



reGenerate Business Plan

Mission Statement

reGenerate assists in reducing food waste in Australia, through the production of environmentally sustainable natural gas, utilising revenues gained to implement community based long term poverty-alleviating strategies in southern Africa.

Concept

reGenerate is a not-for-profit organisation which will adopt a multi-tiered operation that will recover organic supermarket waste for conversion into methane, through anaerobic digestion. The methane produced will then be sold as natural gas to the New South Wales natural gas network. The revenue attained will then be used to fund a knowledge sharing program in southern Africa, which will, through the demonstration of sustainable farming practices help alleviate starvation in these areas. In the spirit of 'lending a hand up, not a hand out', we will empower communities to implement generational change.

Objectives

1. To reduce supermarket food waste.
2. To create a clean sustainable form of energy from a product that would otherwise go to waste.
3. To use the revenue raised through this concept to fund an agricultural education program, **reGeneration**, to assist in alleviating starvation in southern Africa.

Operations

reGenerate will work in cooperation with major waste management corporation *Veolia* and prominent supermarket chains *Woolworths* and *Coles* to collect organic waste. The food waste is then broken down by micro-organisms to produce methane gas, the primary content of natural gas. The waste collected will then be processed through vats containing anaerobic digestion micro-organisms. These micro-organisms consume the waste, producing methane gas in an accelerated manner. This natural gas can then be sold to the AGL-owned NSW natural gas grid for use in both industrial and domestic applications.

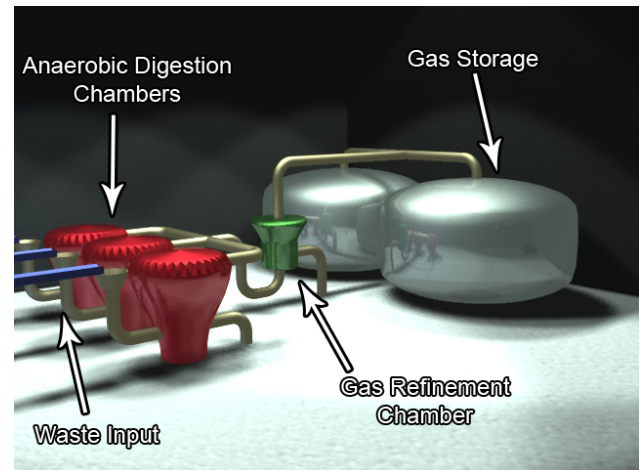
Our research indicates that each year, *Woolworths* and *Coles* stores within the Sydney district dispose of approximately 500,000 tons of organic food waste. The waste is currently transported to landfill areas where it is left to naturally degrade. The masses of food discarded in this way are both wasteful and emit large amounts of hydrocarbon-greenhouse gasses which could otherwise be used as fuel. **reGenerate** will capture this unharnessed energy and therefore the value it represents, reducing waste and emissions.

Through coordination with *Veolia*, **reGenerate** will collect organic waste from supermarkets and transport it to our plant in northern Sydney, reducing the pressure placed on landfill zones at no extra cost to either of the cooperating sectors. The plant is located in northern Sydney as it is adjacent to the existing gas network. After a refinement stage the methane is sold to AGL who then distribute it to households and industries across New South Wales.

The plant, capable of converting up to 480,000 tons of waste to 1.4PJ (1.4 million gigajoules) of natural gas per year, will be an industry leader in automation and as such minimal levels of employees will be required. The site will be constantly monitored by a small team of expert engineers and microbiologists along with general support staff. As the waste will be delivered via pre-existing waste management corporations **reGenerate** needs not take into account the resources required for this process.

Marketing Proposal

reGenerate will provide a new concept in waste removal utilising the available technologies to reduce food wastage, landfill and greenhouse gas emissions and use the profits to alleviate starvation in southern Africa. Market research has shown that supermarkets are Australia's largest contributor to food wastage. The service provided by **reGenerate**, through its



humanitarian values, will provide the supermarket chains with an environmentally friendly and socially responsible image. This image will be achieved through disposing of their organic waste through a sustainable process, which supports the **reGeneration** programme in southern Africa.

reGenerate also provides a financial benefit to the corporations that support it. Currently refuse disposal businesses charge supermarkets to transport waste, however they also charge for the landfill space that is taken up by the waste. **reGenerate** charges no such fee, and thus the costs are limited to transport fees only. **reGenerate** can also offer corporations with Carbon Credits that it will gain through the renewable nature of the energy produced.

