

A large indoor waterfall cascading down a curved wall inside a massive geodesic dome structure, surrounded by lush greenery. The dome's ceiling is a complex, repeating pattern of triangular panels. The waterfall is a wide, powerful stream of water falling from a circular opening at the top. The surrounding area is filled with various types of trees and plants, creating a dense, forest-like atmosphere.

**CIRCULAR ECONOMY,
SINGAPORE**
21st SEPTEMBER 2020

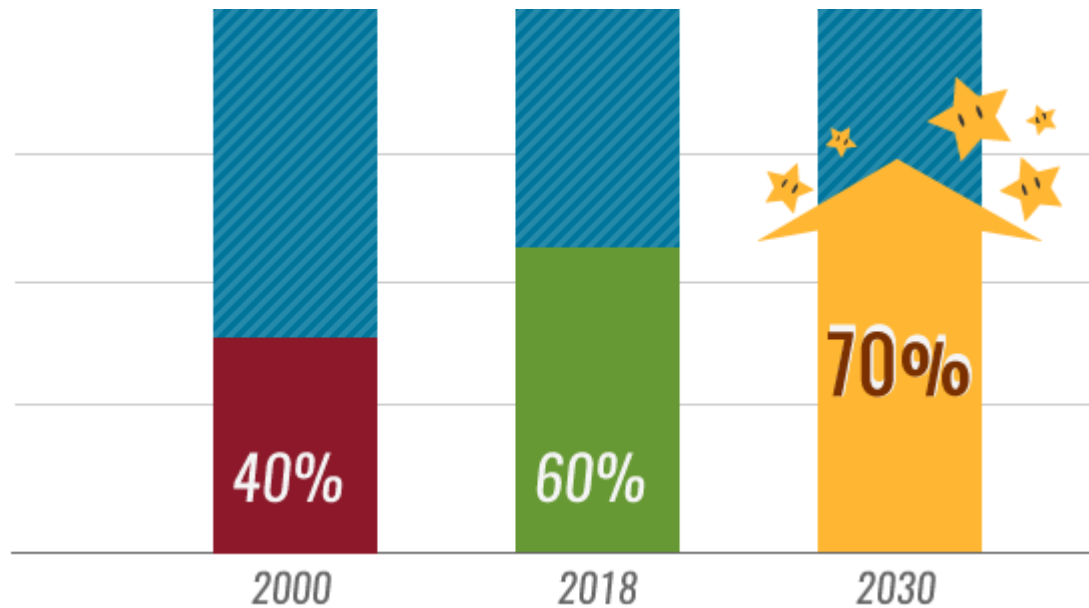
SINGAPORE TODAY

- Waste volume– 7.23 million tonnes
- Recycling rate – 59%
 - Non domestic – 73%
 - Domestic – 17%
- Waste exports – 34%

Waste Type (2019)	Total**	Total Recycled	Recycling Rate	Total Disposed
Construction & Demolition	1,440	1,434	99%	6
Ferrous Metal	1,278	1,270	99%	8
Paper/Cardboard	1,011	449	44%	561
Plastics	930	37	4%	893
Food	744	136	18%	607
Wood	438	289	66%	149
Horticultural	400	293	73%	107
Ash & Sludge	252	25	10%	226

