

PET Recycling

To reduce waste and improve air quality

Initiative by Health Unit, Air Pollution
Control & Risk Management

21 May 2009



Content....

- Background and Context within AQMP
- What is PET
- Objective on PET collection & recycling
- Pilot Targeted Area Strategy
- 2010 Greening Project

Integration and Linkages with AQMP

- Of the several themes
 - Sulphur dioxide, VOCs, indoor AQ, vehicle emissions, **particulate matter** (PM), is the subject of focus today
- PM Sources
 - Industry, vehicle, biomass, informal and residential waste combustion
- Concern
 - Up to 60 % of dioxins can originate from informal/backyard waste combustion
 - Most times exposure is direct to recipient and hence highly concentrated
 - Diffuse chemicalisation of the environment

Air Pollution and Health effects: Focus on Plastics, rubbers and tyres

● Issues

- Particulate matter
- Heavy metals
- Dioxins and furans
- Poly aromatic hydrocarbons (PAHs)
- PCBs
- Health effects
 - Respiratory (TB, Asthma)
 - Chemical poisoning
 - Unsafe food
 - Cardiovascular
 - Quality of life



Air Pollution and Health effects: Focus on Plastics, rubbers and tyres

● Challenges

- Enforcement (informal)
- Lack of producer responsibility
- uneconomical



Air Pollution and Health effects: Focus on Plastics, rubbers and tyres

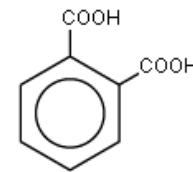
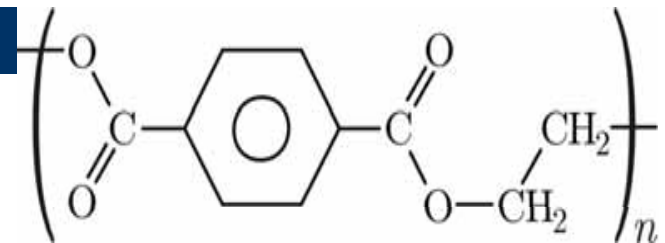
● Solutions

- Awareness and
- Outreach
- Incentivisation schemes
- Partnerships
- **Institutional support for recycling**

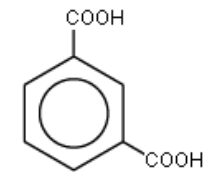


What is PET..?

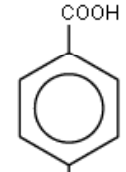
- PET stands for Polycyclic ethylene Terephthalate.



phthalic acid

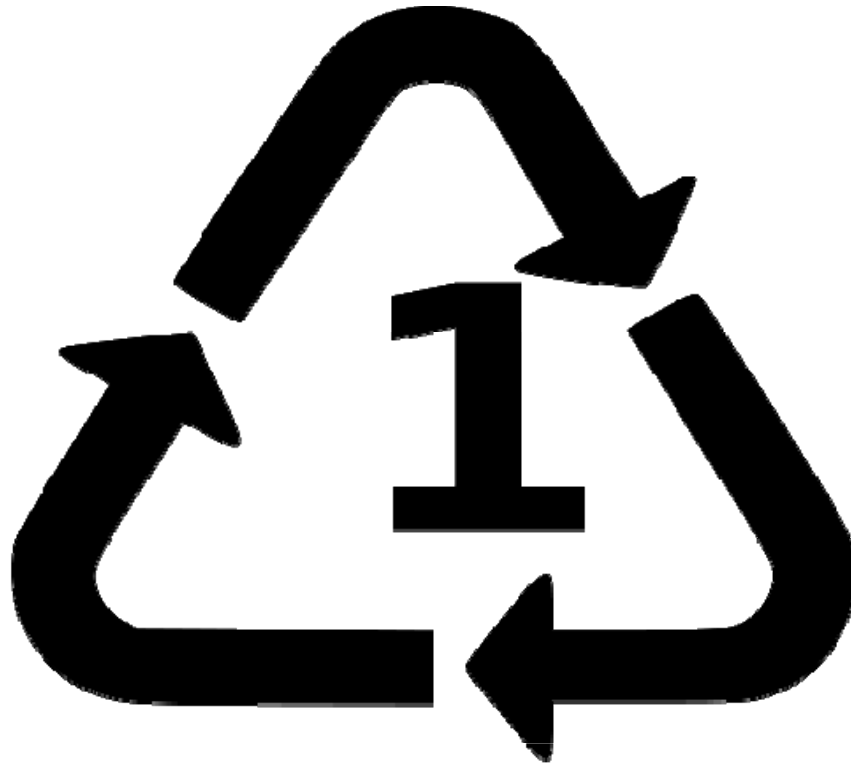


isophthalic acid



terephthalic acid

How do I identify it...?



PETE

....PET bottles



Objective on PET collection & recycling..

