental problems and enhancing industrial technology.

"We realise that demand for molasses is higher, and Thailand has limited molasses, making the price of the material to be higher and pushing the cost of molasses-made ethanol to rise in the same direction," Mr Ugrit said. "So, we are trying to produce ethanol from other raw material with lower cost."

The price of molasses, a byproduct of sugar production, has been rising continuously over the past several years due to an

increase in demand for it by two major industries of liqueur and ethanol, which pounce on whatever limited amount of molasses is available.

The price of molasses has risen to about 5,000 baht a tonne, up from 1,000 baht a tonne 10 years ago.

The rising molasses price means increase in production costs for molasses-made ethanol, pushing the price to 24.50 baht a litre, compared with 20 baht a litre in the previous decade.

Thailand also needs to rev up its ethanol production to secure its ethanol supply for its energy sector. Policymakers have set up a clear plan to add more ethanol proportion in the gasohol from 10% to 20% and up to 85%.

Thailand currently produces around 3.3 million litres per day, while demand stands at 3.2 million litres per day.

The project aims to produce ethanol from bagasse, a dry pulpy residue left after extraction of juice from sugar cane.

Mr Ugrit said the company has been working with Nedo in developing a new type of enzyme to help degenerate carbohydrate in bagasse into alcohol, or ethanol.

"We have had success in the lab using a special type of enzyme to rot bagasse and produce ethanol," he said. "But the problem is, we can't produce this type of enzyme

[locally] and need to import it, making the production costs stay high."

Mr Ugrit said Thai Roong Ruang and Nedo then developed a different type of enzyme on their own and finally succeeded in producing ethanol from bagasse.

"At this stage, we can say that we can produce ethanol from bagasse, but only in the lab," he said. "The most difficult thing is how to produce it in a large scale for commercial purpose."

Mr Ugrit said there are several factors preventing the company from producing ethanol on a commercial scale as it is very difficult to keep small bacteria in the air or any other contaminated stuff from leaking into the production process.

He said the company would also have to spend a long time as well as make a massive investment to build up a new factory and other needed facilities to produce ethanol from bagasse.

"It would need up to 1-2 billion baht of investment to expand production from the lab scale to commercial scale," he said.

Apart from the huge investment budget, the current energy price situation has made the company sit back and rethink investing in the project, since weak global oil prices are unlikely to encourage motorists to care much about biofuels blended in petrol to make petrol prices cheaper, Mr Ugrit said.