***In thousands of tonnes. Source: National Environment Agency, NEA*

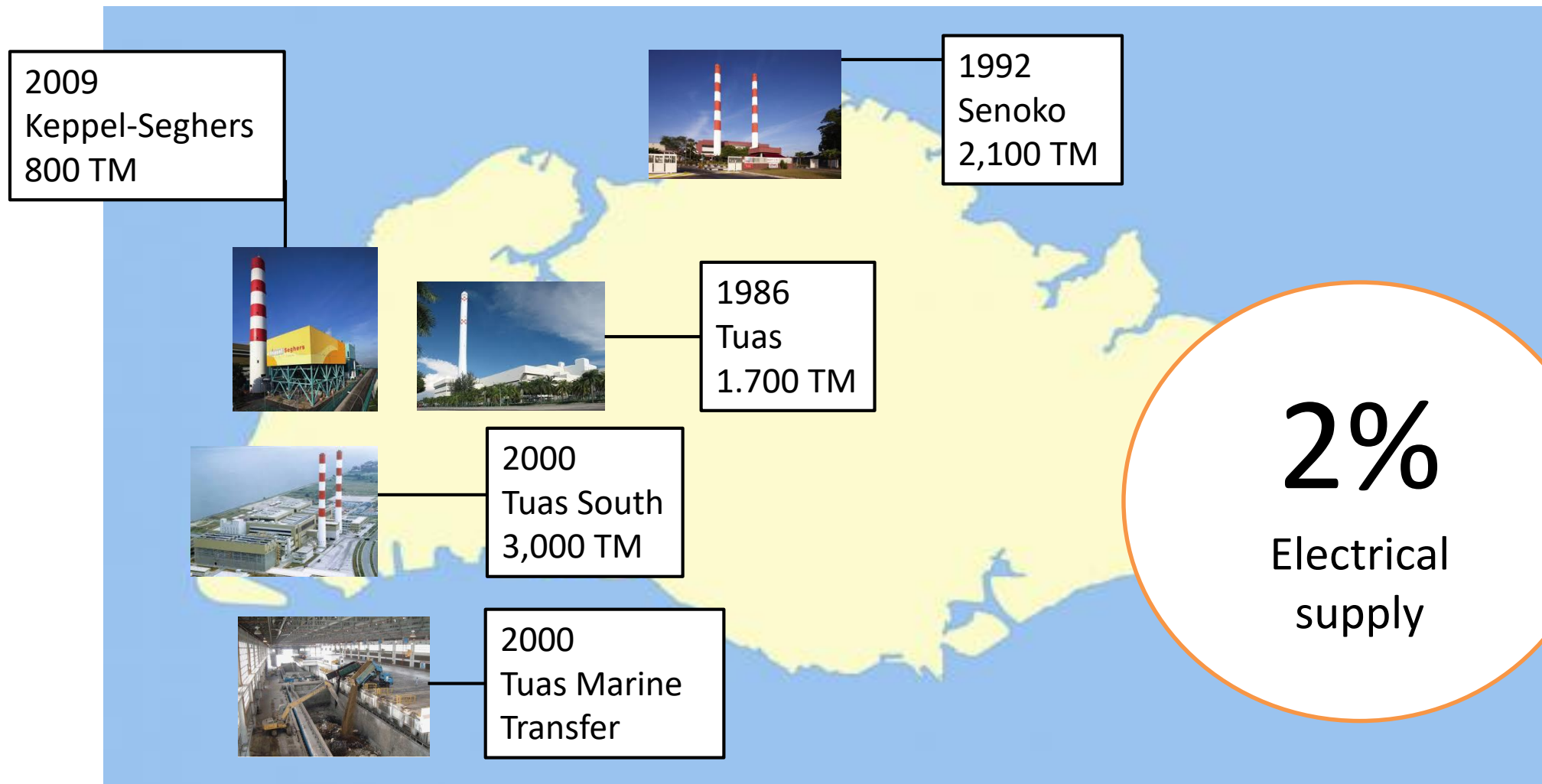
ZERO WASTE NATION – ZERO WASTE MASTERPLAN



OBJECTIVES

- ↑ Total Recycling rate – 70%
- ↑ Recycling rate, domestic – 40%
- ↑ Recycling rate, non domestic – 80%
- ↓ Daily waste shipments to Semakau – 30%

