

Seventh Regional 3R Forum in Asia and the Pacific

“Advancing 3R and Resource Efficiency for the 2030 Agenda for Sustainable Development”

Adelaide, SA, Australia, 2-4 November 2016

City Report

(Draft)

<Penang>

This city report was prepared by Penang as an input for the Seventh Regional 3R Forum in Asia and the Pacific. The views expressed herein do not necessarily reflect the views of the United Nations.

Seventh Regional 3R Forum in Asia and the Pacific

02-04 November 2016, Adelaide, SA, Australia

Guideline for City Reporting on Major Initiatives/Achievements in 3R areas

The main objective of the City Reporting is to share among international community the progress, achievements and best practices, including various challenges faced, in the areas of **3R (Reduce, Reuse, Recycle)** and sustainable waste management. This would help development agencies, donors, including development banks, in assessing the needs and challenges of cities to better devise their existing as well as future capacity building programmes and operations in the field of 3Rs and sustainable waste management.

It would be appreciated if a consolidated city report could kindly be prepared by answering the following questionnaire and submitted to the **Secretariat of the Regional 3R Forum in Asia and the Pacific** by email to 3R@uncrd.or.jp

Timeline for submission: **15 September 2016**

Secretariat of the Regional 3R Forum in Asia and the Pacific
United Nations Centre for Regional Development (UNCRD)

City Report: Penang (Penang Island City council & Seberang Perai Municipal Council)

Q 1 What are the roles of local government stipulated in the 3R-related policies, acts, laws, or regulations?

Vision:

To implement and administer solid waste planning and management in an integrated, holistic, cost effective and environmentally friendly manner.

Mission:

To implement and administer solid waste planning and management in an integrated, holistic, cost-effective and environmentally friendly manner through waste minimisation approaches moving towards the Zero Waste principle.

The following objectives have been formulated for the local government to achieve the above mission.

- To establish a comprehensive, integrated, cost-effective, sustainable and socially acceptable ISWM;
- To manage wastes through a more holistic and comprehensive approach than today's system, resulting in the conservation of natural resources and the creation of less waste and less pollution, and at the same time reducing the carbon footprint;
- To implement ISWM based on waste management hierarchy that shifts away from the "throwaway society," toward a system that promotes a reduction in the generation and toxicity of trash giving priority to waste reduction through effective waste minimisation strategies (3Rs) where wastes are treated as valuable raw materials and energy resources and waste diversion from the landfill via resource recovery and composting strategies, and efficient final disposal; and
- To adopt stable, long-term funding mechanisms that provide sufficient revenue for state and local programs while providing incentives for increased waste reduction and diversion.

Seventh Regional 3R Forum in Asia and the Pacific

02-04 November 2016, Adelaide, SA, Australia

Q 2	Is 3R policy integrated in your city development strategy or master plan? (Please attach photo(s) of your city's waste management if available.)	
	<input checked="" type="checkbox"/> Yes => Please share goals/visions/major achievements/important lessons learnt that could be replicated elsewhere. <input type="checkbox"/> No => Please go to Q6 (please also answer Q4, 5, and 7)	
Please refer attached Powerpoint Presentation.		
Please attach photos with caption, if available:		
Q 3	What are the major challenges and constraints faced by your city in implementing 3R policies and programmes? (Please answer only if your <u>answer to Q2 is "Yes"</u>)	
	Financial constrains:	Rising annual costs of waste management Limited government funding for waste management activities.
	Institutional/governance challenges:	<ul style="list-style-type: none"> • Implementation and enforcement of waste related regulations especially waste separation at source. • Establishing further rapport with civil society groups, NGOs, private sector and other stakeholders. • Establishing PPP projects with the private sector and CBOs • Encouraging the private sector and multinationals to commit to Corporate Social Responsibility (CSR) principle
	Policy gaps:	<ul style="list-style-type: none"> • Development of further policies for other types of difficult waste such as C&D, mercury related products, green waste, bulky waste and household hazardous waste. • Developing and implementing a "Waste Generators Pay Principle" for the Industrial, commercial sectors.
	Other challenges such as technical capacity, human resources etc.:	<ul style="list-style-type: none"> • Obtaining appropriate, affordable, available and accessible technologies for waste treatment • Obtaining the right technical expertise.
City Report City Name: Penang]		
Q 4	What programme is in place in your city to support NGOs activities towards promotion of 3Rs?	
	<ul style="list-style-type: none"> • Establishing Zero Waste Communities • Recycling incentives for NGOs and CBOs • Green Schools with Recycling Banks and food waste processing machines. 	

