



National Cleaner Production Centre South Africa

Resource Efficiency & Gauteng Industrial Symbiosis Program

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National Cleaner Production Centre South Africa

PRESENTATION OUT LINE

- Who is NCPC
- Core Offerings
- Results Achieved to-date
- Benefits for Participating Companies
- Gauteng Industrial Symbiosis Program
- How it works
- Benefits
- Progress to-date



National Cleaner Production Centre South Africa

The National Cleaner Production Centre of South Africa (NCPC-SA) enhances South African industry's efforts to **improve competitiveness** and reduce its **environmental footprint** through the implementation of **resource efficiency and cleaner production (RECP)** methodologies.



www.ncpc.co.za



the dti
Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA





National Cleaner Production Centre South Africa

Programme of the Department of Trade and
Industry (**the dti**)

Hosted by the Council for Scientific and
Industrial Research (**CSIR**)



www.ncpc.co.za



CORE OFFERINGS...



CORE OFFERINGS

- **RECP Assessments**

Resource **E**fficiency and **C**leaner **P**roduction

- Identify areas for saving in **energy, water, input material** and **waste** through **in-plant assessments**
- Assessments offered **Free of Charge**

CORE OFFERINGS

- **Industry Energy Efficiency Project - IEE**
 - **Industrial Energy Efficiency Project in South Africa** implemented together with **UNIDO**
 - Energy assessments
 - Capacity building
 - **Energy Management Systems (EnMS) and Energy Systems Optimisation (ESO)** implementation




2010  2014

energy savings in **54 plants**

= 577 GWh

= R 344 million




GREEN SKILLS DEVELOPMENT

 **Training courses** in energy and resource efficiency at end-user and expert level

 Details and registration on www.ncpc.co.za

 **RECP awareness-raising** workshops for employees and stakeholders

INTERNSHIP PROGRAMME

-  **Engineering graduates** are placed in participating companies to evaluate and monitor **energy, water, material and waste** whilst being mentored by industry experts
-  Host companies enjoy direct benefit from having on-site individuals dedicated to identifying **resource and cost-saving opportunities**
-  Unemployed graduates receive training in scarce and critical green skills

