

A WASTE RDI ROADMAP FOR SOUTH AFRICA

The need for the development of a Waste RDI Roadmap and the legislation and policy background



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REPUBLIC OF SOUTH AFRICA

CSIR
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Outline of presentation

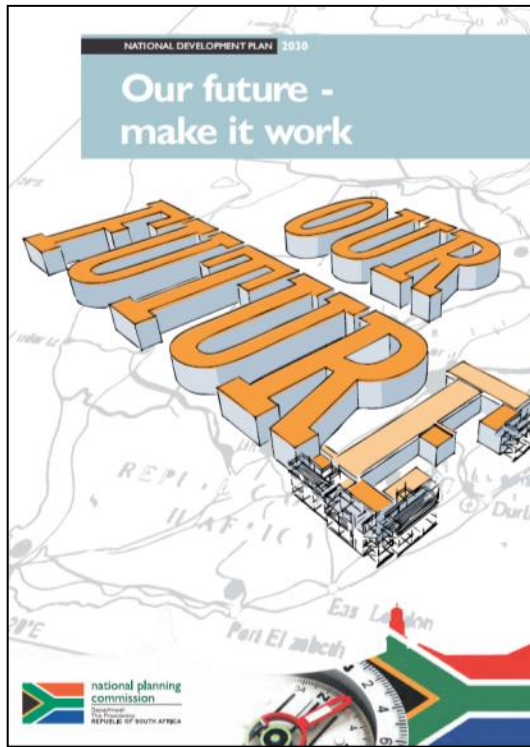
- Policy and Legislation
- The Reality
- The Department of Science and Technology
- The response to National Priorities – The Waste RDI Roadmap



POLICY AND LEGISLATION: OPPORTUNITIES FOR THE WASTE AND SECONDARY RESOURCES ECONOMY TO CONTRIBUTE TO ACHIEVING THE GOALS

National Development Plan

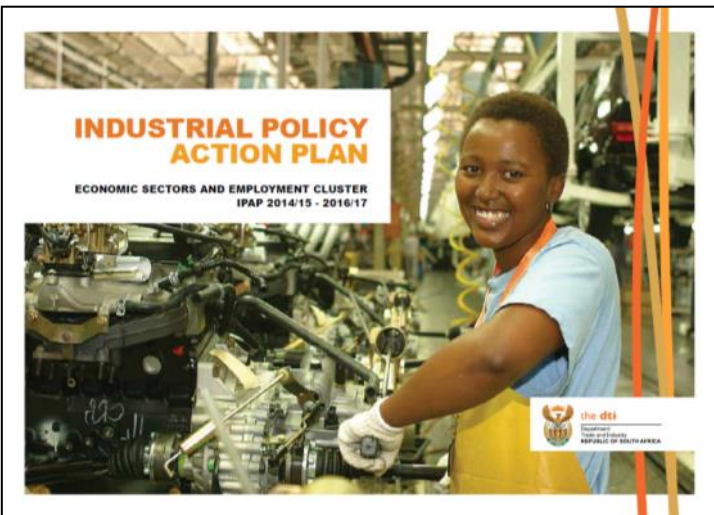
A long-term strategic plan that defines a desired target and identifies the role different sectors of society need to play in reaching that goal.



- Creating **jobs and livelihoods**
- Expanding infrastructure
- Transitioning **to a low-carbon economy**
- Transforming urban and rural spaces
- Improving **education, training and innovation**