Seventh Regional 3R Forum in Asia and the Pacific

02-04 November 2016, Adelaide, SA, Australia

Q 5	Is there any collaborative 3R related activity/project/partnerships with cities and organizations at international level?		
	<input checked="" type="checkbox"/> Yes => Please brief the project(s) including objectives, project partners, target, period, budget etc.		
	<input type="checkbox"/> No		
	Climate & Clean Air Coalition (CCAC) MSW Initiative - Organic Waste Diversion & Short-Lived Climate Pollutants (SLCP) Avoidance Status: Recently launched		
	<ul style="list-style-type: none"> Activity 1: Waste Diversion at Landfill site: FEASIBILITY STUDY FOR MATERIAL RECOVERY FACILITY (MRF) & BIO-DIGESTER AT PHASE 3, PULAU BURONG SANITARY LANDFILL, PENANG, MALAYSIA Objective: To divert organic waste from the landfill cells through efficient resource recovery of both recyclables and organic material as a useable product through the implementation of environmentally sustainable technologies. 		
	<ul style="list-style-type: none"> Activity 2: Waste Diversion at Point of Generation: PILOT PROJECT: UPSCALING OF FOOD WASTE DIVERSION FROM THE LANDFILL IN GEORGE TOWN, PENANG, MALAYSIA Objective: Upscaling of organic waste diversion upstream targeting food waste separation from roadside hawker stalls, restaurants, hotels in the UNESCO World Heritage George Town inner city on selected main streets (especially those which have night hawking) for a pilot project. 		
	Please attach photos with caption, if available:		
Q 6	Even if your city doesn't have any dedicated 3R policies/programmes/activities, what future prospects or opportunities does your city have in 3R areas?		
Q 7	What type of 3R infrastructure and facilities your city is equipped with? Please tick the appropriate.		
	Type of 3R infrastructure and facilities	Adequate/Significant	Not-Adequate/Non-significant

Seventh Regional 3R Forum in Asia and the Pacific

02-04 November 2016, Adelaide, SA, Australia

	<input type="checkbox"/> waste collection facility <input type="checkbox"/> waste segregation facility <input type="checkbox"/> waste storage facility <input type="checkbox"/> waste processing & treatment facility <input type="checkbox"/> resource recovery facility <input type="checkbox"/> waste recycling facility <input type="checkbox"/> waste to energy facility <input type="checkbox"/> eco-industrial zones <input type="checkbox"/> science parks/theme parks relevant to 3R <input type="checkbox"/> others (please specify:)	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
Q 8	Kindly provide the important 3R policies/programmes/projects/master plans that your City Government plants to undertake within next five years (2016-2021)		
	<ol style="list-style-type: none"> 1. Waste Separation at Source 2. Waste Diversion from the landfill 3. Incentivising the System 4. Capacity Building & Awareness Programmes <p>Please refer Appendix 1 for Framework</p>		
Q 9	In response to the 2030 Agenda for Sustainable Development, in particular SDG 11 (<i>Make cities and human settlements inclusive, safe, resilient and sustainable</i>) and SDG 12 (<i>Ensure sustainable consumption and production patterns</i>), how is your City planning to advance 3R and resource efficiency related measures?		
	<ul style="list-style-type: none"> • Implement waste separation at source regulation by mid -2017 • Enhance the collection of organic waste and treatment at source into liquid soil enhancers and compost. • Implement further resource recovery at the sanitary landfill with the establishment of an Eco-park • Conversion of organic waste into energy and other useful products. • Recycling and reuse of C&D waste and bulky waste. • Collection and treatment of mercury related waste such as used fluorescent lamps following the Minimata Convention. 		

Thank you for your kind cooperation.

Seventh Regional 3R Forum in Asia and the Pacific

02-04 November 2016, Adelaide, SA, Australia

Appendix 1

PENANG’S SOLID WASTE MANAGEMENT FRAMEWORK

POLICY: To implement and administer solid waste planning and management in an integrated, holistic, cost- effective and environmentally friendly manner through waste minimisation approaches moving towards the Zero Waste principle.

VISION

To implement and administer solid waste planning and management in an integrated, holistic, cost effective and environmentally friendly manner.

Objectives

- To establish a comprehensive, integrated, cost-effective, sustainable and socially acceptable ISWM;
- To manage wastes through a more holistic and comprehensive approach than today’s system, resulting in the conservation of natural resources and the creation of less waste and less pollution, and at the same time reducing the carbon footprint;
- To implement ISWM based on waste management hierarchy that shifts away from the “throwaway society,” toward a system that promotes a reduction in the generation and toxicity of trash giving priority to waste reduction through effective waste minimisation strategies (3Rs) where wastes are treated as valuable raw materials and energy resources and waste diversion from the landfill via resource recovery and composting strategies, and efficient final disposal; and
- To adopt stable, long-term funding mechanisms that provide sufficient revenue for state and local programs while providing incentives for increased waste reduction and diversion.

