



NCPC

NATIONAL CLEANER PRODUCTION CENTRE
— SOUTH AFRICA —



Industrial Symbiosis Programme

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the dti

Department:
Trade and Industry
REPUBLIC OF SOUTH AFRICA

CSIR
our future through science

Industrial Symbiosis Programme

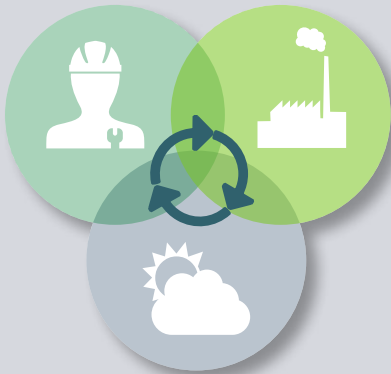
Connecting industry, creating opportunity

The National Cleaner Production Centre South Africa (NCPC-SA), as the national resource efficiency programme of The Department of Trade and Industry (**the dti**), is the custodian of the Gauteng and KwaZulu-Natal Industrial Symbiosis Programmes (GISP and KISP respectively).

A similar programme also operates in the Western Cape.

The Industrial Symbiosis (IS) Programme is a free facilitation service which uses the internationally proven industrial symbiosis approach to enhance business profitability and sustainability.

What is industrial symbiosis?



Industrial symbiosis is a resource efficient approach where unused or residual resources (material, energy, water, waste, assets, logistics, expertise etc.) of one company are used by another. This results in mutual economic, social and environmental benefits.

Industrial Symbiosis is defined as: "...the practice of **bringing together** companies from different sectors to **identify business opportunities** that **keep resources** in the economy in a **perpetual productive cycle** that **avoids waste** – in other words, **the circular economy in action**.

According to: International Synergies Ltd, industrial symbiosis implementation specialists.

www.international-synergies.com

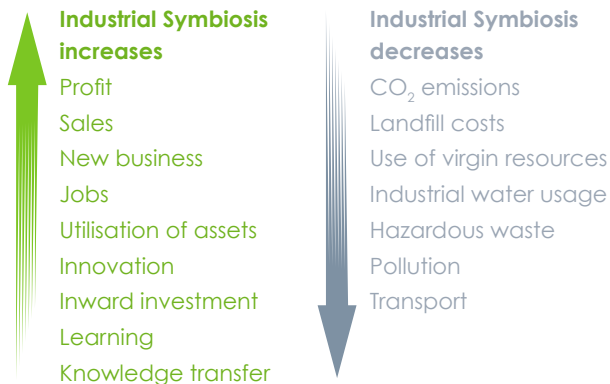


How does the IS Programme work?

The IS Programme uses a facilitation approach to match the under- or unutilised resources of member companies with other member companies who can use the waste to create new business opportunities. The IS Programme is one of the fully subsidised services of the NCPC-SA, membership is free of charge.

One of the tools used by the IS Programme is Business Opportunity Workshops. At these events, the IS Programme team facilitate interactive sessions that allow participants to exchange details about resources companies have on-site or resources companies need that others may have.

Industrial Symbiosis in action



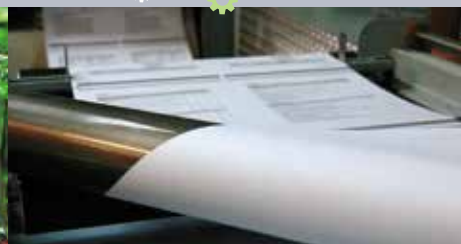
Gauteng and KwaZulu-Natal cumulative highlights 2014 – 2017

Businesses Assisted	46
Cost Savings	R1 422 800
GHG Emissions	70 390 tonnes CO ₂ e
Industrial water saved	48 643 m ³
New / contract jobs created	6
Virgin resources use reduction	200 233 tonnes
Waste diversion from landfill	200 233 tonnes

The IS Programme database now has 2 558 resources registered from 243 companies, primarily in Gauteng and KwaZulu-Natal.