- To engage the public, organisations and institutions
- To contribute to plastic waste minimization strategy.
- To tackle the challenges of informal burning of waste in the city, eg. mixed waste including, plastics & tyres. (toxins)
- Education on general waste management
- Popularise recycling.

Need to make it popular

Children encouraged to recycle in Athens



PET current situation...

- On the roads
- Mixed with other waste streams
- Landfill sites
- In the Beaches
- Streams
- Blocking storm water drain
- General litter along street drains & verges
- Toxic emissions when informally combusted



Targeted Pilot Area

Strategy Network...Area of Focus

- Piloted at Warwick Triangle
- Workshop
- Metro Rail network
- Curbside collection points or Buy Back centers
- Fast Food retailers
- Hotels
- School
- eThekweni Municipality Departments
- Communities
- Sports events-Soccer events (2010 Greening)
- Fan Park 2010



PET collection...process operation

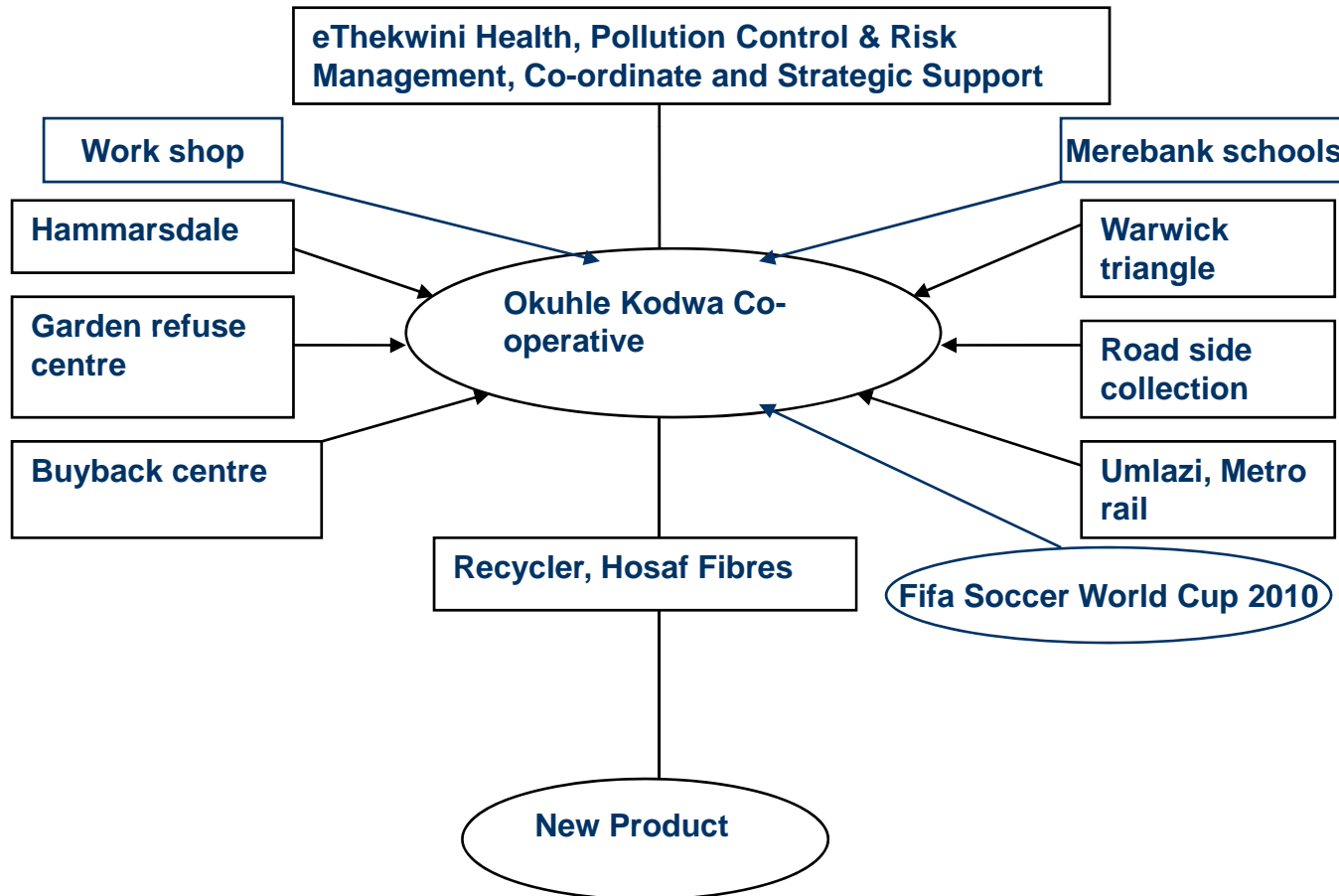


- PET is collected & sorted.
- Compacted and Packed.
- Ready to be delivered to the recycler.
- Continuous education programs.

