

Executive Summary

for a

Cryogenic Crumb Rubber and Recycled Plastic Processing Production Plant

Prepared by Simba Mutimbu

Johannesburg, South Africa

July 2017

Table of Contents

I. Preamble.....	5
II. The Project.....	6
1. Purpose	6
2. Background	6
2.1 Mandement Investments (Pvt) Ltd	8
Company owners:	8
3. Market Research.....	9
3.1 Global requirement for rubber and plastic derived raw material	9
3.1.1 Tyres:.....	9
3.1.2 Plastic:	9
3.2 Feasibility of Mutare as the base for the plant.....	11
3.3 Environmental Impact.....	11
4. Marketing and Sales.....	12
4.1 Marketing.....	12
4.2 Sales	12
4.3 Competition	13
5. Production Plans	14
5.1 Facility	14
5.2 Location.....	14
5.3 Production.....	15
5.3.1 Production Process	15
5.3.2 Production Capacity.....	15
5.3.3 Required Equipment	15
5.3.4 Staffing	16
5.3.5 Inventory.....	16

5.3.5.1 Raw materials.....	16
5.3.5.2 Supply Sources	16
5.3.6 Delivery / shipping	16
5.3.7 Quality Management	17
6. Organizational Structure and Personnel.....	17
6.1 Management and competencies	17
6.2 Office staff and competencies	17
6.3 Labourers and competencies	18
6.4 Outsourced services.....	18
6.5 Organizational chart.....	18
6.6 Remuneration estimates.....	19
6.8 Overtime	19
III. Financial Data.....	20
1. Sales Forecast.....	20
2. Financial Variables	21
3. Financial Projections	21
3.1 Income Statement.....	22
3.2 Cash Flow Statement	23
4. Financing Requirements	23
4.1 Total Capital Outlay.....	23
4.2 Cost of the system installed	23
4.3 Building and infrastructure cost.....	24
4.3.1 Building	24
4.3.2 Infrastructure	24
4.4 Required equipment cost.....	24
4.4.1 Factory Equipment.....	24
4.4.2 Office Equipment	24
4.5 Factory running cost	25
4.6 Operating Capital	25
4.7 Other costs	25
4.7.1 Raw materials.....	25
4.7.2 Working capital	25

4.7.3 Financial reserve	25
5. Summary of Total Capital Outlay	26
6. Return on Investment	26
7. Repayment of long term debt.....	26
IV. Appendices	27
1. Appendix 1 – Recycled Plastic Availability	27

I. Preamble

The world's population has been growing at a fast pace in the last few decades, and with it the need for natural resources. This increases the demand for everyday use products, a vast majority of which are produced from virgin raw materials, be it wood, oil or metals.

Only very recently, during the last decade, have we started fully grasping the fact that eventually these natural resources will expire, we therefore should concentrate on most effective ways of recycling the virgin materials and re-using them. More and more companies are being set up globally with that particular purpose.

The project aims to use cryogenics and blending turnkey solution using crumb rubber and post-industrial flaked plastic to produce high quality pellets that are turned into products as varied as injection- moulded automotive parts, roofing membranes and patio furniture. In addition, with only nitrogen and a closed-loop water system required for production, the system does not create any pollution. The grandeur and importance of this solution has been recognized with Deloitte's Green Technology award.

In their strive to promote environmentally friendly technology, the Canadian technology suppliers went even further and signed a global off take agreement with an American, a 6 billion dollar a year private petrochemicals company based in Houston. The agreement guarantees that every investor purchasing this blending and recycling plant will automatically have all the plant's production output purchased by the offtaker for 10 years from the start of production. The agreement can be further extended for every subsequent 5 year period.

The author of this business plan is a Zimbabwean based in South Africa and strongly believes in the technology as well as the feasibility of basing the plant in the eastern border city of Mutare in Zimbabwe. This is motivated by the close proximity of Mutare to the Mozambiquean port city of Beira, a distance of 300km (186miles). Also with the growing awareness of industry's carbon footprint on the environment, there has been a general opening up to the idea of preserving resources and the need for recycling. The central government is continuously implementing new regulations and initiatives that encourage environmentally friendly businesses. As mentioned above, Mutare is also very well positioned for global access, be it acquiring raw materials or shipping the end product because of the easy access to Beira port.

