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Harvest green energy through energy recovery from waste: The story of Singapore

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The increasing challenge in waste disposal and high dependency on imported fossil fuel has compelled Singapore to make continuous efforts in advancing waste to energy (WTE) technology, which could ensure sustainable development on one hand and energy resilience on the other hand. This paper summarized current WTE practice and research trend in Singapore, covering anaerobic digestion (AD), gasification, combustion based biomass combined heat and power (CHP) production and incineration with the aim to define future perspectives of Singapore WTE application. Among the different aspects assessed, source-separated food waste (FW) and brown water presented the biggest energy potential if AD rather than incineration was adopted. Given that the purity of source separated waste determines the extent of recovered energy, suggestions are made to increase the participating rate in source separation among Singapore residents, such as environmental education through social media and phone apps and proper facilities installation at household and community.

Biography

Tong Huanhuan has completed her PhD from Nanyang Technological University in Environmental Engineering. Presently she works as a Postdoctoral Researcher in NUS Environmental Research Institute. Her main research focuses on biological conversion of organic waste and lifecycle analysis on waste management strategies.

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