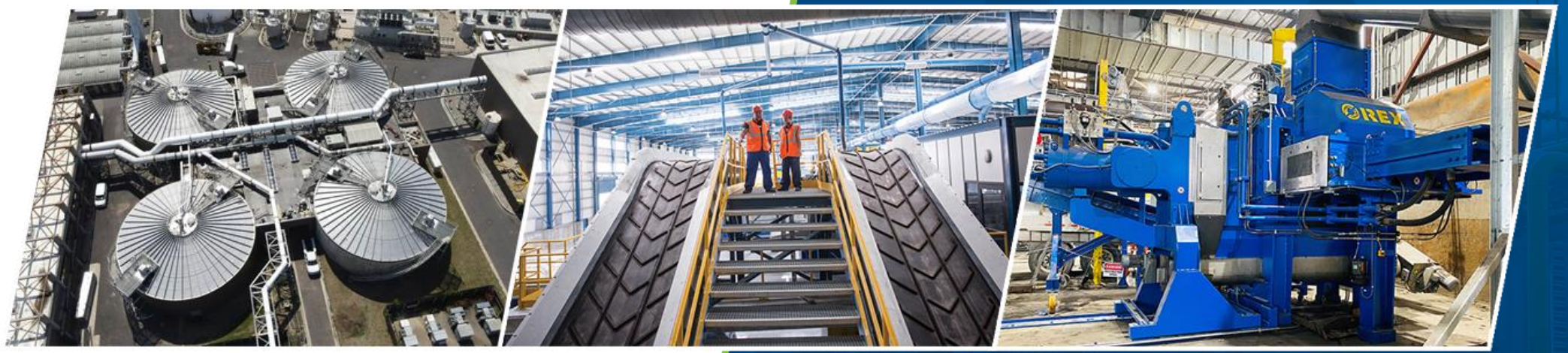
From Waste to Resource

Cities can be Smart in many ways – exploring business opportunities for the City of George, South Africa



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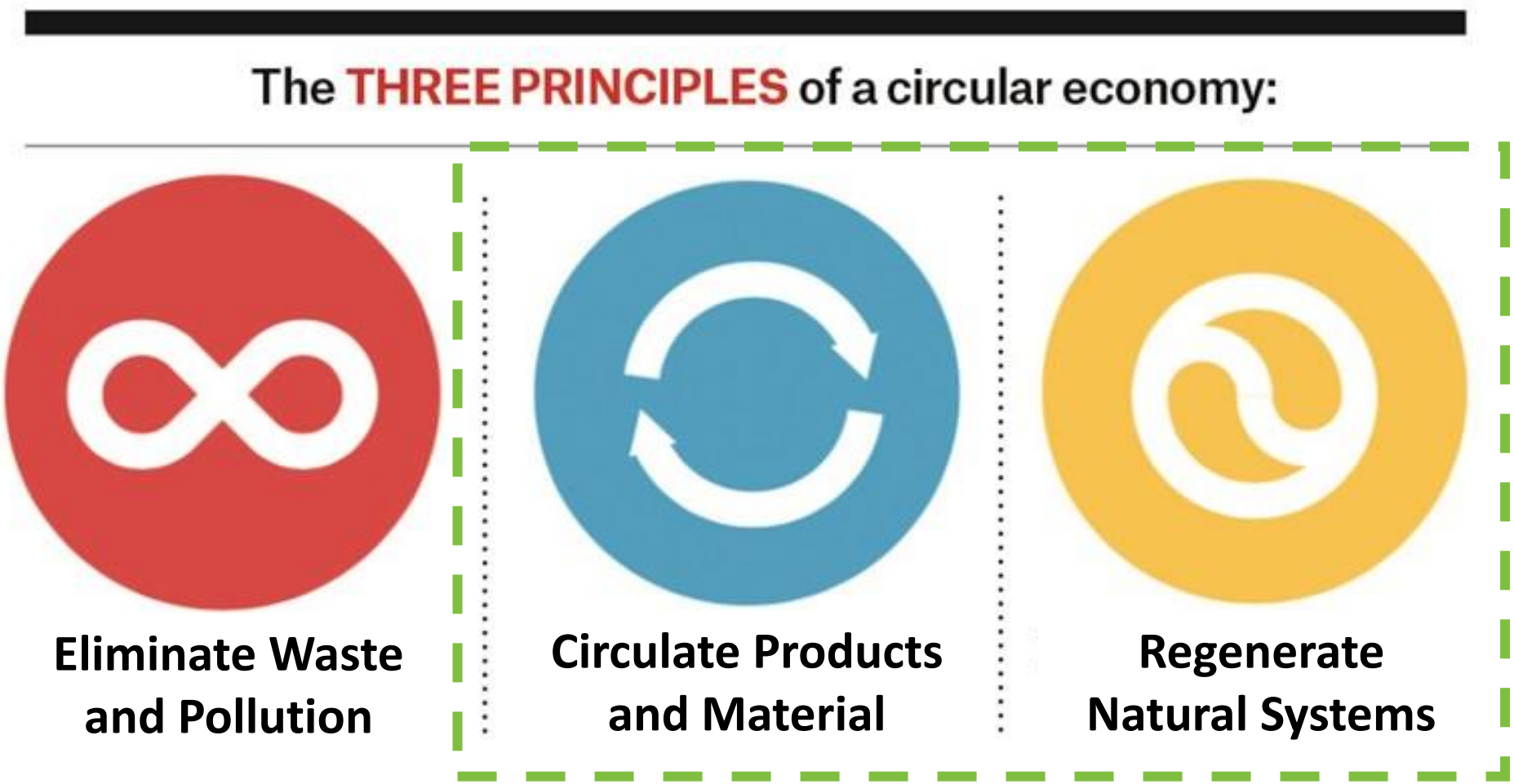
Fueling a Sustainable World

