Pictured above ia a Talbot & Talbot anaerobic digestor.

Biogas - **a new generation of power supply**

South Africa may soon have to begin using food sources to produce energy but, recently, it has been shown that other viable alternative opportunities do exist. It is possible for manufacturers to start producing power from their waste material, and to realise the associated environmental and financial benefits whilst doing so.

Biogas production uses strictly waste products, and is able to overcome a fluctuating quality of raw material with relative ease. On-site anaerobic digestion of industrial wastewater to produce methane may hold the key to the immediate safeguarding of power supply for many industries, and will not diminish edible crops, particularly important in a world where food availability and prices are of huge concern.

Power from effluent

This creation of power from organically rich effluent has become a successful reality, and is being applied by an increasing number of food and beverage manufacturers worldwide. The benefits of waste digestion are multifaceted, and follow a process that presents no side-effects. Grahame Thompson, Business Development Manager for Talbot & Talbot's Green Energy division, encourages any manufacturer, who has either a by-product or produces wastewater with a high COD (Chemical Oxygen Demand), to seriously consider investing in Green Energy projects. Talbot Green Energy creates financial opportunities for industries to produce their own power from effluent, and can better enable companies to meet mandated electricity quota systems. Although lagging behind developed countries in the implementation of Green Energy projects, South Africa holds immense potential for prospective projects as biogas production from South Africa's agricultural and industrial sectors is currently largely unharnessed.

The technology involved in anaerobic digestion has made spectacular advances over the past few years, particularly in the field of solid and liquid/solid mixtures, and gains real value when the biogas recovered possesses strategic value to the waste generator. By producing a substantial percentage of its own energy requirement, industry is in a unique position to mitigate the negative effects of power outages and power capping. The fact that this is achieved through the use of green energy, and usually in a cost-positive investment environment, makes anaerobic digestion an appealing solution.

Performance guaranteed

Talbot & Talbot is partners with an international company, Global Water Engineering, who have installed 421 Anaerobic Digesters worldwide. These digesters collectively treat 4 200 000 kg of COD per day, producing approximately 480 MW of power. This is approximately 27% the power capacity of the only commercial nuclear power station in Africa (Koeberg, north of Cape Town). If converted to coal, the equivalent would amount to 1627 tons per day – and in the case of diesel, a daily production of 1,2 million litres per day.

In South Africa alone, Talbot & Talbot have installed four anaerobic digesters in the food and beverage industry, one of which harvests the biogas generated as a fuel source for replacement of fossil fuel. This creates enough methane to produce 10%-11% of the production process' total energy requirement. A frequently overlooked benefit of biogas production from effluent is the added benefit of purification, typically reducing the COD by 80% to 90%. This reduction can often lead to substantial investment payback through reduced effluent discharge tariffs.

With the growing drive towards sustainability and reducing environmental footprints, the benefits to businesses of redirecting their waste into reusable energy offers a viable value-adding proposition – a winning enhancement for any corporate's triple bottom line.

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