



**CITY OF CAPE TOWN  
ISIXEKO SASEKAPA  
STAD KAAPSTAD**

## **Integrated Waste Management Planning Update: Appointment of the Transaction Advisor (TA)**

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**Making progress possible. Together.**

# Agenda

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Aim of this presentation: to update participants on the process the City of Cape Town has developed over the last years since the Municipal Systems Act Section 78 (3) assessment, and the plan going forward.

- Overview of waste management change process
- Transition challenges towards Integrated Waste Management, and future plans.
- City Projects.
- Transaction Adviser (TA) for PPP feasibility assessments.

# Overview of waste management change process

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# Waste Management Economic Landscape

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- City contracts and projects supporting the CT regional economy:
  - ✓ Think Twice has entered its eighth year: covers about 1/3 of formal households in Cape Town, but constrained by budget to roll-out more: feedstock for re-use, manufacturing and export.
    - Drop-offs: Pressure to close some, develop new ones (more)
    - Recycling in informal areas: community involvement needs to be developed – lacks a mechanism.
- Chipping contracts, green waste recovery: composting industry.
  - ✓ Household hazardous waste receiving at certain drop-offs.
- Rubble crushing contracts: end-use impeded by technical standards.
- Landfills:
  - ✓ new landfill EA referred to High Court.
  - ✓ Monitoring, closure and rehabilitation of old landfills.
- Landfill gas extraction and flaring infrastructure:
  - ✓ Design and construct (Coastal Park and Bellville South landfills).
- Feasibility studies for possible future Helderberg, Coastal Park RTs

# Transition challenges towards Integrated Waste Management, and future plans.

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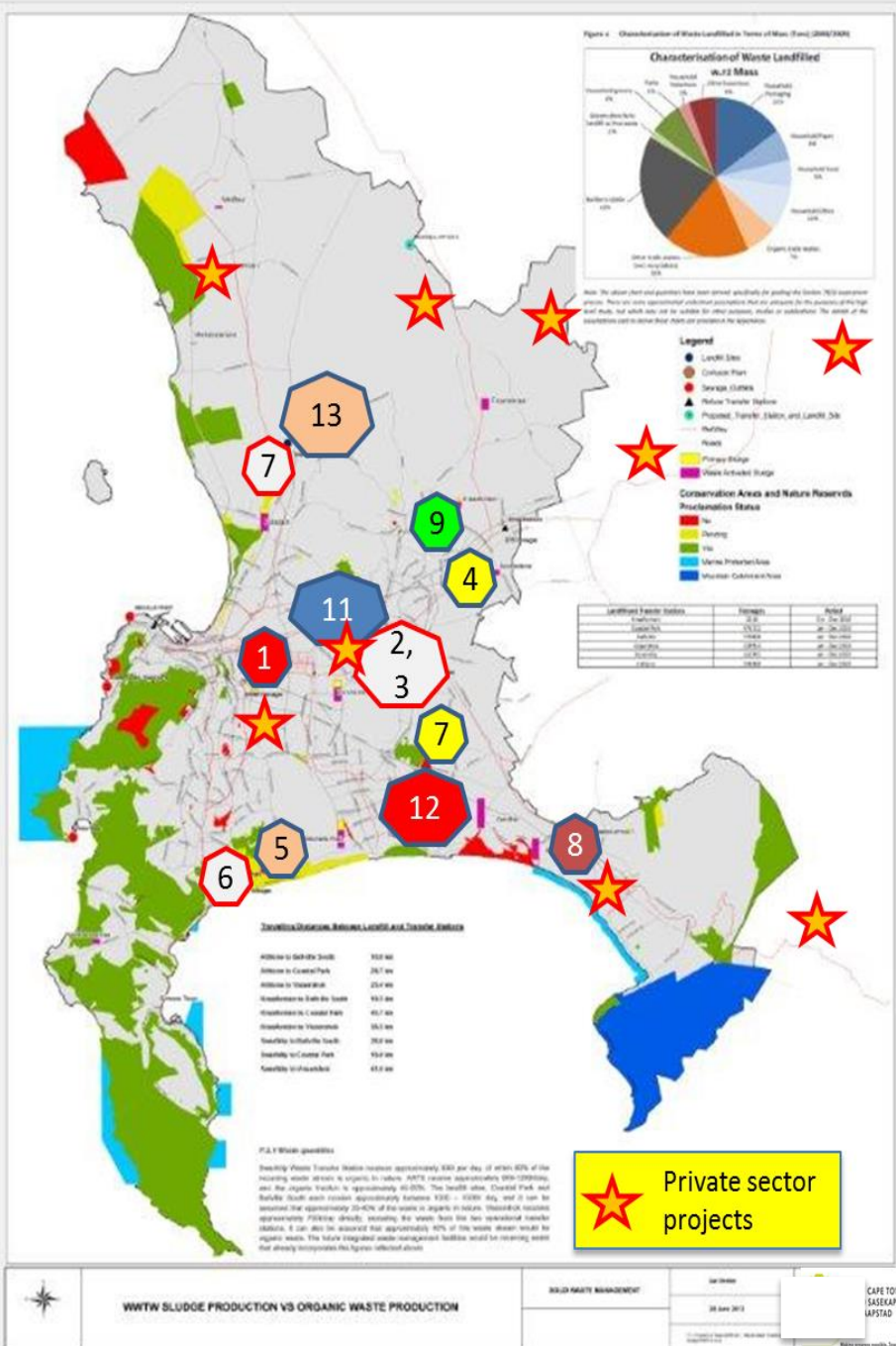
# Potential Waste Projects: Cape Town Region