Smart Cities focus on a Circular Economy Approach



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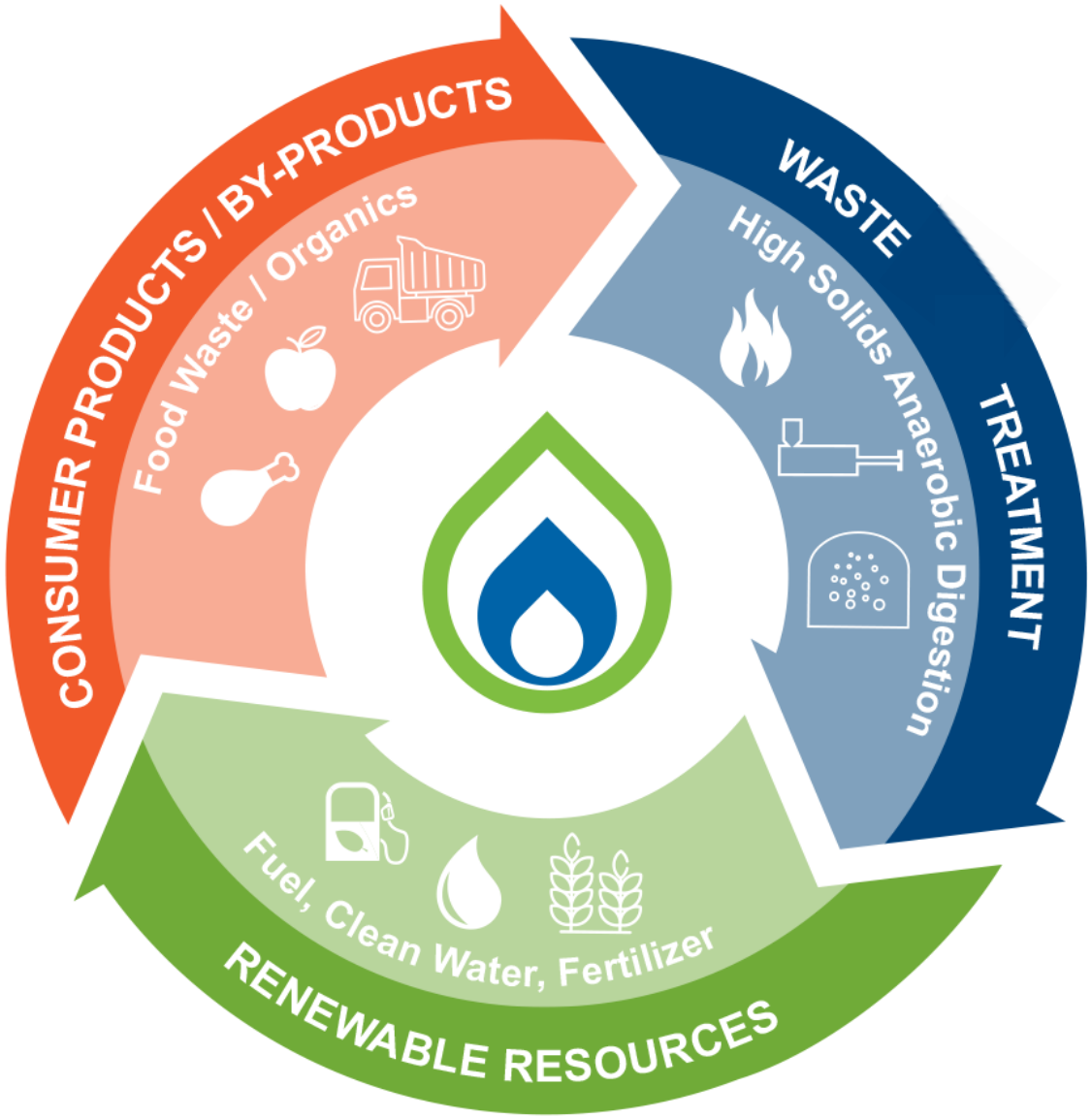
Circular Economy - From Waste to Resource