The guaranteed off take agreement makes this a very attractive investment. Despite the required investment amount being rather significant at **US\$41 million**, the internal return on investment rate is at an impressive 156%, and the return on the total amount invested is as low as approximately 16 months from the start of production.

As this business plan shows, there is no doubt this is an excellent business opportunity, both financially and environmentally as there is little to none carbon emissions.

II. The Project

1. Purpose

The purpose of the plant will be to produce a chemical or additives free blend of crumb rubber and recycled plastic, using specialist patented equipment from Canada, in order to sell it through a guaranteed 10-year off take agreement to a company based in Houston, USA.

2. Background

The Technology

The technology provides the lowest acquisition cost and the lowest life cycle cost to manufacture crumb rubber, with lower maintenance, less floor space and lower utilities costs. It is the “Zero Pollution Solution”: the only outputs from a cryogenic secondary system are crumb rubber and gaseous nitrogen which escapes back to the atmosphere. The turnkey system is managed by a touch screen HMI and PLC, and includes a complete dust control system, a spark suppression system, as well as operator and manager training.

The system will blend together approximately 16M kg of processed recycled tires, and approximately 38M kg of processed recycled plastic per year into a polymer end product.

The typical polymer mixture is to use about 35% rubber with 65% plastic. The output from the blending system is a round pellet about 2 to 3 mm in size, which can be used in injection molding machines that manufacture typical plastic products, such as automotive parts, household products, and garden products, etc. These pellets are taking old tyres and scrap plastic and making a new material that is 100% recycled content.

2.2 The Project Promoters-MANDEMENT INVESTMENTS (PVT) LTD

The company has been registered for the sole purpose of acquiring and running the processing plant. It is an entity duly registered in the republic of Zimbabwe (Registration No.19265/2004), and is due to be based in Mutare, as the city borders Mozambique and is close to the port city of Beira. The close proximity will allow a smooth transportation of the product from factory to port, as well as for the reverse journey of raw materials from port to the plant in the first months of operation until a constant supply of the raw materials can be sourced locally.

Company owners:

Currently the company is owned exclusively by Simba Mutimbu. However, this could change as the shareholding structure can be adjusted to accommodate other equity players like investors, depending on negotiations. The nature of the ownership will comply with Zimbabwean laws to ensure full compliance with all statutory requirements.

3. Market Research

3.1 Global requirement for rubber and plastic derived raw material

3.1.1 Tires:

Global requirement for rubber as raw material has been growing fast over the last decades, and there are no indications for any change in this trend. Between 1960 and 2005, global rubber consumption grew 4-fold, from 5 to 20 million tonnes per year³. This is due to population growth, GDP growth in particular in Asia, leading to higher spending. Growth in Asia has spurred the growth of the automotive industry, which is the largest buyer of rubber globally⁴. Within the automotive industry, tire production is at the forefront of rubber usage.

It is estimated that worldwide, over 3 billion tires are dumped every year⁵. They have to be accommodated in a way that will not pose a threat to the environment by causing fire hazards at landfills or even further contaminating the atmosphere when burnt.

3.1.2 Plastic:

The global plastics industry has recorded average annual growth of 9 per cent since 1950. In the past 30 years alone, international plastics production has grown by more than 500 per cent. Global plastics consumption is forecast to grow five per cent per annum for the period 2007 through 2015. In actual production terms, this represents

an overall global production level of 330 million tonnes by 2015⁶.

