

# Apples to Apples



**WISP worked with Elgin Fruit Juice and Cape Town Market, diverting 1 400 tonnes of organic waste from landfill each year, saving R550 000 per annum and creating two permanent jobs.**

## The Organisations

Cape Town Market, Elgin Fruit Juice and Ywaste

## The Challenge

Organic material in the form of food waste almost always finds its way to landfill. There it decomposes, creating methane, which contributes to global warming. However, methane can be used to create energy — and energy generation using food waste is becoming more viable with better food-waste processing technologies entering the Western Cape market.

**Cape Town Market** is one of the oldest and largest fresh produce markets in South Africa. In recent years, it has managed to divert 85% of all its food waste away from landfill. It has also implemented a composting operation on its site, operated by an independent company. Excess 'condemned' food waste — unsuitable for human consumption — is converted into biogas by a company in Grabouw.

**Elgin Fruit Juice** requires food waste to operate its anaerobic digester in Grabouw. An anaerobic digester generates biogas and digestate (leftover organic material). The biogas is burned in an engine to create electricity, while the digestate, which has a high nutrient and carbon content, can be used as compost or fertiliser. Elgin Fruit Juice requires a constant stream of carbon-rich organic material in the form of food waste to feed its anaerobic digester and produce consistently good-quality biogas.

**Ywaste** is a food waste management organisation with a composting facility that operates on Cape Town Market's premises. The company produces compost from fruit and vegetables supplied by Cape Town Market. Compost often requires a carbon-based additive to provide energy for the microorganisms breaking down the organic material. Cape Town Market and Elgin Fruit Juice were introduced at one of WISP's Business Opportunities

Workshops, where they shared valuable information about their underutilised resource streams within their respective businesses.

## The Solution

Elgin Fruit Juice's anaerobic digester is an innovative solution for high-volume food waste, as it requires 100 tonnes of material per day to consistently produce 528 kWh of electricity. Elgin Fruit Juice collects approximately 21 tonnes of fruit and vegetable waste per week from Cape Town Market to supplement its feedstock. Cape Town Market is thus potentially saving R550 000 each year in landfill gate fees, as its waste is being diverted to an anaerobic digester.

Ywaste identified that the digestate produced by Elgin Fruit Juice's anaerobic digester is an excellent substance with which it can work. So began the reverse-logistics operation of transporting this digestate back to Cape Town Market on Elgin Fruit Juice's empty truck. The digestate is mixed with the fruit and vegetable waste from Cape Town Market to create compost, which is then sent back to farmers — creating a 'closed loop' - from apples, to apples.

## The Benefits

### ECONOMIC BENEFITS



- An annual saving of R550 000 by Cape Town Market on waste services.

### ENVIRONMENTAL BENEFITS



- A total of 1 400 tonnes of organic waste diverted from landfill annually — equivalent in size to half an Olympic swimming pool.
- A saving of 1 000 tonnes of fossil greenhouse gases, equivalent to the electricity use of 270 households.

### SOCIAL BENEFITS



- Two permanent jobs created.



# 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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