WASTE INCINERATION

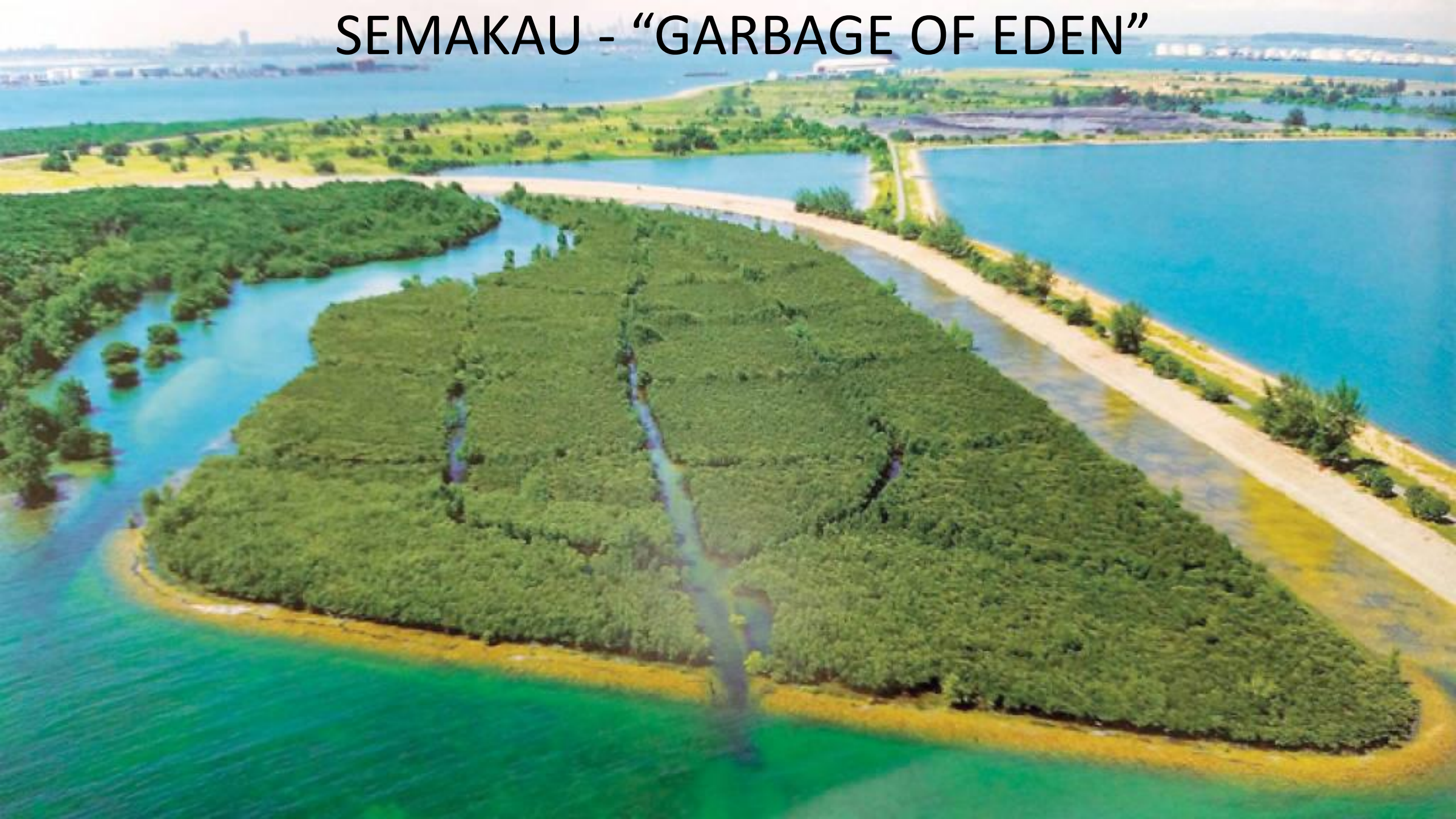


SEMAKAU LANDFILL

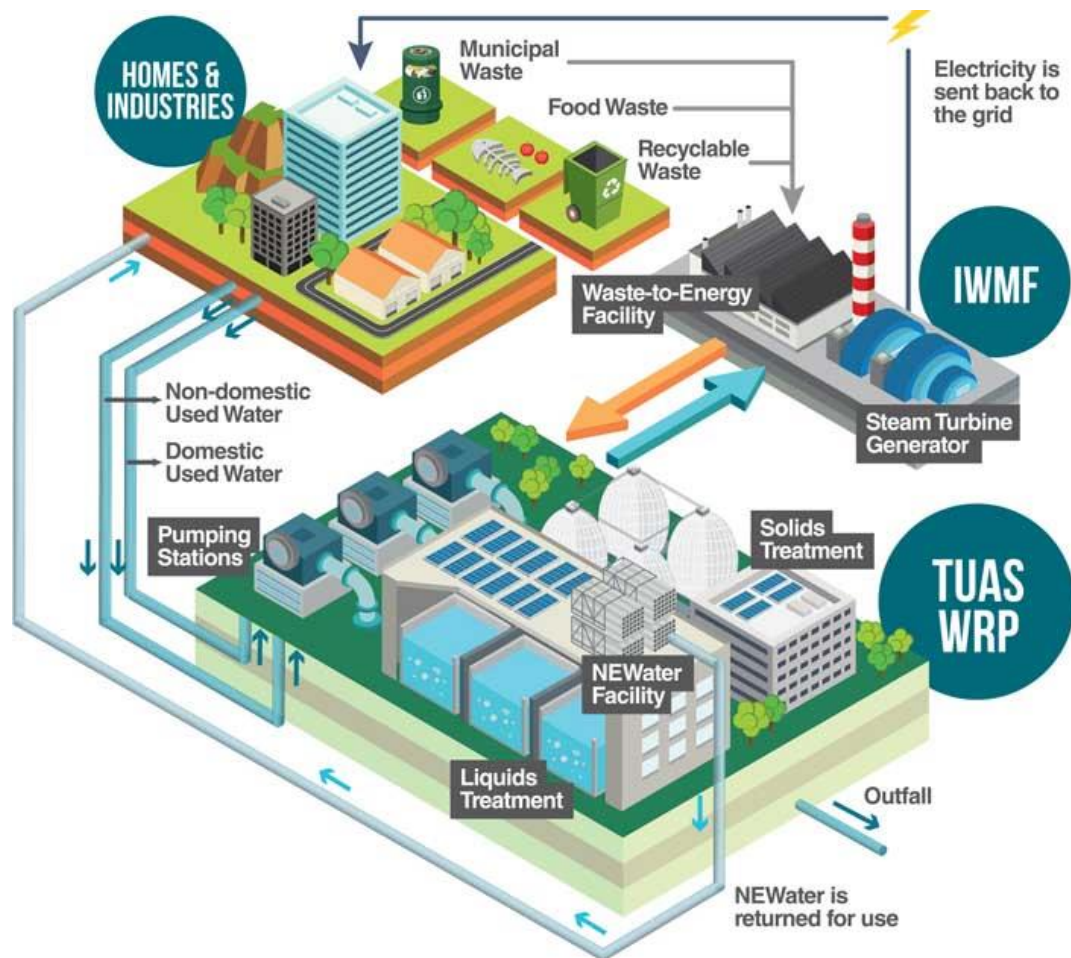
- 8 Km south of Singapore
- 7 Km perimeter, merger of 2 islands
- Phase 1, 1999: 13.6 million m³ capacity
- Phase 2, 2015: 14.5 m³ additional capacity
- Initial lifespan forecast: 2045



SEMAKAU - "GARBAGE OF EDEN"



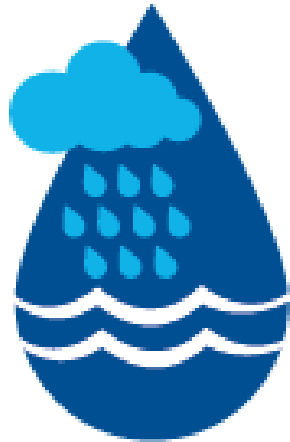
INTEGRATED WASTE MANAGEMENT FACILITY



- Elements (daily):

- 5,800 tonnes of incinerable waste;
- 250 tonnes of household recyclables collected under NRP;
- 400 tonnes of source-segregated food waste
- 800 tonnes of dewatered sludge from Tuas Water Reclamation Plant

SINGAPORE'S WATER STORY



**WATER FROM
LOCAL CATCHMENT**



**IMPORTED
WATER**



NEWATER



**DESALINATED
WATER**

2020:	40%
2030:	50%
2060:	55%

30%
30%
30%

CLOSING THE WASTE LOOP

SGD 45 Million for R&D in:

- Environmental remediation of closed dumping ground and landfill
- Data and analytic driven waste management solutions
- Diversion of ash and residues to conserve landfill space
- Resource and value recovery from key waste streams, e.g. plastics, food, electrical and electronic products

CLOSING THE WASTE LOOP

Utilization of
Incineration
Ash

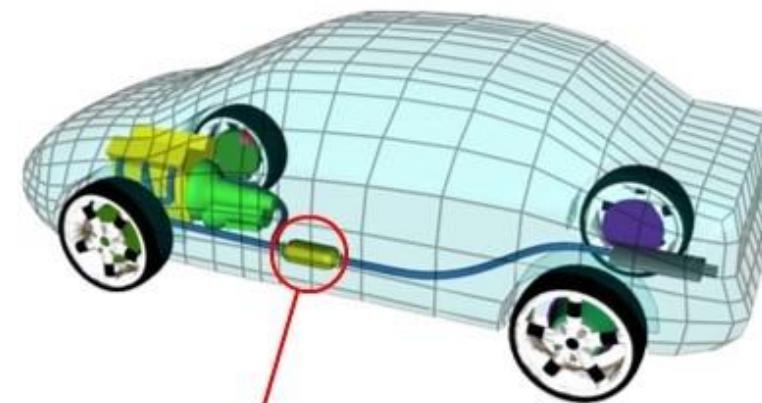
NEWSand
Republic Poly.
Col.: EnGro Corp



CLOSING THE WASTE LOOP

Utilization of
Incineration
Ash

**Catalytic
Converters**
NTU
U. of Warwick



Catalytic Converter

CLOSING THE WASTE LOOP

Sustainable
Design of and
Value Recovery
from Plastics

PE, PET
multilayer
packaging
recycling
ICES, A*Star



CLOSING THE WASTE LOOP

Sustainable
Design of and
Value Recovery
from Plastics

IS to produce
Recycled Plastic
Ingredients for
Infrastructure
Temasek Polytechnic
Yun Onn Co.



CLOSING THE WASTE LOOP

Landfill avoidance
& value recovery
from Non
Incinerable Waste

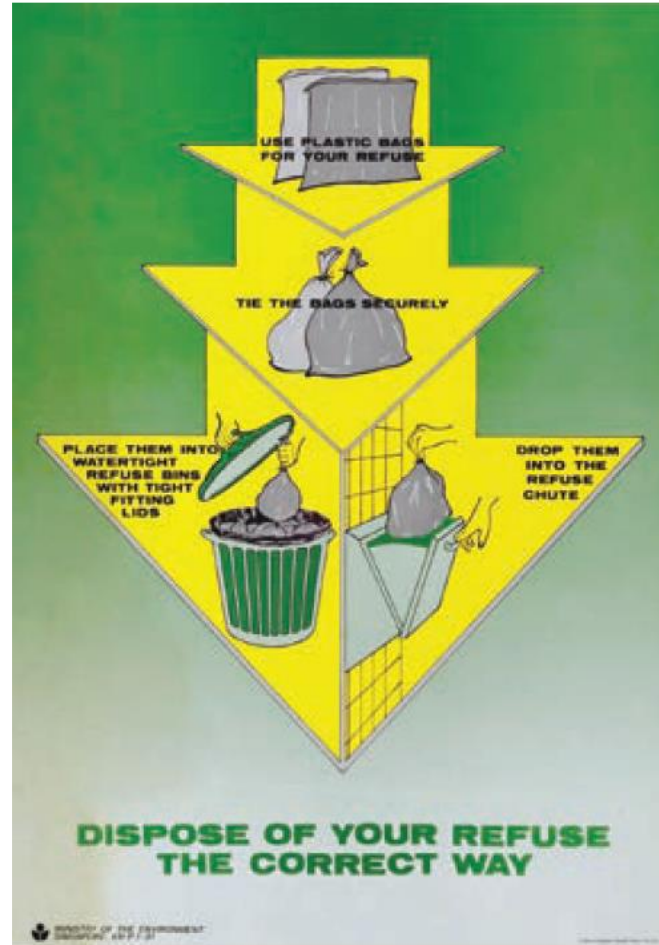
(Closed 25th June)

RFP
Environmental
Remediation

(Opened 10th September)



3Rs: REDUCE, REUSE, RECYCLE



3R FUND Program

- Co-financing program for waste reduction or waste recycling
- Corporations & other entities
- Up to 80% of eligible cost
- Up to SGD 1 million per project



**Servei d'Informació
Empresarial**

934 767 206
info.accio@gencat.cat



@accio_cat

Alt Penedès, Garraf i Maresme

Tel. 934 767 251
altpenedesgarrafmaresme.accio@gencat.cat

Catalunya Central

Tel. 936 930 209
manresa.accio@gencat.cat

Lleida

Tel. 973 243 355
lleida.accio@gencat.cat

Terres de l'Ebre

Tel. 977 495 400
terresebre.accio@gencat.cat

Alt Pirineu i Aran

Tel. 973 355 552
altpirineuaran.accio@gencat.cat

Girona

Tel. 872 975 991
girona.accio@gencat.cat

Tarragona

Tel. 977 251 717
tarragona.accio@gencat.cat

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