Industrial Policy Action Plan

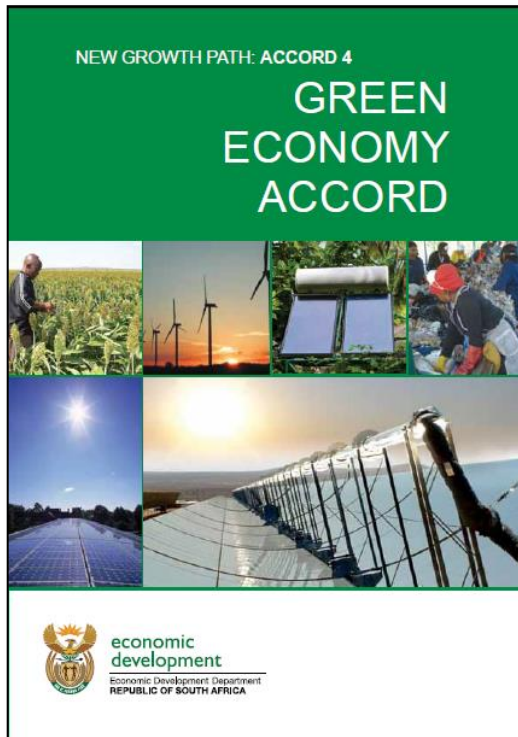
Outlines government initiatives to accelerate the industrialisation of the South African economy



- Contribute to direct and indirect **creation of decent jobs**
- Increase **value-addition**
- Improve competitiveness in both domestic and export markets

Green Economy Accord

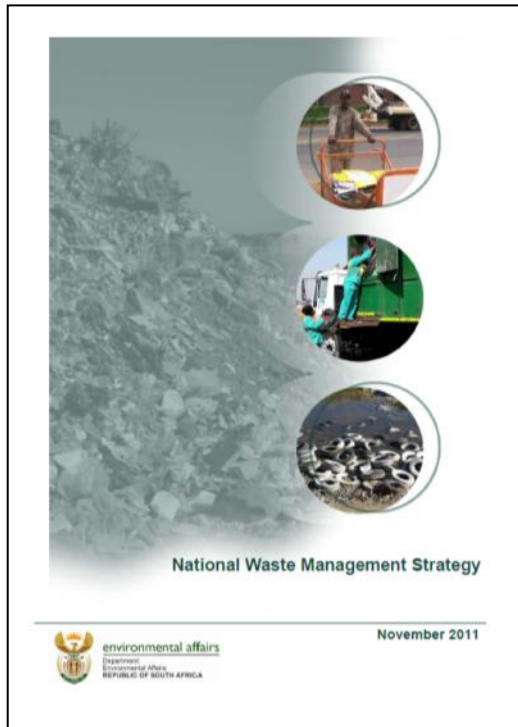
Agreement between government, business and labour, committing each to tangible targets in achieving low carbon economy



- Increasing **investments in the green economy**
- Procurement of renewable energy as part of the energy generation plan
- Promotion of biofuels for vehicles
- Promoting energy efficiency across the economy
- **Waste recycling**
- Economic development in the green economy through promotion of localisation, youth employment, **cooperatives** and **skills development**

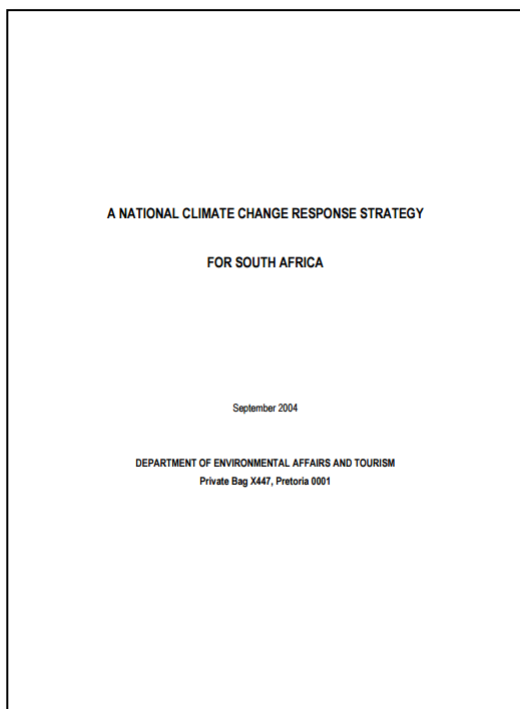
Waste Management Strategy

The purpose of the NWMS is to achieve the objects of the National Waste Act.-



- Promote **waste minimisation, re-use, recycling** and **recovery of waste**
- Ensure the effective and efficient **delivery of waste services**
- Grow the **contribution of the waste sector to the green economy**
- Ensure that people are aware of the impact of waste on their health, well-being and the environment
- Achieve integrated waste management planning
- Ensure sound budgeting and financial management for waste services
- Provide measures to remediate contaminated land