Project PET...

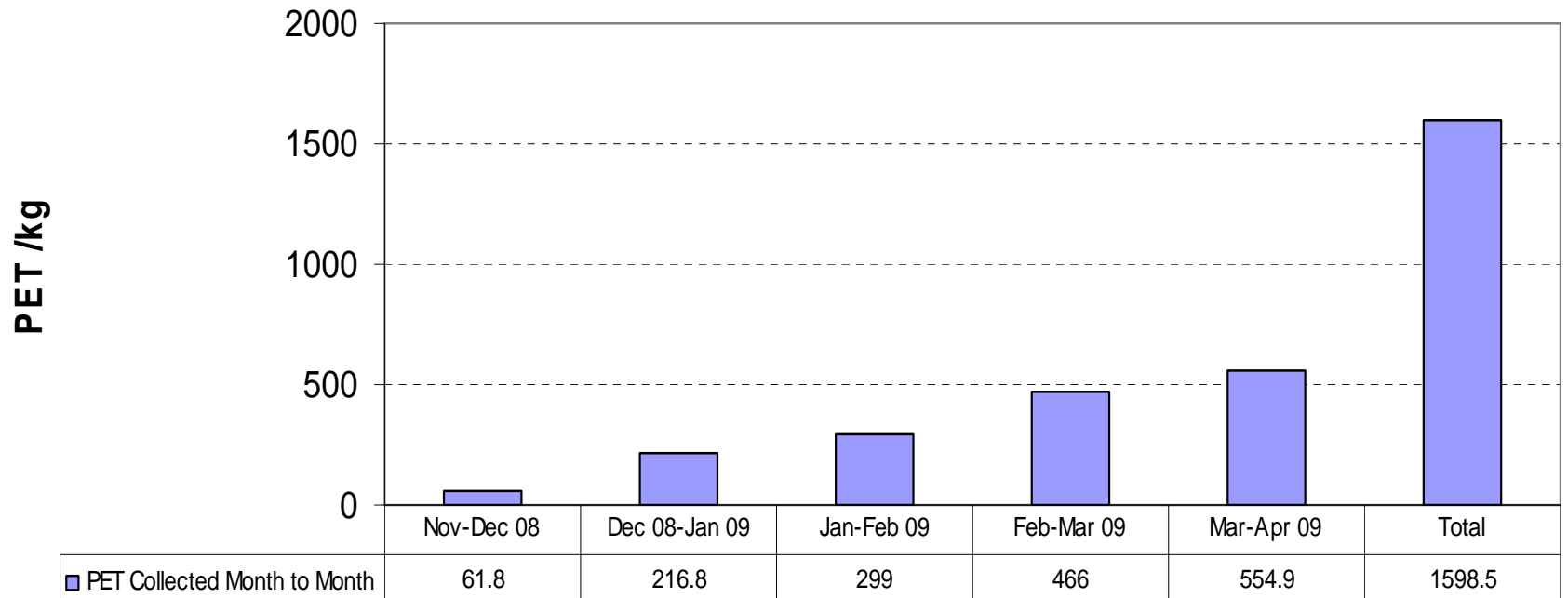
- Community has been encouraged to register into Co-operative of unemployed persons.
- Co-op got PET training by DSW, PFSA & PETCO on the 6 October 2008.
- DANIDA support R100 000
- Co-op will apply for funding from DTI for the value of R250 000.
- Support by SEDA for operation space.

Co-operative Network and Stakeholders



Amount of PET collected to date..

PET collection & recycling Monthly Monitoring



Benefit of PET collection & recycling..

- 1 ton PET recycled save 2.2 tons of CO₂
- Reduce Climate Change.
- 1 ton PET save 6 cubic meters of landfill space.
- Save earth's non renewable resource
- Create jobs
- Engages the broader public via media awareness

Project Sustainability

- Limited by barriers to collection efficiencies
- Incentivised by income for PET (up to R2/kg)
- Potential as a carbon of setting project

Barriers and Challenges

- PET recycling is not economic due to high mass to volume ratio
 - Requires networks, incentivisation, subsidies
 - Works optimally with kerbside recycling and centralised Material recovery facility (MRF)
- BUT community based recycling efforts are the trigger point for mass scale success!

Linkages and Policy Context

- Recycling is talked about as good to do..., this PET project was to take the first step
- Making links with Governments poverty alleviation policies and plans: work for the indigent, work at MRF facilities

Major contribution and lesson

- That poor air quality has linkages in how waste materials are handled informally
- That whole of society can be engaged in improving the environment and living more sustainably
- The notions of composting, recycling become **possibilities for action** thro the PET demonstration project.
- A step forward towards carbon neutral living.

Let's Protect the Environment "Let's be Good Ancestors" Thank You

