



MEDIA RELEASE

Plastic to oil innovation at Kraaifontein Waste Management Facility

Immediate Release

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Caption: The Institute of Waste Management of Southern Africa (IWMSA's) Western Cape Branch held an interactive session at the state of the art pilot pyrolysis plant at Kraaifontein Waste Management Facility in Cape Town on 17 February 2016. The plant boasts the first oil from plastic waste facility in the Western Cape. [High-res images available on request. Photographer: Stephan Morkel]

Managed by the City of Cape Town, the Kraaifontein Waste Management site has a public waste drop-off facility, a materials recovery facility, a refuse transfer station and a green waste chipping area. The IWMSA event attracted 85 professionals operating on government level and the waste management industry at large.

“The pilot pyrolysis plant is facilitated by an agreement between the City of Cape Town and two Japanese firms namely CFP Corporation and Kanemiya, while funding for the pilot plant was provided by the Japan International Cooperation Agency (JICA). The plant converts up to 500 kg of plastics into 500 litre of cracked oil per day,” says Margot Ladouce, IWMSA Western Cape Chairperson. The commercial plant has the capacity to convert a maximum of 8000 kg of plastics per day.

General Manager: Waste Management at CFP Corporation, Tetsuya Sato explained that the feedstock used to generate the oil is used plastics (PE, PP, PS) from City and commercial waste. Polyethylene (PE) has been found to be the best material for producing diesel equivalency fuel. PET and PVC plastics are not suitable for the plant.

“The plastic waste first goes through pre-treatment of washing, shredding and extrusion before being sent into the pyrolysis reactor. A syngas is formed which is condensed into the oil which is then collected in storage tanks, where 15% is used for generator fuel for the factory’s electricity and 85% of the fuel can be sold or used for the generation of electricity in the case of a commercial plant,” highlights Sato. He further explained that cracked oil can be used as fuel for power generators, boilers as well as for diesel engines. One litre of cracked oil generates approximately 4 to 5 kw/litre of electricity.

Garreth Grosch of the Directorate: Air Quality Management within the Western Cape Department of Environmental Affairs and Development Planning, delved into atmospheric emission licensing (AEL), compliance monitoring and enforcement.

“The Kraaifontein Pyrolysis Plant is a good example of a facility in which an integrated environmental approach was practiced. In moving forward within the framework of sustainable development, further technological partnerships should be fostered,” says Grosch.

Grosch gave legislative and policy context in that National, Provincial and Municipal authorities influence air quality governance through the management of Atmospheric Emission Licencing, enshrined in the Constitution and which gives effect to the National Environmental Management: Air Quality Act (NEM:AQA). With the transition from the now repealed Atmospheric Pollution Prevention Act (APPA), the NEM: AQA objectives have shifted from source-based air pollution control, to a receiving environment approach, as well as to reflect the South Africa National Environmental Management Act (NEMA) sustainable development principles.

Mayoral Committee Member for Utility Services at the City of Cape Town, Cllr Ernest Sonnenberg emphasised that the objective of the pilot plant was to investigate the feasibility of the application of this technology to the tailings (plastics which cannot be recycled) to further reduce waste to landfill and thereby improving the waste diversion footprint of the City of Cape Town. Cllr Sonnenberg encourages the application of environmentally sound technologies in line with the pillars of the City of Cape Town’s Integrated Development Plan (IDP), reiterating its objective of waste minimisation through demonstrating that it is a caring city.

The event also included an interactive tour of the pyrolysis plant.

“We are thrilled about the key innovations regarding waste management in the Western Cape to ultimately contribute in sending as little as possible to landfill sites,” concludes Ladouce.

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