Addresses issues identified as priorities for dealing with climate change in the country-



- Mitigation actions with significant outcomes
- Sectoral responses
- **Informed decision-making and planning**
- **Technology research, development and innovation**
- Facilitated behaviour change



THE REALITY

The Situation



- South Africa has embraced the principles of the **waste hierarchy** in legislation
- But, it has been **slow to transition** up the waste hierarchy
 - South Africa landfills ~90% of all waste generated (2011)
 - A minimum of R17 billion worth of resources lost to the SA economy and a downstream manufacturing sector every year through disposal to landfill (2012)



THE DEPARTMENT OF SCIENCE AND TECHNOLOGY



- **Vision**

Increased well-being and prosperity through science, technology and innovation.

- **Mission**

To provide leadership, an enabling environment, and resources for science, technology and innovation in support of South Africa's development.

Global Change Grand Challenge

1 of 5 Strategic Area of Focus, with a particular focus on climate change



- B: Reducing the human footprint
 - Waste Minimisation Methods and Technologies
 - Doing More with Less
- D: Innovation for Sustainability



THE RESPONSE TO NATIONAL PRIORITIES – WASTE RDI ROADMAP

10 Year National Waste RDI Roadmap

Problem ————— Means ————— How ————— Opportunities

Problem Statement:


- 90% of South Africa's waste goes to landfill
- Resulting in **loss of resources** to the economy
- Resulting in social (human health) and environmental **impacts**
- Municipalities face **challenges** in delivering services and diverting waste from landfill
- Alternative waste treatment typically more **expensive** than landfilling

Human Capital Development (HCD)
(Skills)

Research and Development (R&D)
(Evidence)

Innovation (technological and non-technological)
(Technology)

 **Strategic Planning**

 **Modelling and Analytics**

 **Technology Solutions**

 **Waste Logistics Performance**

 **Waste and Environment**

 **Waste and Society**

Strengthen **skills** and generate **evidence** to **inform** decision-making, planning and policy development by government and industry

Strengthen **skills** in methods, tools, models and techniques and apply these to generate **evidence** to **inform** the management of waste

Develop, evaluate, demonstrate, localise and deploy **technologies** to **support** municipalities and industry in diverting waste away from landfill towards value-add

Strengthen **skills** and generate **evidence** to optimise decision-making around the movement of waste across the country (logistics, assets, resources)

Strengthen **skills**, generate **evidence**, **deploy technologies** to reduce the impacts of waste on receiving environments

Deepen understanding of the socio-economic opportunities provided by waste, but also the threats that waste poses to human health

Opportunities:

- Preventing waste creates opportunities for industry to increase **value-addition and competitiveness**
- Diverting waste from landfill creates opportunities for new direct and indirect **jobs and enterprises**
- Improved management of waste **reduces risks** to human health and environment

Key to the Roadmap's Implementation

- Strengthening **partnerships** –
 - DST entities (e.g. NRF, TIA)
 - National Government Departments (e.g. DEA, the dti, CoGTA)
 - Private sector (Business and Industry)
 - International RDI partners
- Increase public and private sector **collaboration** and **co-investment** in waste RDI
 - Leveraging co-investment in Waste RDI activities in the NSI
- **Planning** and managing **resources** –
 - With a focus on the 6 Clusters and 5 Priority Waste Streams
 - With a focus on the RDI objectives of the Roadmap

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Waste RDI Roadmap

Outlines the proposed interventions, progression paths and the related instruments, and the required RDI investment over time



Trends

Describes the local and global trends in waste management and approach adopted in arriving at the priority waste streams for the Roadmap



Capabilities

Maps the nature, availability and maturity of waste RDI capability and capacity in South Africa



Opportunities

Provides an overview of the Market Opportunities we see, how attractive they are and what is required to realise them