In recent years, significant aspect of plastics material growth globally has been the innovation of newer application areas for plastics such as increasing plastic applications in automotive field, rail, transport, defence & aerospace, medical and

³ http://www.therubbereconomist.com/The_Rubber_Economist/Rubber_Consumption.html

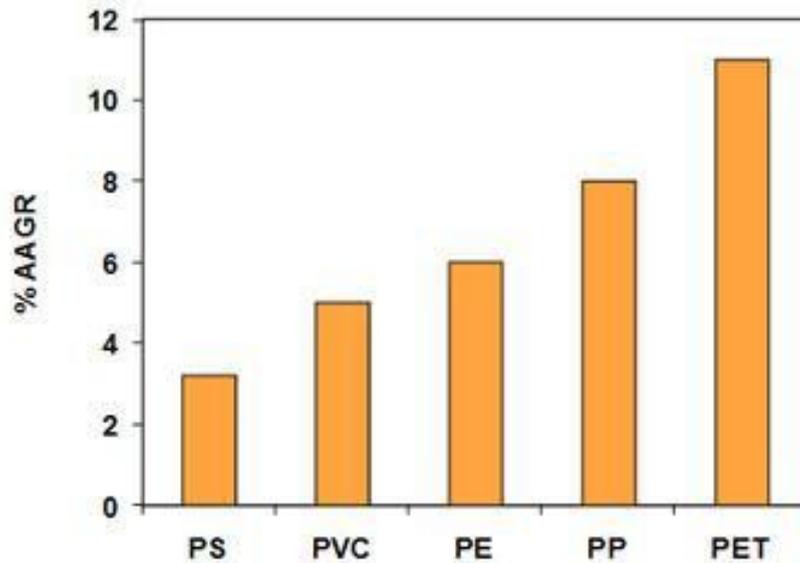
⁴ http://rubberasia.com/v2/index.php?option=com_content&view=article&id=555&catid=5

⁵ http://www.youthxchange.net/main/b207_how-much-m.asp

⁶ <http://gulftoday.ae/portal/d74e3fde-09a3-4ccd-85d6-259de883eb84.aspx>

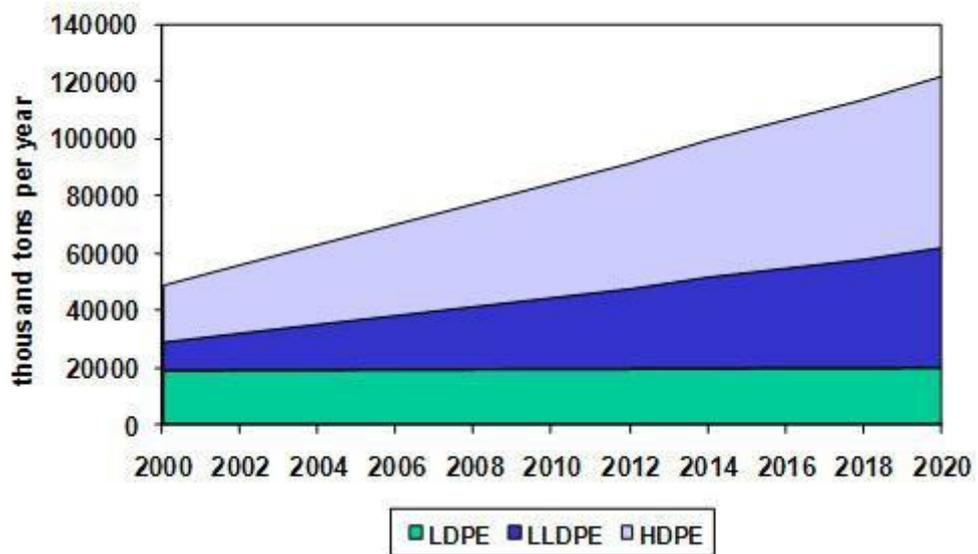
healthcare, electrical & electronics, telecommunication, building & infrastructure, furniture, etc⁷.

Global Growth Rates (2004 - 2010)



Source: http://cipet.gov.in/plastics_statics.html

Global polyethylene (PE) demand Growth (100 Tons/year)



Source: http://cipet.gov.in/plastics_statics.html

⁷ http://cipet.gov.in/plastics_statics.html

Plastic is the largest cause of contamination and landfill overflow globally as only about 7% of plastic makes it into the recycling process.