Visit www.ncpc.co.za to apply to host an intern

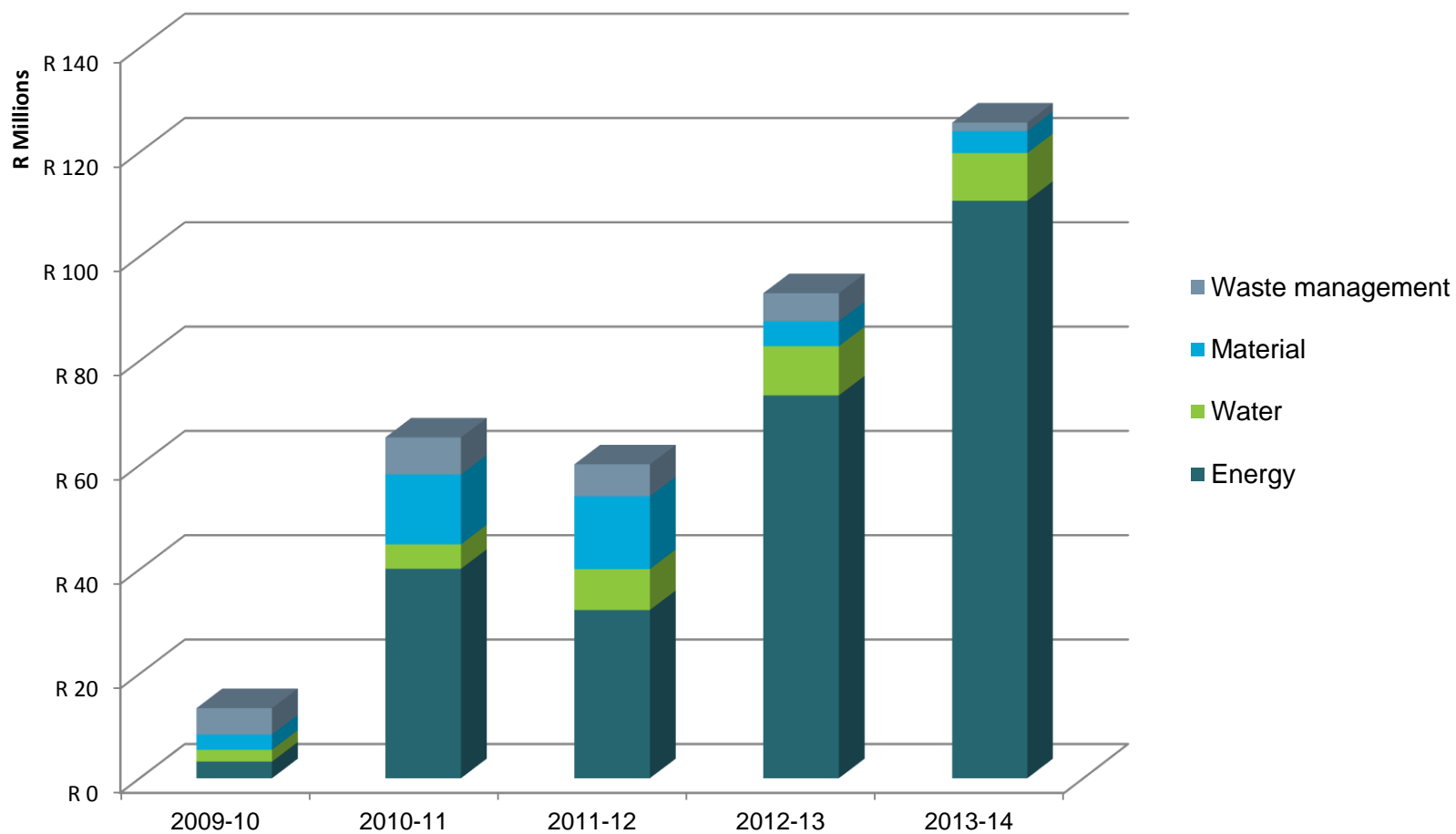


THE RESULTS...