Finance

reGenerate will require an initial investment of \$9,000,000 for the Anaerobic Digestion Plant. This includes the cost of research, site preparation and development (\$1.0m), instillation and construction costs (\$3.0m) and the Anaerobic Digestion Unit (\$5.0m). The initial investment is paid back by the beginning of the fifth year, which shows promise for the reGeneration Programme. The nominal net present value is just under \$0.5 million, suggesting that the business is going to be highly profitable and successful. Energy providers in Sydney are prepared to pay \$16 per gigajoule of gas (0.35 tons of initial waste). **reGenerate** has the ability to transform 500,000 tons of waste into methane gas per year, therefore a projected revenue of \$8 million by the fifth year.

INVESTMENT ASSESSMENT						
Project Cash Flows: reGenerate Gas Plant						
	Construction	Yr:1	Yr:2	Yr:3	Yr:4	Yr:5
Project Cash Flows						
Project Outlay	(9,000,000.0)	0.0	0.0	0.0	0.0	0.0
Sales Revenue		3,200,000.0	4,000,000.0	5,600,000.0	6,400,000.0	8,000,000.0
TOTAL	0.0	3,200,000.0	4,000,000.0	5,600,000.0	6,400,000.0	8,000,000.0
Expenditure	0.0	2,352,900.0	2,350,000.0	2,750,000.0	2,950,000.0	3,250,000.0
TOTAL	0.0	2,352,900.0	2,350,000.0	2,750,000.0	2,950,000.0	3,250,000.0
Pre-Tax Cash Flow	(9,000,000.0)	847,100.0	1,650,000.0	2,850,000.0	3,450,000.0	4,750,000.0
Depreciation		300,000.0	300,000.0	300,000.0	300,000.0	300,000.0
Tax	0.0	(254,130.0)	(495,000.0)	(855,000.0)	(1,035,000.0)	(1,425,000.0)
Net Cash Flows	(9,000,000.0)	592,970.0	1,155,000.0	1,995,000.0	2,415,000.0	3,325,000.0
NPV Nominal	482,970.0					

ESTIMATED REVENUE	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
Tonnes of Waste	200,000	250,000	350,000	400,000	500,000
Price per Gigajoule of Gas	\$16.00	\$16.00	\$16.00	\$16.00	\$16.00
Revenue	\$3,200,000	\$4,000,000	\$5,600,000	\$6,400,000	\$8,000,000
ESTIMATED EXPENSES					
Operation Costs	\$ 1,900,000	\$ 2,050,000	\$ 2,350,000	\$ 2,500,000	\$ 2,800,000
reGeneration Program Exp.	\$ 452,900	\$ 300,000	\$ 400,000	\$ 400,000	\$ 400,000
Total Expenses	\$ 2,352,900	\$ 2,350,000	\$ 2,750,000	\$ 2,900,000	\$ 3,200,000
STARTING BANK BALANCE	-\$ 9,000,000	-\$ 8,152,900	-\$ 6,502,900	-\$ 3,652,900	-\$ 152,900
EXCESS	\$ 847,100	\$ 1,650,000	\$ 2,850,000	\$ 3,500,000	\$ 4,800,000
END OF YEAR BANK BALANCE	-\$ 8,152,900	-\$ 6,502,900	-\$ 3,652,900	-\$ 152,900	\$ 4,647,100

reGeneration Program

The **reGeneration program** will be run by two South African Managers, and one Australian based liaison/CEO, all on full time salaries. The Australian based CEO will act as the link between **reGenerate** and the **reGeneration Program**, providing feedback and exploring new farming concepts to be implemented through the program. The program will run as a self sustaining community based course by incorporating local farmers in the educating process.

The two managers in South Africa will spend six months educating one community on how to efficiently utilise the land in their possession, such that they can increase their crop output. At the end of the six month period two volunteers from the initial community will spend four two-week periods at neighbouring communities over the following six months, to pass on what they have just learnt. The citizens conducting the teaching will be well compensated for their efforts and time away from their families. This process will extend into other communities. The two managers will oversee the progression, ensuring that the program is still relevant and functioning correctly. In this manner the number of communities being educated will expand exponentially until the program is assisting 32 separate communities in the first phase of the program.

The costs of running our charity, the **reGeneration Program**, totals roughly \$250,000 per year for the first three years and then \$400,000 for each year thereafter. This encompasses start up costs, teaching and farming tools and supplies and staffing and operational costs. By the end of the fourth year, \$400,000 per year will be devoted to running our charity, but with increasing profit from the gas plant we will be able to invest more capital into the **reGeneration Program**.

Future Prospects

reGenerate has the potential to branch out in many directions, both in our natural gas production industry and international aid program. Our supermarket waste powered natural gas stations have the potential to be placed not only in major cities across Australia but around the world. Through work with municipal and city councils along with lifestyle changes in their societies **reGenerate** has the potential to utilise household waste and sewerage as well as the current consumption of retail waste. Our aid program in South Africa, once established, has the potential to continue to expand throughout the African continent and eventually toward the South East Asia and Pacific Regions.