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Life-cycle cost-benefit analysis on sustainable food waste management: The case of Hong Kong international airport

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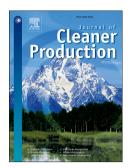
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ACCEPTED MANUSCRIPT

1	Life-cycle Cost-benefit Analysis on Sustainable Food Waste Management: the Case of
2	Hong Kong International Airport
3	Chor-Man Lam ^a , Iris K.M. Yu ^a , Francisco Medel ^a , Daniel C.W. Tsang ^{b*} , and Shu-Chien
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5	
6	Abstract
7	Food waste is responsible for a significant portion of solid waste generation in the
8	international airports, where efficient on-site or off-site sorting and recycling may be feasible.
9	The aim of this study is to develop a Life-Cycle Cost-Benefit Analysis (LC-CBA) framework,
10	through the integration of the life-cycle assessment (LCA) and cost-benefit analysis (CBA),
11	to guide decision-making in sustainable food waste management. The analysis tool assesses
12	the environmental and economic performance of different food waste management options,
13	as demonstrated in a case study of the Hong Kong International Airport with six food waste
14	handling scenarios consisting of different combinations of treatment technologies. Both
15	centralized (i.e., off-site) and on-site treatment options were evaluated. The on-site

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incineration scenario was found to be the most sustainable option with the lowest life-cycle

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