3.2 Feasibility of Mutare as the base for the plant

Zimbabwe has for the past few years been experiencing a sliding economy, characterized by high unemployment rates. The closure of many companies due to viability problems has not helped the situation either. A project of this nature, though small in scale, can help in employment creation and boost the local economy. It will also bring awareness of issues concerning conservation of our natural resources, initiatives to manage waste disposal and the recycling of many different materials. In recent years a number of recycling operations have sprung up all in the region, especially in South Africa, turning many products like old tyres, plastic, paper, etc. into valuable raw materials with a large range of applications.

Mandament Investment's Cryogenic production plant will be the first of its kind in the region. It will create a viable purchasing base for all the rubber crumb and plastic flake that is produced locally, thereby generating a large source of income for local enterprises which can only benefit the local workforce.

3.3 Environmental Impact

Because of the vision of the technology developers to create a completely green solution, this process uses Nitrogen which is only released into the atmosphere. Along with a closed-loop water cooling system for the pellets that are produced, and a softening process that doesn't create any significant fumes, a 'zero pollution' solution has been created.

Fine material collected throughout the dust collection system during the secondary cryogenic process consists of approximately 37 microns (0.037 mm) and finer dust. This dust is a combination of nylon/rayon tire fibre, trace amounts of very fine tire rubber and trace amounts of other dust collected throughout the process. Through timers on the dust collectors the fine dust is allowed to enter air locks which in turn transport waste material onto a conveying system into the compactor. Bag specification for exhausted air to the atmosphere from dust collectors is clean to 99.99% to two (2) microns (0.001").

The integrated Blending System does not emit any dust.

Immediately upon exposure to the atmosphere any liquid nitrogen (LIN) from either of the cryogenic systems reverts back to its gaseous state. Since LIN is derived through the process of compressing ambient air, which in turn is 79% nitrogen, any emissions from the system are simply discharged back to the atmosphere.

This turnkey cryogenic secondary Fine Mesh System and the Blending System do not emit any harmful emissions and are therefore environmentally safe.

In addition, due to the ever increasing need for products made from virgin plastic and rubber, the process allows companies to meet production needs while providing no increased demands on world raw materials supply, and commits them to the 'Triple R' of Reduce/Reuse/Recycle philosophy.

4. Marketing and Sales

4.1 Marketing

There are no marketing activities required, as the whole production will be bought by off taker, as guaranteed by the 10-year off take agreement. All marketing activities required to sell the product on global markets as well as marketing-associated costs will be borne by the off taker.

4.2 Sales

With the guaranteed 10-year off take agreement, through the technology suppliers as the intermediary - is the sole guaranteed client for the factory. There will be no costs associated with sales to the factory.

