



Terragen is a power producer that supplies electricity to the Central Electricity Board (CEB), as well as electricity and steam to Terra's sugar mill, through our 2 x 35 MW thermal power plant. Operating in a joint venture partnership with French company Albioma, we generate electricity and steam by burning bagasse and cane trash during the crop season (from July to December), and imported coal from South Africa during the intercrop season.

Our business model

Ensuring a regular and reliable supply of electricity to the CEB and our partner, Terra's sugar mill, is at the heart of our business model. Delivering on our customer value proposition requires that our energy is available on demand; we strive to respond as quickly and efficiently as possible to calls for production from the CEB, and to maintain a reliable supply by avoiding any breakdown incidents, and minimising disruption to our clients from any incidents that might occur.

With our plant currently working close to its peak capacity, our opportunities for revenue generation derive primarily through optimising the efficiency of Terra's sugar mill. This reduces their share of energy usage and releases further capacity for sale to the CEB network.

As part of our commitment to driving renewable energy in Mauritius and to decarbonise our energy inputs, we are continually looking for opportunities to substitute coal with biomass as a raw material input. We are also maintaining a strong focus on identifying opportunities to reduce dust and particulate emissions.

CAPITAL	MATERIAL INPUTS (2017)	MATERIAL OUTCOMES (2017)
People 	49 employees with the appropriate technical skills and motivation	Zero fatality Injury rate: 9.6 Lost day rate: 0.4
Manufactured 	One generation plant of 450 GWh capacity Two units of 35MW operating on three types of fuel: Coal, bagasse, trash	427.5 GWh sold, constituting 16% of the national energy mix MUR 124.0 million invested in plant and equipment
Natural 	188,892 tonnes of coal 294,793 tonnes of bagasse 7,526 sugarcane of trash 1.7 million m ³ of water consumed	437,089 tonnes of CO ₂ (coal) 247,877 tonnes of biogenic CO ₂ (bagasse) 11,156 tonnes of biogenic CO ₂ (sugar cane trash) Zero environmental emergency situations
Social 	Our business model depends on maintaining quality relationships with key stakeholders including: CEB, Terra Milling, regulatory authorities, small-scale planters and suppliers	Employee turnover rate: zero MUR 37.0 million payment in taxes MUR 4.7 million of CSR contribution
Intellectual 	First Mauritian firm to be granted an AFNOR certified integrated management system certificate based ISO 9001, ISO 14001 and ILO OSH 2001	Availability on CEB network 95.6% Reliability: one plant trip Specific coal consumption: 598g/kWh
Financial 	Coal purchase: MUR 750.7 million Maintenance cost: MUR 72.7 million	Turnover: MUR 1,340.0 million (18.8% increase) Profit: MUR 236.6 million (7.6% increase)

MATERIAL ISSUE IMPACTING VALUE CREATION	OUR RESPONSE
Dependency on a primary client – Being primarily dependent on a single external client, it is critical to maintain a strong relationship based on mutually beneficial outcomes.	We continue to invest in maintaining our ability to provide a regular and reliable supply of energy. This has been another positive year, with record availability levels and competitive pricing.
Potential changes to environmental regulation – Changes in environmental regulation could have a significant potential impact on our existing business model requiring substantial investment in new equipment and possible changes to current processes.	We engage regularly with relevant authorities to identify potential regulatory changes and ensure that appropriate measures are taken. We are identifying opportunities to minimise our emissions and to reduce the use of coal by increasing the use of sugarcane trash in the energy mix.
Unplanned disruption to generation or transmission activities – Unplanned outages, associated for example with a fire, mechanical breakdown or cyclone activity, could negatively impact the ability to deliver energy.	We have a preventative maintenance programme and clear risk management processes and response measures in place. We are currently investing in a new fire pumping station and new fire network.

Our 2017 performance

Strong financial returns underpinned by excellent operational performance

This was another good year for Terragen, characterised by 95.6% availability, as well as further improvements in operational efficiency. Our profitability this year was MUR 236.6 million, up from MUR 219.8 million in 2016. The plant had a good production of 427.5 GWh of electricity, close to the plant's peak capacity of 450 GWh. We invested an additional MUR 40.0 million this year to further enhance operational efficiencies in Terra's sugar mill, resulting in valuable revenue gains as well as improved environmental performance, particularly in terms of enhanced energy efficiency. This has offset the combustion of 1,700 tonnes of coal.

Seeking to decarbonise our energy mix

We have continued to make some progress in our commitment to increase the use of renewable resources for electricity generation, by realising opportunities for using cane trash as biomass input for electricity production. We are working collaboratively with Terragri's field teams to increase the collection, compacting and transportation of cane trash, and have further improved our production systems and processes for managing this alternative raw material input. This year we generated 7.5 MW using 7,526 tonnes of cane trash, up from 4.3 MW and 4,345 tonnes in 2016. We believe that this project offers a significant opportunity to improve the greening of energy generation in Mauritius, potentially reduce coal consumption and imports by around 15,000 tonnes. Its longer-term success is contingent, however, on the effective participation of small planters, as well as reaching agreement on an appropriate cost and price structure.

We made further progress this year with our carbon burnout project, a joint-venture between Terragen and Omnicane that is aimed at collecting ash, a by-product of coal combustion, and passing this through a re-burning process that will be transforming this into raw material for the production of cement. Through this process we can reduce the carbon content from around 20% to less than 5%.

We are pleased to report that we had another good year in terms of health, safety and environmental performance, with a productive collaboration between employees and external service providers in ensuring compliance with the health and safety rules and procedures. No serious injuries have been registered since January 2017. The injury rate and lost day rate for Terragen, and their external service providers, has been decreasing during 2017.

On the environmental front, corrective actions were taken according to legionella protocol when a contamination by this bacteria in the cooling towers was detected by the ATP-metry method, which allows identification and monitoring of the critical control points in water. Terragen pays particular attention to neighbouring residents regarding any potential environmental issues, and maintains good communication with them. Emergency response to chemical spillage was improved by installing two gate valves so as to contain the spilled products. We also relocated our diesel tank in compliance with regulations. All hazardous wastes are also well managed and appropriately disposed of at a waste storage facility at La Chaumière.

Our strategic outlook

Our strategic focus is to continue maintaining our availability and reliability and improve our efficiency. We will consolidate the uptake of cane trash as a renewable energy input in 2018. We will further invest and increase the consumption of trash if we obtain an appropriate remuneration on kWh/trash.

As part of long-term preventative maintenance measures, we will be investing in revamping our turbine control system. We will also be making further investments to ensure the integrity of our site, further reduce coal dust emissions, and install a new fire pumping station and fire network, supported by additional fire detection and protection measures.

Performance graphs