Potential savings 2009 - 2014

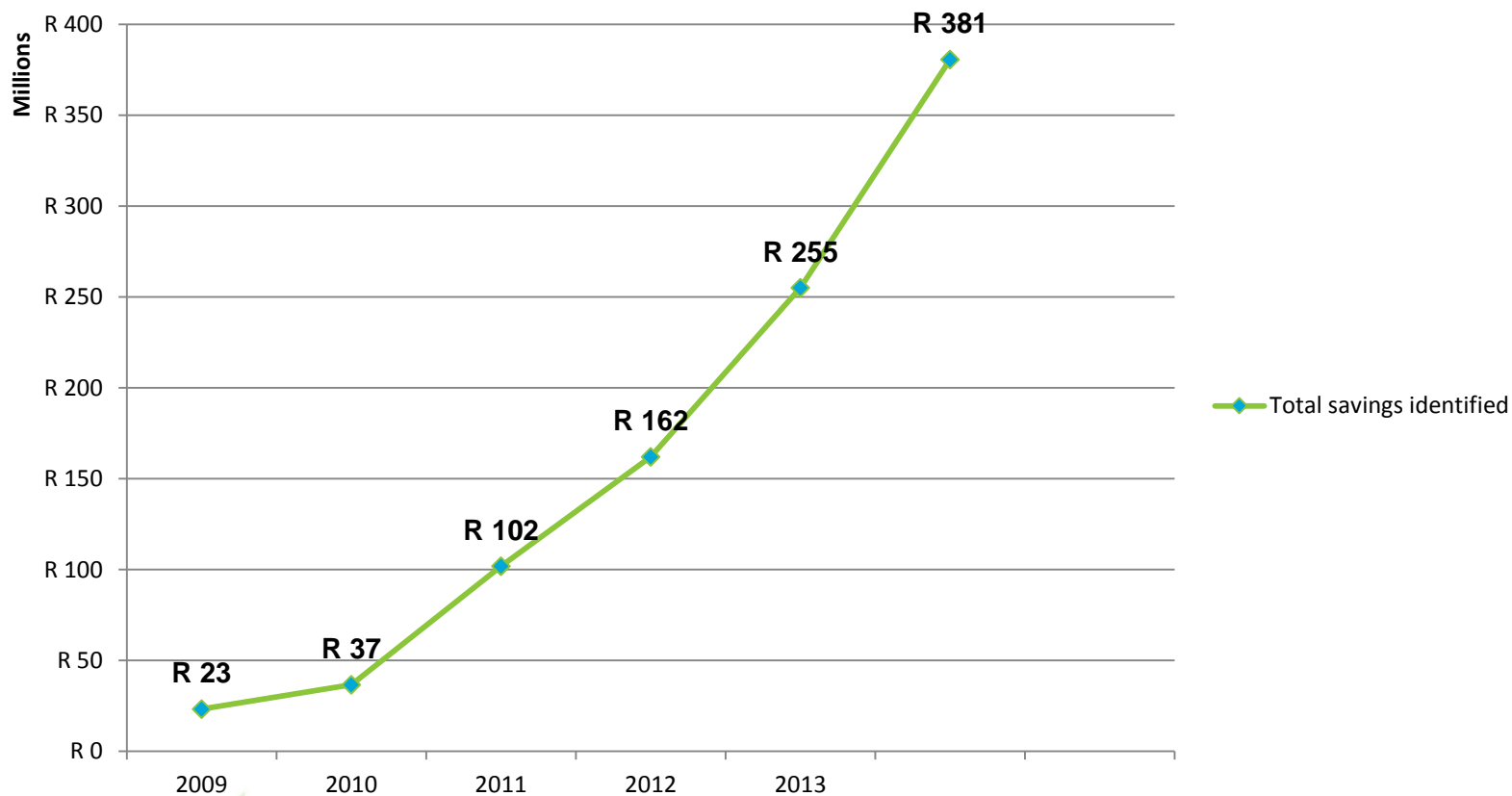




Potential savings 2009 - 2014

Total potential savings identified 2009 - 2014

R 380 764 678





ENERGY SAVINGS 2011 - 2014

- Energy Management Systems **implementation highlights:**
 - ArcelorMittal – **R89 million** saving in 2011, increased to **R171 million** by June 2013
 - Tenneco – two plants **ISO 50001 certified**. R 2 million energy savings p/a
 - Johnson Matthey – **R 7.7 million p/a** energy saving and ISO 50001 certification
 - King Shaka International Airport **R 2.7 million** saving, mostly in new **lighting** technologies
 - Polyoak Plastics – **R2.9 million** per annul (mostly electricity)
 - Distell wine and spirits – **R 0.9 million** p/a in electricity saving



What's in for my company?

- **Cost savings** through reduced wastage of energy, water and materials
- Improved **operating efficiency** of the plant
- Better **product quality** and consistency
- **Recovery** of some wasted materials (reuse)
- Improvement of the enterprise's **reputation**
- Better compliance with **environmental regulations**
- Cost savings on end-of-pipe **waste treatment**
- New and improved **market opportunities**



INDUSTYRIAL SYMBIOSIS ...





What is “Industrial Symbiosis”?

In biology: ‘An interaction between two different organisms living in close physical association to the advantage of both’

Concise Oxford Dictionary, 8th Edition





- **Industrial symbiosis** is a resource efficiency approach where **unused** or **residual resources** of one company is used by another
- **Resources:** **materials, energy, water, assets, logistics, expert knowledge**
- This typically results in mutual **Economic, Social and Environmental Benefits**



How does industrial symbiosis contribute to Vision Zero Waste

Conarc, Corex Slag
and Conarc dust



Foundry



Slag Pile



Road construction
aggregate



Quartz and Stone
Flooring



Granite, brick and
masonry



Facilitated Industrial Symbiosis

- **Programme in a nutshell.....**
- **is a free service** which connects companies so that;
 - **they can identify and realise business opportunities**
 - **enabled by using unused or residual resources**
 - **(materials, energy, water, assets, logistics, expertise)**

 **Connecting Industry – Creating Opportunity**





What Industrial Symbiosis Achieves?

**Profit
Sales
Jobs**

**New business
Utilisation of assets
Inward investment
Knowledge transfer
Innovation**

IS Increases

IS Reduces

**CO₂ emissions
Landfill costs
Use of virgin resources
Industrial water usage
Hazardous waste
Pollution
Transport
Risks
Costs**

Summary Report

GISP Business Opportunity Workshop
Emperors Palace-Kempton Park

18th November 2014



On this day, 32 companies participated in a unique GISP synergy workshop. Over 160 resources were discussed and 244 potential synergies were captured.

Using the idea of Industrial Symbiosis, delegates identified beneficial innovative partnerships from under-utilised resources.

GISP would like to thank all the speakers who gave insightful presentations. Special thanks to our stakeholders; The **dti**, DEA, GDARD, GDED, EDD-Ekurhuleni Metropolitan Municipality and City of Johannesburg.

Who was there?