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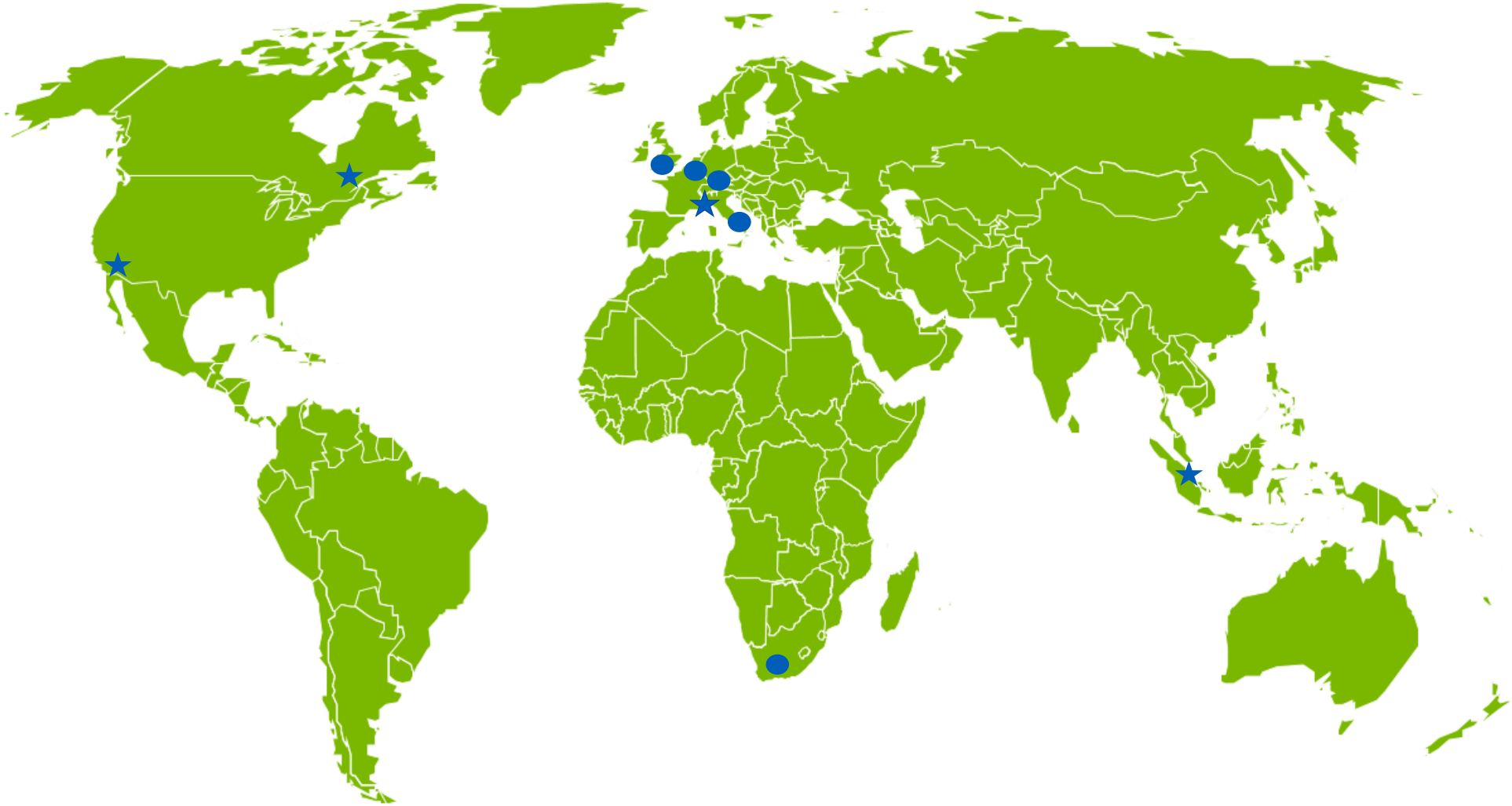
Anaergia's Global Footprint



1,700+ Projects, 10 Offices, 3 Factories, 4 Continents

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Enabling a Zero Waste Future

Wastewater Biosolids

Source Separated Organics

Municipal Solid Waste

Food Processing Waste

Agricultural Waste

Integrated Smart Solutions

Renewable Power

Renewable Gas

Recyclables

Fertilizer

Clean Water

Our mission is to convert waste into useful resources, protect the environment, and sustain life for generations to come.

