

## **High-tech waste treatment plant to open in Ho Chi Min City**

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**by Pham Hoang Nam**

HCM City Most of the city's household waste in the future will be treated by electric power with a new technology called pyrolysis, used by a US-based company.

The Entropic Energy company, based in Detroit, Michigan, will use this state-of-the-art process to generate electricity at a new treatment plant to be built in HCM City in two years.

"This new technology brings benefits for both the environment and the economy. I support this kind of factory in Viet Nam," said Nguyen Dinh Tuan, chief of the Environmental Protection Agency in HCM City's Natural Resources and Environmental Department.

The electricity plant will recycle waste products into either high quality, low-sulphur synthetic coal or synthetic "scrubbed gas".

Pyrolysis, a thermal process that uses high temperatures to break down any waste containing carbon, uses less oxygen than traditional incineration.

The process turns waste into ash, pyrolysis oil and synthetic gas or coal.

In May, a HCM City government delegation flew to Detroit in the US to visit a plant operated by Entropic Energy.

"We plan to build a plant that can treat 6,400 tonnes of waste per day for HCM City, with a total investment of US\$300 million," Lam Baccam, chief representative of Entropic Energy in Viet Nam, said.

"The price for treating waste will be around three-fourths of what it is in comparison with dumping and burying waste in a landfill."

The plant will process 1,500 tonnes of synthetic coal or 150MW of electricity per day.

"The city will only pay a fee for waste treatment and we don't have to worry about providing capital for the plant construction," Tuan said.

Every day, HCM City, which has a population of about 8 million, discharges around 6,000 tonnes of household waste.

"Initially, the company will only have to invest US\$100 million to treat 2,000 tonnes of waste each day, " Tuan said.

The remaining 4,000 tonnes of waste generated each day will be treated by other methods.

Currently, the city's waste that is left over after recycling and composting is untreated and dumped in landfills or is sometimes incinerated.

But incineration destroys natural resources, adds to climate change and causes pollution from air emissions and toxic ash.

Most alternatives to incineration now being developed use pyrolysis and gasification, which use less oxygen. Emissions are easier to control because they are scrubbed to remove contaminants.

The processes produce a more useful product than standard incineration – gases, oils and solid ash can be used as a fuel or purified and used as a feedstock for petro-chemicals and other applications.

However, gasification and pyrolysis share some of the same disadvantages as incineration.

The processes must deal only with truly residual waste, that which is left once recycling and composting has occurred.

The treatment plants also need a certain amount of materials to work effectively, including paper, wood and food waste, often the most valuable parts of the waste stream for composting.

The Entropic Energy company also uses deep-well technology to keep its disposal of industrial wastewater inside its plants. Wastewater is collected and reduced to a solid substance.

As typically done, the wastewater will be mixed with cement and kept in special storage, but under a new method, will be injected into a deep well at a depth of around 1,500m.