**Potential City Projects - contextualised by previous and current work:** S.78, technical feasibility studies, CDM PoA registration, etc.

- Scale (type, volume/ mass of waste).
- Sustainability & affordability - potential private sector investment and needs.
  - W-E projects – methane for electricity generation or heating, refuse derived fuel, other?
- Synergies with key local, regional industries?
- Available vs. planned infrastructure (both public and private sector).
- Best appropriate, long-term solutions that are affordable, sustainable, have low risk?

## Projects or contracts in Solid Waste Management and Water & Sanitation Depts:

- Landfills – Landfill gas (2, 6, 7/ 4, 7, 12).
- WWT sludge, bio-mass, organic solid (Anaerobic Digestion, AD – 5, 13).
- IWM sites (recover, separate for recycling, plus other options, e.g. AD: 1, 3, 9, 12).
  - Pilot project (2015): pyrolysis ...



# Status of Projects in Solid Waste Management Dept.

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- **Landfill gas projects 1 (Bellville South), and 2 (Coastal Park), 3 (Vissershok),** tender evaluation complete, adjudication underway to award for:
  - Design, supply & construction of gas extraction and flaring infrastructure.
  - Tender adjudication underway for the design of the extraction and flaring facility.
  - EIA authorisations incomplete.
- **Bellville South project:** intend to partner with an industrial partner to supply gas for industrial process heating (cheaper, economic development opportunity).
  - 1<sup>st</sup> project should be operational by early-2016.
  - Request for Proposals showed 2 interested parties.
  - Awaiting further information from 1 party.
  - Will be evaluated soon to structure a sales agreement that will be reported to Council for approval with MFMA S.33 process.
- **Coastal Park project:**
  - registration project for the CDM registration with the UNFCCC.
  - approx. 2 MW electricity generation to sell back to ESKOM.

# Status of Projects in Solid Waste Management Dept.

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- **Kraaifontein Plastic Waste-to-Oil project (Japanese government funded)**
  - Pilot test of technology per MoA signed in March 2014.
  - Environmental Assessment Practitioner appointed – 1<sup>st</sup> meeting 23 July.
  - Construction start will depend on receiving environmental and other authorisations (including air quality licence): expected 2<sup>nd</sup> quarter 2015.
  - Application to DEA&DP to downscale EIA to a Basic Assessment made 1 August (will shorten authorisation process dramatically).
  - Equipment being manufactured in Japan at present, delivery early-2015.
  - 6-month test period before further decisions.
- **Athlone Mechanical Biological Treatment (MBT) Project**
  - Technical study funded by KfW completed for Anaerobic Digestion waste-to-energy project that could possibly be implemented at the Athlone Refuse Transfer Station.
  - Dependent on further assessment via specialist study to determine size, costs, funding options and affordability.



