

Solving Solvent Recycling



WISP worked with Dekro Paints and Protea Chemicals to help divert 4 tonnes of expired solvents from going to landfill in a once-off exchange.

The Organisations

Protea Chemicals and Dekro Paints

The Challenge

Health and safety are the biggest concerns when it comes to the storage and disposal of solvents, as most solvents are classified as flammable and hazardous. There is always a risk of environmental contamination as well as health risks associated with exposure to solvents, due to their toxicity and reactive nature. The need for proper handling and disposal of these materials is crucial.

From time to time, **Protea Chemicals** has chemicals that are contaminated, about to expire/have expired or have been degraded through poor packaging or improper storage. These chemicals cannot be sold or used for their intended purpose, and if no off-taker is found, are sent to landfill. Protea Chemicals had been storing a mixed range of solvents (ketones and alcohols) in 200 litre drums at its site. In accordance with regulations, wastes going to landfill must be characterised to ensure that waste management operators fully understand the nature of the wastes they receive. The sampling and testing conducted to ensure wastes are properly characterised can be a costly venture for chemical companies, especially when there is a range of chemicals to be tested.

Dekro Paints' chemicals distribution and procurement division, operating as Chemical & Solvent Trading, has set up a solvent recycling plant. This plant has the capacity to recycle a wide range of hydrocarbons from aromatics, oils and various other solvents used in industry. The recycling plant is operating below capacity and Dekro is actively looking to source dirty solvents from industry. The dirty solvents undergo processing, including

filtration, decanting and distillation and are cleaned to a purity of higher than 99%. The cleaned solvents are used by Dekro Paints or sold to companies that manufacture virgin solvents. Dekro also has the capacity to sample and test chemicals.

The Solution

WISP met Dekro at Africa Waste Week in August 2015. This was followed by a visit to the Dekro plant, where Dekro explained its business and what it was looking for. Having previously met Protea Chemicals, WISP was aware of Protea's chemicals that could potentially be used by Dekro. The two companies were introduced by a facilitator. After discussions, Dekro took chemical samples for testing, and 18 drums ($\approx 4\ 000$ L) of various dirty solvents were allocated to Dekro for recycling. This was a once-off exchange, which can be repeated whenever Protea Chemicals has expired solvents.

The Benefits

ECONOMIC BENEFITS



- Savings of R127 000 for Protea Chemicals in testing and characterisation costs.
- A saving of R8 000 in transportation costs and landfill gate fees.

ENVIRONMENTAL BENEFITS



- A total of 4 tonnes of solvents diverted from hazardous landfill.
- A saving of 19.4 tonnes in carbon dioxide equivalent (CO₂e).
- The recycling and reuse of solvents means a reduction in the use of virgin material.



WISP

Western Cape Industrial Symbiosis Programme

Delivered by GreenCape

Connecting Industry Creating Opportunity

About WISP

The Western Cape Industrial Symbiosis Programme (WISP) develops mutually profitable links between companies from all industrial sectors, so that under-utilised resources such as energy and water, and/or materials from one company can be recovered, reprocessed and re-used by others.

Driven by Business

The programme uses actual business opportunities as the mechanism for encouraging resource efficiency. Its holistic approach sees it actively dealing with ALL resources including water, energy, materials, logistics, assets and expertise. The programme is based on the highly successful national programme in the UK (NISP), which demonstrated that industrial symbiosis has the potential to significantly reduce industrial and commercial waste and comprehensively lessen the adverse environmental impacts of business.

Free Membership

WISP is a free facilitation service initiated by the Western Cape Government and delivered by the sector development agency GreenCape. WISP enables synergies to happen by filling the gaps that its members, especially SMEs, could experience due to the lack of time or dedicated expertise needed to identify and implement resource, waste and energy efficient practices. The diversity of the industries in which WISP operates, and the variety and size of its business members, means that WISP has the potential to generate significant economic, environmental and social benefits from the synergies and projects that it brings about.

Partnership with Purpose

WISP works hand in hand with leading trade associations, manufacturers and other organisations to add real value to business. We are working in collaboration with the Cape Chamber of Commerce and Industry (CCOC), National Cleaner Production Centre (NCPC), Economic Development Partnership (EDP) and the City of Cape Town.

Contact us to become a member and get involved!

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WISP is delivered by

GreenCape

GreenCape was established to promote the development of the green economy in the the Western Cape Province. We assist viable green businesses and potential investors in the green economy to remove barriers to their establishment and growth. Our aim is to help unlock the investment and employment potential of green business,

technologies and manufacturing and put the province on course to become the green economy hub for Sub-Saharan Africa. This work, in turn, contributes to improving the resource efficiency, carbon intensity and resilience of the regional economy.

WISP is funded by:



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