Organic Waste and Organic Fraction of MSW in the Western Cape

- Most of our products end up on the landfill
- Organics on landfill generate GHG more potent than carbon dioxide from the transport sector
- +- 3 Million tonnes of organic waste are produced annually in the Western Cape
- Western Cape's Organic Landfill Diversion:
  - 2022: 50%
  - 2027: 100%
- The province will need to divert an additional 148 655 tonnes (21.4%) of organic waste from landfills to meet the 50% reduction target

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How to achieve the organic diversion goal? The Smart Way…?

3 Cart

Source Separation

- Recyclable
- Compost / Biogas
- Landfill

1 Cart

Smart Facility – Waste to Resource

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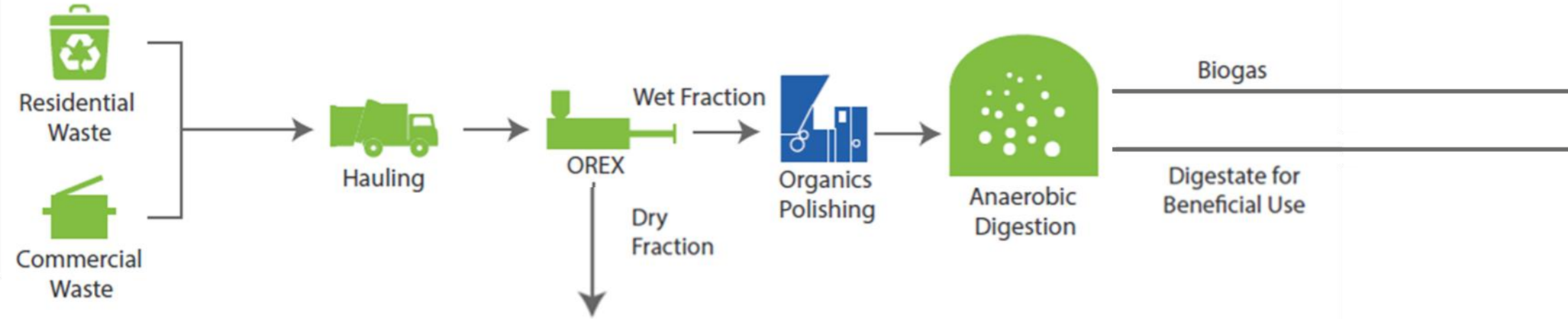
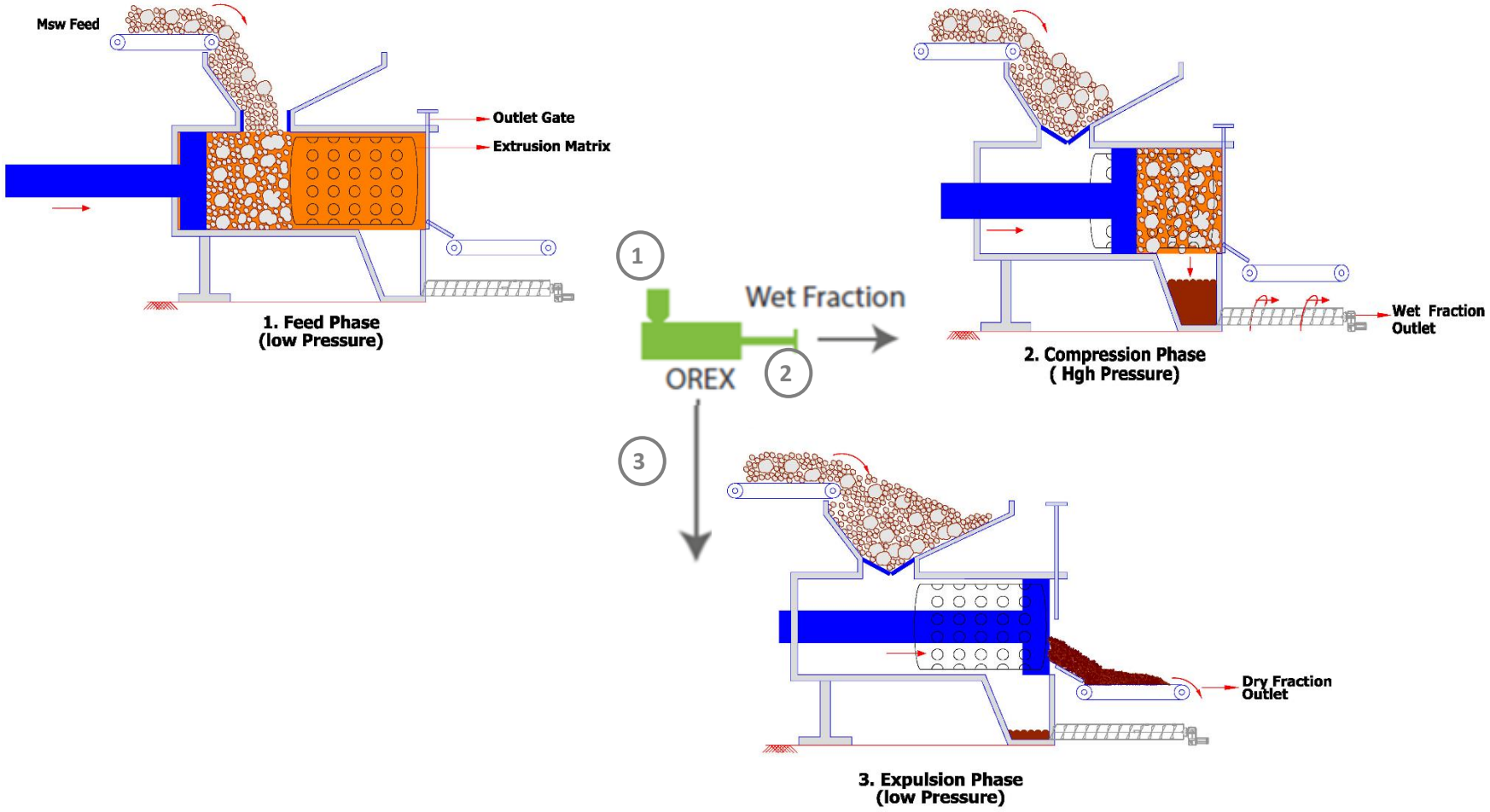
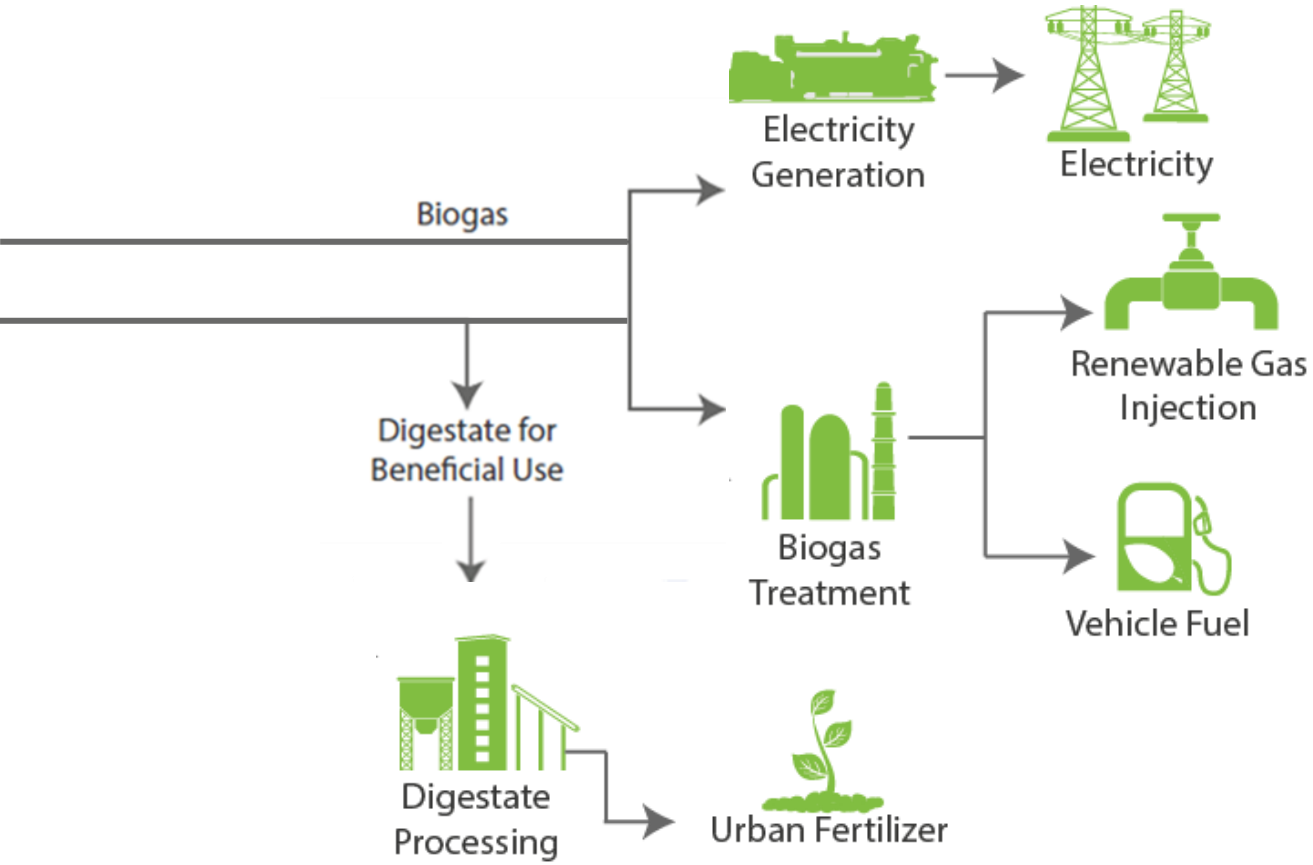
Anaergia's Waste to Resource Approach