# Intended outcomes of Northern Areas Biosolids Project

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1. Project designed to be built in 3 phases.
2. Phase 1:
  1. Processing of 640 tonnes wet (or 90 tonnes dry mass) per day.
  2. Est capital cost R470-million.
3. Biogas production: 1340 – 1880 Nm<sup>3</sup>/hr (roughly 1.9 – 2.7 MW electricity).
4. Site designed to be energy neutral (will not need grid energy once in production).
5. Phase 2 and Phase 3 (medium to long term as city grows):
  1. To process 1040 wet tonnes/d and 1400 tonnes/d
  2. Est costs R200-million per phase

# Key considerations informing future City Projects

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- Key industry investment initiatives – opportunities that will complement City plans and may reduce need to invest (private sector will invest):
  - Recycling Economic Development Initiative of South Africa (REDISA )
    - industry plan for waste tyres – key output is energy recovery (cement kilns).
  - Organic waste treatment (Anaerobic Digestion):
    - Food production residues, mono wastes, sludges, etc.
  - Packaging Industry of SA (PACSA):
    - Draft Industry waste plan to recover packaging materials firstly for processing and re-use – plastics, paper, cardboard, glass, metals, wood, etc.
      - More economic value as more job opportunities in processing and manufacturing industries than in waste-to-energy sector
    - Final solution (if reuse is not possible): incineration of some materials, e.g. paper and other high energy materials(Combined Heat & Power in industry to reduce production costs, considering rising cost of electricity).
- Other opportunities?
  - Problem wastes that do not have easy solutions need innovation – disposable nappies: tricky solution, but a great source of feedstock for energy recovery.

**Bottom line when considering partnerships: Affordability, sustainability to avoid landfilling, add to economic development and reduce climate change and resource impacts**



# Clean Development Mechanism (CDM) Registration with United Nations Framework Climate Change Convention (UNFCCC)

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Landfill Gas programme of Activities (PoA) for landfill gas  
extraction and use projects  
Treatment of Organic Waste PoA for anaerobic digestion  
projects

# Progress to date: CDM Registration project

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- Project Steering Committee report back from last week:
- Processes remain administratively intense and complex.
  - Landfill Gas programme of Activities (PoA) for landfill gas extraction and use projects :
    - Landfill Gas PoA project documentation submitted to UNFCCC on 23 July 2014 – now in final process before registration.
  - Treatment of Organic Waste PoA for anaerobic digestion projects:
    - Cape Flats WWTW could not be registered – could not show additionality to qualify for CDM
    - Consultant assessing the Northern Biosolids Treatment Facility as an option to register the PoA.
      - W&S Department providing information at the moment.
- May provide an opportunity for Carbon Offset projects (partnering with industry) in terms of National Treasury discussion document.



# Kraaifontein Plastic Waste-to-Oil project (Japanese government-funded project per MoA with JICA)

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# 1. Waste plastic-to-oil Pilot Plant Project



Cape Town Material Recovery Facility (MRF)



Storage area



Landfill



Waste plastic-to-oil Pilot Plant (max. 600kg/day waste plastics convert into 600 litter of cracked oil/day)

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# Transaction Advice

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# Transaction advice tender has followed due process

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- MSA S.78 process is complete with Council resolutions in support of process to assess feasibility of PPPs, with identified projects noted in C18/12/10 and C/34/03/11.
- City registered with National Treasury with the intent of assessing viability of establishing PPPs.
- Previous Transaction Advisor tenders:
  - Cancelled 1<sup>st</sup> time due to appeal upheld by City's Appeal Authority.
  - Cancelled 2<sup>nd</sup> time due to no responsive tenders left out of 4 at the early (pre-evaluation) stage.
- 3<sup>rd</sup> tender: Scope and specification being finalised by Bid Spec Committee:
  - Panel approach: to allow for appointment of expert consultants to a panel.
  - Flexibility: to cut down on time to complete process after appointment of consultants to panel.
    - Scopes of work for projects already identified from S.78 process to be offered to panel – closed tender.



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**Thank You**

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