Joining one of the IS programmes (GISP, KISP or WISP) or attending an industrial symbiosis workshop can help a company:

- **Save money** on raw materials
- Explore **new innovations** for wasted or difficult resources
- Generate **new business opportunities**
- **Reduce** their **carbon footprint** and **improve** their **environmental performance**



National Industrial Symbiosis Initiatives

GISP is jointly funded and delivered by the NCPC-SA, Gauteng Province Agriculture and Rural Development (GDARD) and the Gauteng Department of Economic Development (GDED) in collaboration with Ekurhuleni Municipality Waste Management Services.

KISP is jointly funded and delivered by the NCPC-SA, Trade and Investment KwaZulu-Natal and the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs.

The Western Cape Industrial Symbiosis Programme (WISP) is funded by the Western Cape Government Department of Economic Development and Tourism and delivered by GreenCape, a sector development agency for the green economy.

Industrial Symbiosis Internationally

Industrial Symbiosis has made extraordinary contributions to businesses, economies and environmental efforts worldwide. The IS Programme model is based on the United Kingdom National Industrial Symbiosis Programme (NISP), established in 2005 and utilises the UK's expertise and support in its early development phase.

In eight years, NISP was able to help UK companies:

- **divert 47 million tonnes** of industrial waste from landfill
- generate **£1 billion** in new sales
- **reduce carbon emissions** by **42 million tonnes**
- **cut costs** by **£1 billion** by reducing disposal, storage, transport and purchasing costs
- **reuse 1.8 million tonnes** of hazardous waste
- create and safeguard over **10 000 jobs**
- save **60 million tonnes** of virgin material
- save **73 million tonnes** of industrial water



Benefits of being a IS Programme Member

Increasing profits

Achieved through identifying business opportunities and better management of resources.

Diverse Networking

Bringing together a broad range of industries, sectors and skills.

Universal – Transportation and Water

IS Programme is not limited to any particular type of resource – it includes energy, expertise, logistics, services, assets, transportation, waste and water.

Demand Driven

IS Programme is driven by the demands of its member companies.

We All Win

Synergies developed through IS Programme benefit the economy, environment and society as a whole – sustainability in action.

Free Membership

Membership to GISP, KISP and WISP is free for all companies and organisations, regardless of sector, size or turnover. Membership also gives you access to all IS Programmes throughout South Africa.



Case Study



Image courtesy of:
Dr Linda Godfrey

NCPC-SA Industrial Symbiosis Programme Highlights

SUMMARY OF INTERVENTION – 2016

Company with material waste:	Southern Sun Silverstar Casino
Company that needs waste material:	Bokashi Bran (Pty) Ltd
Waste stream:	Food waste

Southern Sun Silverstar Casino staff canteen feeds 1 450 employees and has 12 food outlet tenants. The casino was sending approximately 47 tonnes of inedible food per month to landfill sites. Untreated food waste rots and generates methane gas and leachates that is detrimental to the environment.

SAVINGS



Waste diverted from landfill: **980 tonnes**



Industrial water saving: **36 260 m³**



GHG emission reduction (CO₂): **2 379 tonnes**



Jobs created: **1 permanent position**



Interesting fact: **No investment**



Case Study





Group Five generates over 200 tons of oil contaminated drums per year in their operations processes. High disposal costs and a need to find alternative environmentally friendly and economic ways to dispose of the drums created an opportunity, through the Gauteng Industrial Symbiosis Programme, for Group Five Structured Ingenuity (Pty) Ltd and KLM Drums (Pty) Ltd.

SUMMARY OF INTERVENTION – 2015

Company with material waste:	Group Five Structured Ingenuity (Pty) Ltd
Company that needs waste material:	KLM Drums (Pty) Ltd
Waste stream:	Drums

SAVINGS

	Waste diverted from landfill:	180 tonnes
	Industrial water saving:	4 488 m³
	GHG emission reduction (CO ₂):	307 tonnes
	Virgin resource use reduction:	180 tonnes

Connecting Industry.
Creating Opportunity.





National Cleaner Production Centre of South Africa

IS Programmes Contact Details

Gauteng Industrial Symbiosis Programme (GISP)

Email: gisp@csir.co.za

KwaZulu-Natal Industrial Symbiosis Programme (KISP)

Email: kisp@csir.co.za

General enquiries

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IS Programme delivered in partnership with:

