

INTERNATIONAL BEST PRACTICE FACTSHEETS ON POLICY INSTRUMENTS THAT PROMOTE ENABLING ENVIRONMENTS FOR GREEN AND CIRCULAR BUSINESSES

Western Cape Industrial Symbiosis Program

SOUTH AFRICA_

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BEST PRACTICE FACTSHEET

The global unsustainable use of resources has caused widespread environmental degradation. Driven by environmental concerns, but also cost benefits, many companies are pursuing improved resource-efficiency and waste prevention. This is a challenge for many companies, especially for small and medium-sized enterprises (SMEs).

In this context, the Western Cape Government launched the Western Cape Industrial Symbiosis Program (WISP) to encourage resource efficiency practices among local companies.

WISP is a free facilitation service that uses an Industrial Symbiosis approach to enhance business profitability and sustainability. The program was initiated by the Western Cape Government of South Africa in April 2013 and it is delivered by [GreenCape](#). WISP represents one of the most important initiatives that aims to turn Western Cape into a circular economy hub in South Africa and Africa.

OBJECTIVES



The main objective of The Western Cape Industrial Symbiosis Program (WISP) is to **develop mutually profitable links between companies from all industrial sectors**, by identifying unused/underutilized resources (materials, energy, water, assets, logistics, expertise) from one company that could be recovered, reprocessed and re-used by others.

By sharing resources, the member companies of WISP are able to cut costs and increase profit, improve their business processes, create new revenue streams, learn from each other and operate more sustainably.

WISP operates in different industries and with businesses of different sizes, which means that the program has the potential to generate significant economic, environmental and social benefits from the business synergies and projects that are created.

BACKGROUND



Industrial Symbiosis is a circular strategy in which underutilised, residual streams (by-products or waste) from one company (usually a manufacturer) are used by another, often within another sector.

By promoting resource-efficiency, clean technologies and closing material loops within industries, waste is turned into a resource. These resource exchanges or “synergies” reduce the amount of waste that is generated within industries and create opportunities for materials to be recovered or reprocessed into new products. This results in mutual economic, environmental and sometimes even social benefits for the companies involved (Paquin et al. 2009¹).

Some industrial symbiosis initiatives are self-organised (only involving private companies and bilateral collaborations), but there are also many initiatives that are facilitated by public authorities or other types of moderators. In this case a third party, the facilitator, assists in the identification and implementation of mutually beneficial synergies for member businesses, which might lack time or expertise to identify and implement resource efficiency practices. WISP is based on the highly successful [National Industrial Symbiosis Program \(NISIP\)](#) in the UK, that has to date been replicated in 20 countries world-wide at a national or regional level.

¹ Paquin, R. and Howard-Grenville, J., 2009. Facilitating regional industrial symbiosis: network growth in the UK's national industrial symbiosis program. In: F. Boons & J. Howard-Grenville, eds. London: Edward Elgar Publishing, pp. 103-127.

IMPLEMENTATION



The Western Cape Industrial Symbiosis Program (WISP) is funded by the Western Cape Government (WCG) Green Economy initiative, and delivered by [GreenCape](#), a Sector Development Agency for the Green Economy established by the WCG in 2010, and with the support of [International Synergies Limited](#).

Participation for member companies is free regardless of sector, size or turnover (total sales). WISP collaborates with leading trade associations, manufacturers and other organizations such as the Cape Chamber of Commerce and Industry ([CCOC](#)), National Cleaner Production Centre ([NCPC](#)), Economic Development Partnership ([EDP](#)) and the City of Cape Town ([CoCT](#)).

The program has a team of facilitators that work full time to build the industrial symbiosis network, identifying under-utilised resources that could lead to business opportunities or synergies for member companies. Such synergies are identified during the so-called “Business Opportunity Workshops”, or individual company meetings, company site visits, as well as at industry events gathering all partners of WISP. Facilitators capture data and insights from these business meetings in a secure online database, SYNERGie™ where potential matches between businesses in the network are identified.

After that, the program facilitates the engagement and resource exchange between matched businesses and requests the companies to provide a feedback on the financial, social and environmental benefits of the match. The government provides provincial and local staff who are responsible for waste management and economic development, to serve on the steering committee, providing strategic direction and practical assistance to enable WISP to have maximum impact.

RESULTS



The Western Cape Industrial Symbiosis Program currently counts 156 companies in its network. WISP facilitated synergies in different industries such as textiles, food, manufacturing and electronics.

The program contributed to increase the profitability and environmental performance of individual businesses, and it generated economic growth through job creation and development of small businesses.

WISP also reduced the carbon intensity of production processes and improved resource-efficiency within production processes.

The cumulative impact of WISP over the last six years:

- 36,600 tonnes of waste diverted from landfill.
- 147,700 fossil greenhouse gas emissions saved (equivalent to the electrical usage of 39,800 households in South Africa).
- R679 million (South African Rand) generated in financial benefits (additional revenue, cost savings and private investments).
- 143 jobs created in the economy (25 directly in member companies)

EFFECTS ON THE INDUSTRIAL SYMBIOSIS



Figure 1 From National Cleaner Production Center (NCPC). Industrial Symbiosis Programme:

SUCCESS FACTORS



By facilitating industrial symbiosis, WISP has helped achieve the carbon and resource-efficiency targets of national and Western Cape policies. The factors that contributed to the success of WISP include the policy drive for an improved industrial waste management system, the need to divert waste from landfills and the urgency for job creation. Furthermore, the national government facilitated industrial symbiosis practices by improving the waste legislation through regulatory acts and strategies (see table 2)².

The success of the program is also due to the large and diverse network of participating companies as well as high-level stakeholder buy-in providing public support and assistance recruiting new members to the network. The involvement of [International Synergies](#), which has experience in developing industrial symbiosis networks around the world, has been key to WISP's success supporting the development and implementation of the program.

After the successful pilot of WISP, the program is used as the foundation for the development of a national industrial symbiosis programme in South Africa, resulting in the development of similar programs in KwaZulu Natal and Gauteng. The success of the program has also been attributed to GreenCape itself which has an established reputation in working to develop the green economy in the Western Cape.

² Table 2: Summary of the acts and strategies that support the application of industrial symbiosis in the Western Cape

³ Green Cape

CONSIDERATIONS FOR THE MEDITERRANEAN



The facilitated industrial symbiosis model of WISP can be replicated by other countries to achieve innovative waste management practices and reduce industrial and commercial waste, resulting in various economic and environmental benefits. Inspiration can be obtained from the concrete case studies on its website³.

During the implementation of WISP, several barriers and challenges have been identified that can limit the program's ability to reach its full potential. These challenges include: a complex regulatory framework, especially regarding the reuse/recycling of waste materials; high cost of transport and logistics services; low interest for the use of secondary and/or alternative materials; challenging and lengthy enterprise development process; limited willingness for additional capital investments; and lack of proven (market-ready) solutions for waste composite materials, organics, textiles and wood. These challenges have to be addressed through public-private collaboration to ensure success.

The industrial facilitator has a very critical role to motivate companies, help them explore and implement synergies. During the pilot year of the implementation of the program, it is recommended to focus the facilitation services on the member companies

with the highest level of commitment to the program, in order to maximise the potential for synergies and resource exchanges.

MORE INFO

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This publication was produced with the financial support of the European Union. Its contents are the sole responsibility of SCP/RAC and do not necessarily reflect the views of the European Union.



Funded by the European Union