Aganang gutter
 AGSM
 Ariel Energy Solutions cc
 Bamba Nani Trading
 Barloworld
 Bidvest
 Blackstone Consulting
 BMW SA
 Eco-Match
 General Motors SA
 Huhtamaki
 Implats
 Investech
 Lantic
 Lesedi Manufacturing
 Mpact Corrugated

NCP
 New Africa Biofuels
 PET Recycling Company
 Plastics SA
 PPC Cement
 Prasa
 Resource Innovations Africa
 SAPRO
 SEIFSA
 Sinkmaster
 Specialist Metal
 STTP
 Transnet
 Ulwazi Matiza
 University of Johannesburg

What did companies think GISP could achieve?

- Boost sales 4.8/5
- Reduce costs 4.4/5
- Stimulate innovation 4.8/5
- Promote learning 4.8/5
- Reduce CO₂ emissions 4.3/5

What did companies think about the GISP workshop?

- Meeting their expectations 4.5/5
- Networking opportunities 4.5/5



What next?

Check your matches – Company report available within a week of workshop

- ✓ Progress discussions
- ✓ Contact GISP for support
- ✓ Stay in touch!

The GISP team will be in touch shortly to see how it's going...

Get in touch with the GISP team!

012 841 2359 / 3413

gisp@csir.co.za

“ What did they say?

“I have become aware of companies operating in the same/related industry that I was not aware of “

*- Oscar Baruffa
 PETCO*

“Network and excellent insight into the progress being made in Gauteng regarding waste, recycling, etc.,”

*-Craig Allen
 ECO MATCH (Pty)*

“Realising the industries that are currently requiring some of my waste streams”

*- Kea Tihapane
 NCP*

”

Summary Report

GISP Business Opportunity Workshop
Riverside Resort – Vanderbiljpark

4 March 2015



During the day, 40 companies participated in a unique GISP synergy workshop. Over 223 resources were discussed and 590 potential synergies were captured.

Using the idea of Industrial Symbiosis, delegates identified beneficial innovative partnerships from under-utilised resources.

GISP would like thank all the speakers who gave insightful presentations. Special thanks to our stakeholders; The **dti**, DEA, GDARD, GDED and SGRIF.

Who was there?

4 Degrees
 AA Diamonds
 ABSA
 AJ Polycycling
 CHEP SA
 Clear Sky Energy
 Connect Me (Pty) Ltd
 CWI
 Dixon Batteries
 Earth Probiotic Recycling
 Solutions (Pty) Ltd
 Fiber & Plastic Technology
 Industrial Distillers & Refiners
 LEHALIMA
 Metso Minerals
 NCP Chlorchem
 NOVEAL SA
 North West University Vaal
 Plastic SA
 Prevail Engineering (Pty) Ltd
 RE-SA

Robor (Pty) Ltd
 SAIF
 Sakekamer
 Sakepos
 Sasol
 Sasol Enterprise and
 Supplier Development
 Selectra
 Shell
 Simbalism
 Splendid Creations
 Standard Bank
 The Innovation Hub Management
 Company
 Torch
 University of Johannesburg
 – Metal Casting Technology Station
 UPHAWU Metallurgical Services
 Vaal University of Technology
 XILO Technology

What did companies think GISP could achieve?

- Boost sales 4.5/5
- Reduce costs 4.6/5
- Stimulate innovation 4.6/5
- Promote learning 4.4/5
- Reduce CO₂ emissions 4.5/5

What did companies think about the GISP workshop?

- Meeting their expectations 4.6/5
- Networking opportunities 4.6/5



What next?

Check your matches – Company report available within a week of workshop

- ✓ Progress discussions
- ✓ Contact GISP for support
- ✓ Stay in touch!

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“ What did they say?

“This will be a fantastic opportunity to achieve numerous green economy objectives “

- Karien Erasmus
 Promethium Carbon

“Think that IS can generate vast opportunities in my business and open other opportunities,”

-Deena Moodley
 A J Polycycling

“Huge potential for new SMEs to develop and job creation”

- Basani Mametja
 ABSA Bank

”



- **Resources & Synergies Identified**

- **383 Resources Identified**

- **834 Potential Synergies captured**





Key Performance Indicator

Pilot Year (Nov '14 –Mar'15)

Waste Diversion

102.3 tonnes

Additional Revenue

R1.69 million

Cost Savings

1.32 million

Private Investment

R500 000

Fossil GHG Savings

2,456 tonnes CO₂e

Job Creation

3 temporary 0 new permanent



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THANK YOU FOR LISTENING

Visit our website

www.ncpc.co.za

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