Anaergia's Waste to Resource Approach



Anaergia's Waste to Resource Approach



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Magnetic-
separator

Wind sifter /
Optical sorting

Tear
shredder

Wave
screen

Eddy
current

RDF
shredder

Organic Extrusion Press (OREX)

MSW, SSO

Dry

Wet

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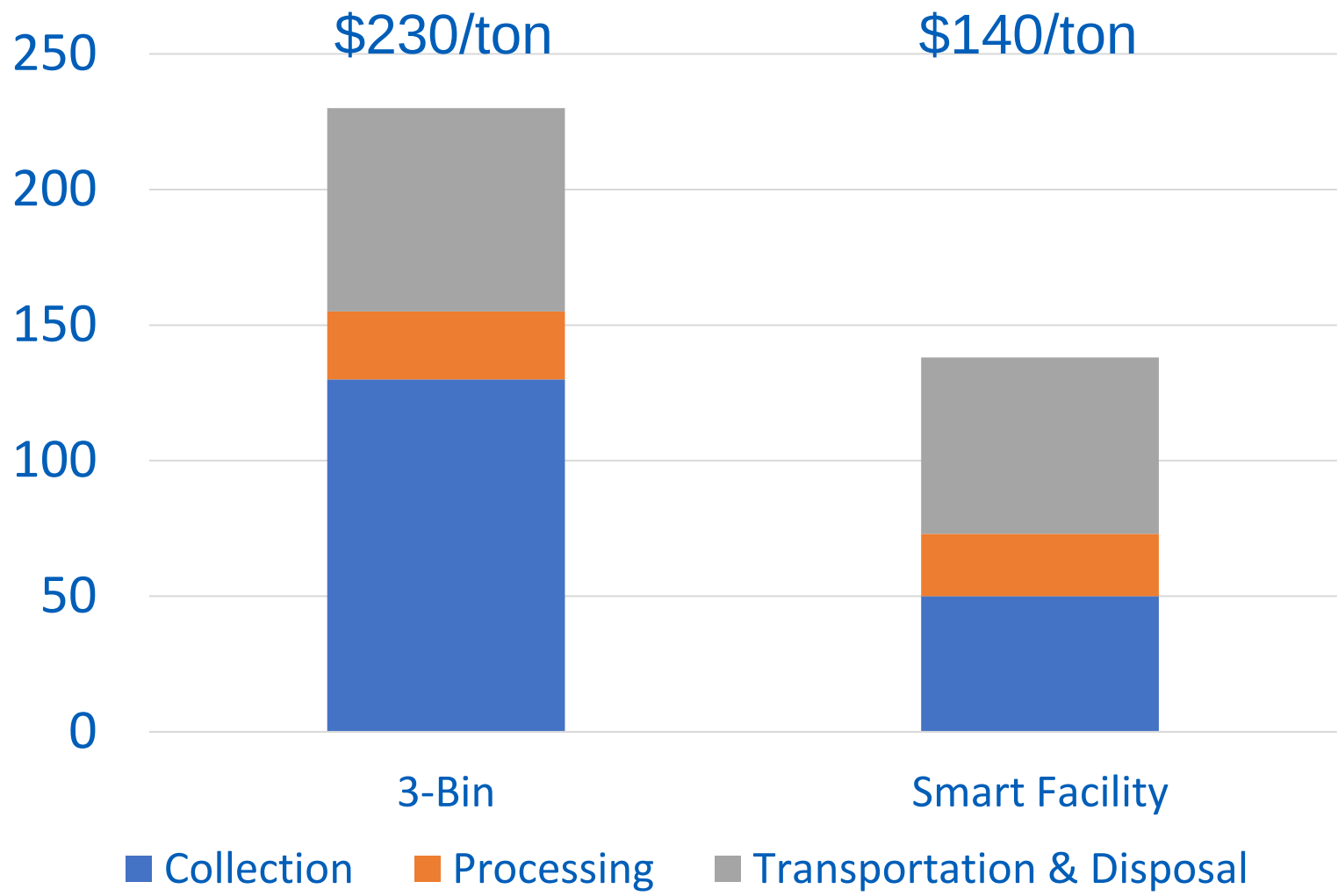
Processing black bin trash through Smart Facility using OREX offers 40% savings compared to 3-Bin collection