NO	STRATEGIES	OBJECTIVES	ACTION PLAN	ACTIVITIES
1	Waste Separation at Source	1. To ensure that waste is separated at the source of generation for easier resource recovery. 2. To ensure that municipal solid waste is free from contamination from	i. Implement mandatory waste separation at source for major recyclable items (e.g. paper, cardboard, plastics, metal, glass, e-waste and putrescibles).	a. Formulate regulations together with local authorities for announcement and implementation. b. Start awareness campaigns and pilot projects before statewide implementation.

NO	STRATEGIES	OBJECTIVES	ACTION PLAN	ACTIVITIES
		scheduled and hazardous waste		
			ii. Implement changes for waste separation starting with easy adopters - targets that are easily achievable e.g. wet markets, hotels, hospitals and schools; food courts under municipal control.	c. Encourage waste minimization and separation of waste at source for the residential, industrial, commercial and institutional sectors.
			iii. Change contractual agreements of waste collectors appointed by the municipality to cater for collection of separated waste.	d. Make changes to collection operations to provide a more holistic coverage of service areas.
			iv. Collect household hazardous waste (HHW) separately for safe disposal.	e. Establish collection centres f. Ensure local authorities have budget for safe disposal of HHW.
			v. Ensure that all infrastructures are ready to cater for the separated waste e.g. 2-stream system, buy-back centres, MRFs at transfer stations and landfills.	g. Facilitate and encourage the setting up of businesses for buy-back centres and programmes . h. Establish crucial capture points at transfer stations and landfill sites to prolong lifespan of landfills. E.g. MRFs, Waste to energy plants
2	Waste Diversion from the	1. To divert waste away from the landfill thus saving	i. Encourage the practice of 3Rs and changing peoples'	a. Establish Zero Waste Communities.

NO	STRATEGIES	OBJECTIVES	ACTION PLAN	ACTIVITIES
	landfill	municipal costs for Solid Waste Management (SWM) and prolonging the lifespan of the landfill.	attitudes and present practices. ii. Minimize waste at the front end so that waste is reduced in the first place rather than treating it later.	b. Establish efficient recycling network.
			iii. Divert the amount of organic waste (putrescibles) from the Landfill moving towards a total ban in the long term.	c. Encourage the commercial, industrial and institutional sectors to segregate food and kitchen waste. d. Encourage processing of food waste at source into bio-fertilisers
			iv. Encourage the processing of C&D at source.	e. Discourage the sending of C&D to the landfill. f. Encourage the recycling of C&D waste. g. Encourage the use of C&D waste for land reclamation or construction.
			v. Encourage the collection of green & bulk waste for processing into products.	h. Encourage the processing of green waste into production of "top Soil/bio-soil" or RDF.
			vi. License recycling businesses under a special "recycling" category with mandatory data collection and submission to the local authorities.	i. Register and license all recycling businesses. j. Develop a comprehensive databank for recycling data.

Seventh Regional 3R Forum in Asia and the Pacific

02-04 November 2016, Adelaide, SA, Australia

NO	STRATEGIES	OBJECTIVES	ACTION PLAN	ACTIVITIES
			vii. Issue permits for collection of recyclables for CBOs, NGOs, institutions and charitable organisations.	k. Register and issue permits to all collectors of recyclable items.
3	Incentivising the System	1. To determine the cost of Solid Waste Management (SWM) & Public Cleansing (PC) 2. To determine the amount of savings from waste minimization and diversion activities.	i. Finalise Payment Level and the Mode of Payment.	a. Survey of waste generation activities for commercial, industry and institutional sectors
		3. To develop incentive schemes to encourage waste minimization and diversion.	ii. Develop incentive schemes to encourage waste minimization and diversion of different types of waste such as paper, plastics, ferrous and non-ferrous metals, glass, e-waste & C&D.	b. Devise incentive systems to reward recycling and waste diversion practitioners. E.g. green school awards, green citizen, green industry etc. c. Devise a voluntary carbon credit scheme for diversion of organic waste. d. Establish an independent body to audit carbon credit schemes.
4	Capacity Building & Awareness Programmes	1. To build capacity for local government staff as well as continue and expand public awareness programmes	i. Build Capacity for Local Governments and to meet KPIs.	a. Send officers involved in SWM & Public Cleansing for capacity building programmes.
			ii. Continue and expand the public education and awareness programme in the	b. Establish more Environment Resource Centres to conduct community awareness and

Seventh Regional 3R Forum in Asia and the Pacific

02-04 November 2016, Adelaide, SA, Australia

NO	STRATEGIES	OBJECTIVES	ACTION PLAN	ACTIVITIES
			communities and institutions such as primary and secondary schools and colleges.	education community programmes c. Establish model communities that practices zero waste

