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String of plants for garbage treatment

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Corporation ties up with NIIST for the project

Thiruvananthapuram: The City Corporation is working on a project to establish a network of garbage treatment plants, under plans to decentralise the solid-waste management system and make it environment-friendly.

The local body has tied up with the National Institute for Interdisciplinary Science and Technology (NIIST) to establish a pilot plant and develop the appropriate technology. The project has been submitted to the Union Ministry of Non-conventional and Renewable Energy Sources for funding.

The plant of five-tonne capacity will be used to develop a replicable model for integrated management of garbage. Various technology options will be tried out to achieve optimum conversion of garbage.

While the Corporation will provide the land, electricity and water required for the plant, the NIIST will foot the capital cost and operation and maintenance cost for three years. The project will be transferred to the Corporation after that.

Sources at the NIIST said the plant would be a technology demonstration unit. One of its primary components would be an anaerobic composter equipped to produce biogas out of easily putrefying garbage. The Department of Environmental Technology of the NIIST has successfully tried out a laboratory version of the anaerobic digester.

Zero-discharge system

Scientists who worked on the project said they had come up with a zero-discharge system for the primary treatment process. The system uses a powerful microbial extraction process and a bio-filtration method to control the odour. One of the advantages of the system is that it can handle un-segregated garbage.

Research scientists at the institute explain that easily putrefying waste is the most difficult to manage because of the smell and the leachate it generates. "Once this is handled, the rest can be managed easily," says a scientist.

The secondary stage involves the development of appropriate technology to treat the residual waste. Various options such as RDF (refuse derived fuel), incineration, bio-composting and landfill will be considered during the three-year pilot project. "The thrust will be on developing the most cost-effective, appropriate technology. A suitable engineering design will also have to be worked out," the scientist said.

Scientists from the NIIST and Corporation officials have held discussions on identifying a location for the pilot plant. There are indications that it will be located at Vilappilsala.

Researchers will come up with a system to utilise the huge amount of biogas to be generated by the plant. The discussions have centred on using it to power a generator or piping it to the neighbourhood. "Faced with spiralling price of cooking gas, it will be a welcome option for most households," says a councillor.

Corporation Health Officer D. Sreekumar said the concept of a decentralised system was the obvious solution to the problem of urban garbage disposal. "Apart from reducing the expense involved in transporting garbage from all over the city to Vilappilsala, it would result in better management. Extending the system to the neighbourhood level would be a still better option," he says.