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Over 1,700 High Solids Digesters Globally


Worcester, South Africa


Shropshire, UK


Orlovanjak, Croatia


Cape Town, South Africa


Röblingen, Germany


Szarvas, Hungary

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Rialto Bioenergy Facility

the largest Organic Waste to Energy Facility in North America

General Facts

Project Location: Rialto, California
Expected Startup: 2020
Scope: Design, Build, Own, Operate, Finance

Key Technologies

Organic Waste Polishing
Anaerobic Digestion
Biogas Conditioning
Biogas Upgrading to Pipeline Injection
Power Generation
Biosolids Drying
Pyrolysis
Wastewater Treatment

Inputs

Organic waste (up to 700 tons per day)
Municipal Wastewater Biosolids (up to 300 tons per day)

Outputs

Renewable Natural Gas Production: Up to 1,000,000 MMBTU per year
Electricity: Up to 4.6MW
Urban Fertilizer (Class A Biochar): Up to 30 TPD
Digestate Fertilizer: Up to 85 TPD

Impacts

GHG Reduction: Up to 220,200 tons per year CO_2
Equivalent to Emission of 47,500 Cars

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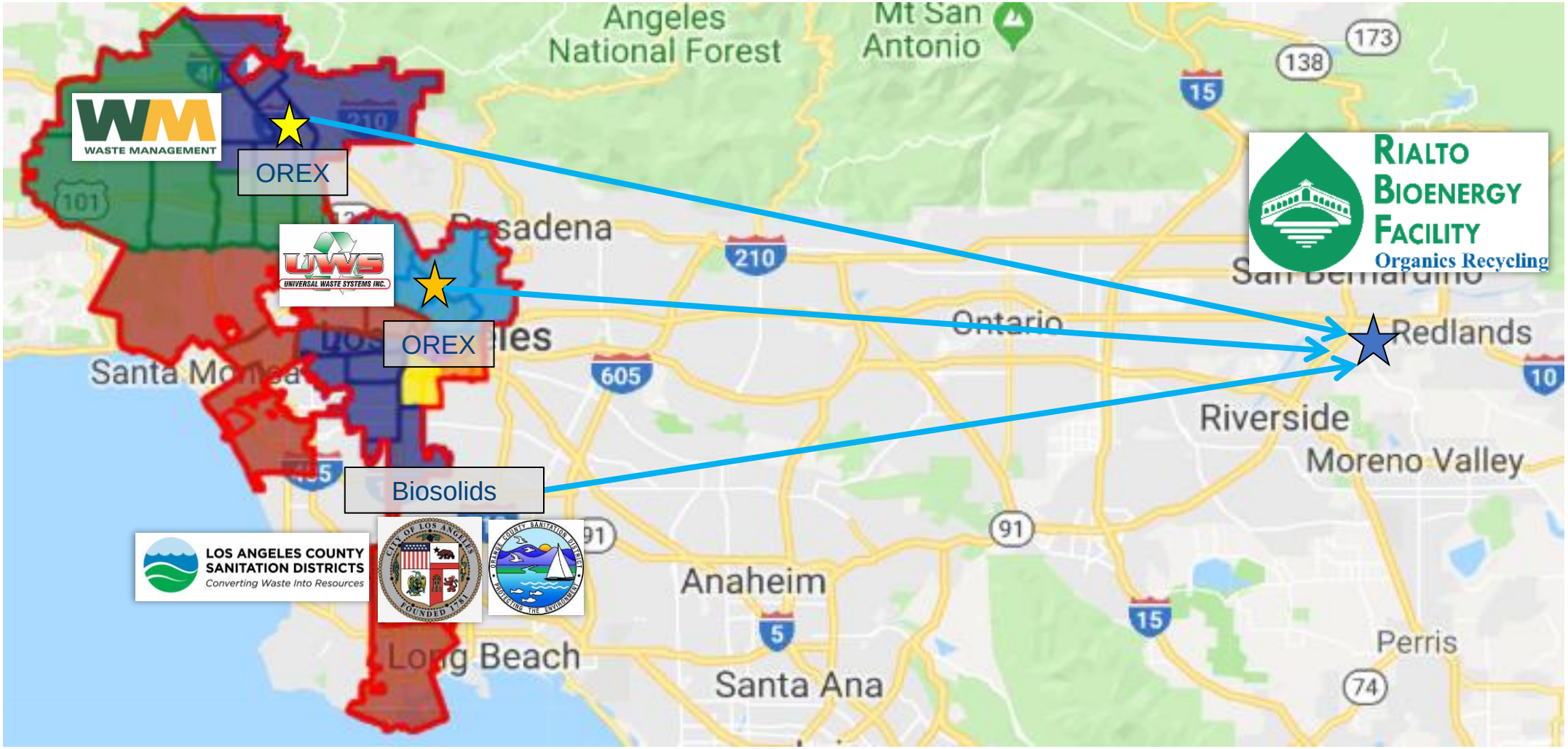
Anaergia AD Plant (Rialto Bioenergy Facility) acts as organics outlet



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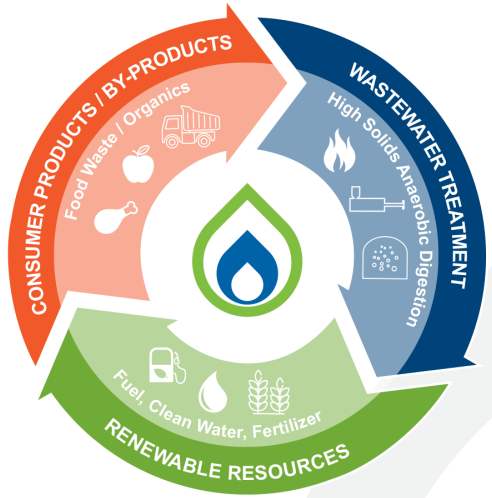
Rialto Bioenergy Facility

Distell Worcester – Industrial Circular Economy

The perfect example of local execution company Tecroveer and international technology provider Anaergia

- Industrial waste water and solid waste digestion system
- Turning into energy, fertilizer and clean water
- Full EPC Contract (Tecroveer, Anaergia Subcontractor)
- 10 year O&M contract



Key Project Data		
Substrate Input	m³/d	1.058
Biogas Output	Nm³/h	834
Dewatered Cake Output (24%TS)	tonnes/d	64

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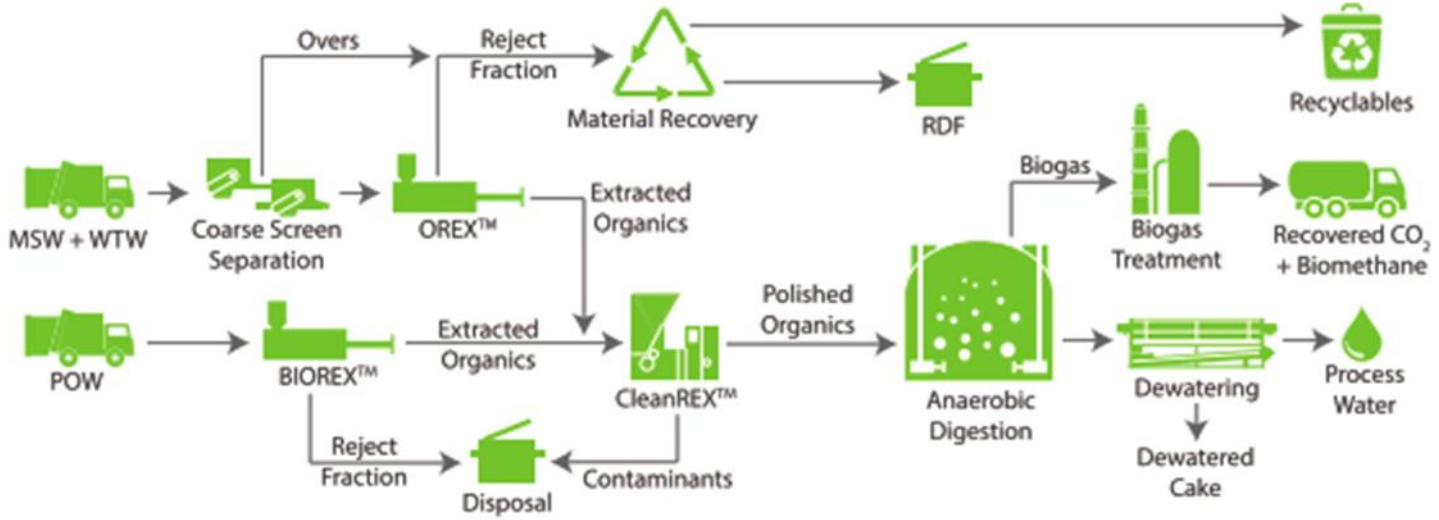
Cape Town – Legislation Enables the Waste to Resource Approach



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