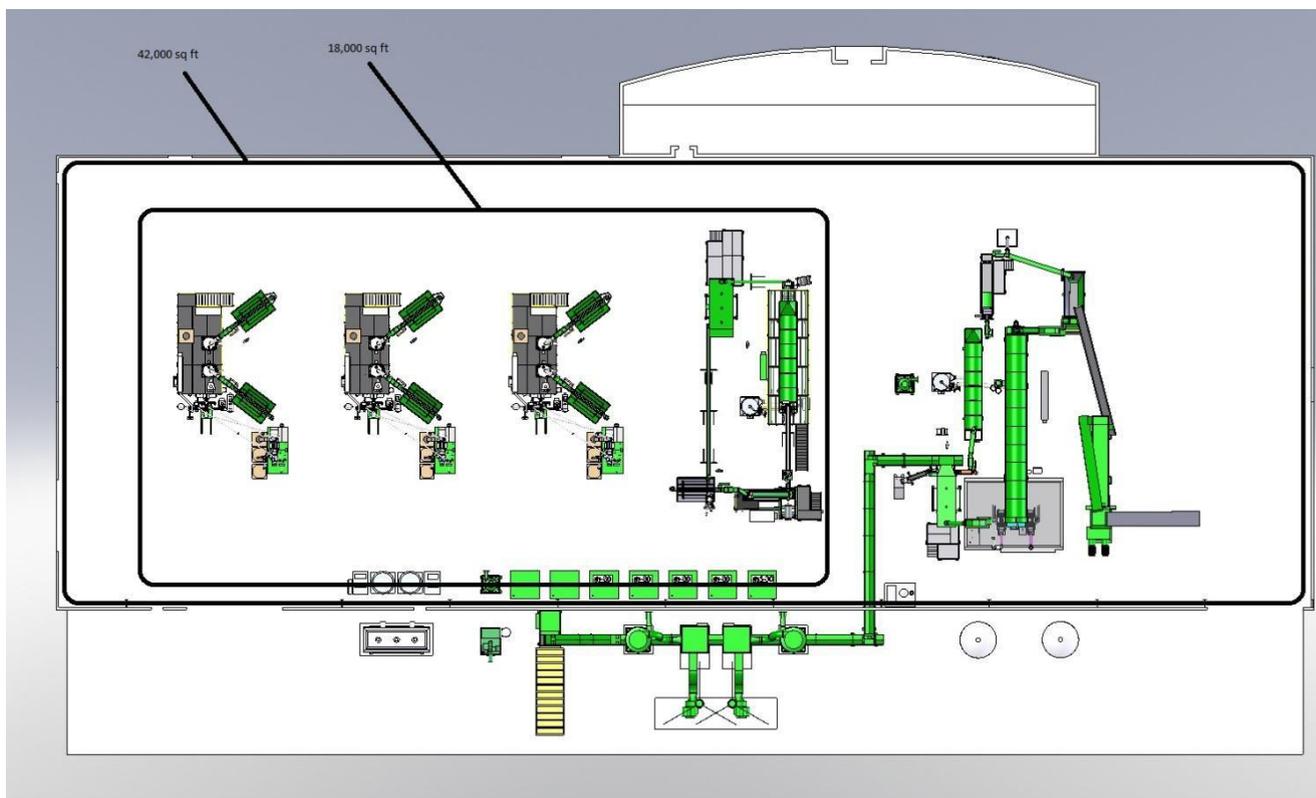
4.3 Competition

Currently, there is no other factory in Zimbabwe, no Africa producing any type of blended crumb rubber and plastic pellets. From this point of view, there is also no competition.

5. Production Plans

5.1 Facility

Required size of the building, as per the technology supplier's guidance, is 7,000m², double height. This is to house the plant, a couple of small offices, employee facilities (bathrooms, changing rooms, kitchen and staff room), quality testing lab as well as storage areas for raw material and end product. Ideally the building should be designed in such a way that the plant and offices are positioned in the middle, with raw material and end product storage areas placed on the opposing sides of the building, which will help streamline the work process. The layout of the plant within the building can be seen below (smaller rectangle):



Land requirement for the plant is between 10,000-20,000m², depending on the shape and positioning of it. In addition to the building, there is space required for nitrogen tanks, parking and back-up generators, but first and foremost for easy truck access to loading and unloading bays.

5.2 Location

The location that has been given very careful consideration and as such Mutare city has been selected. Factors which have influenced this selection are proximity to a large port, Beira in Mozambique, low cost of real estate, relatively

low production costs, convenient road and rail transportation as well as tax incentives offered by government for manufacturing concerns. A property at the corner of Dublin and Durban Roads in the industrial area of the city has been located and is being considered as the project site. It is 1 hectare in size and there is some existing infrastructure. Technical experts shall assess suitability of this property before it can be acquired.

5.3 Production

5.3.1 Production Process

With the signing of the initial contract, there are approx. 210 days until the equipment arrives on site to be implemented. Within these 210 days are a number of events that take place. First of which is a payment at 30 days covering 45% of the project cost and the opening of an L/C that will cover the balance. At 60 days roughly, the building layout drawings are submitted for approval to RTI and a 20-25% payments is released from the L/C. Upon the submitting of shipping documents, sign-off sheets and loading photographs, the next payment is due at 180 days and the equipment is released for carriage to the site. Once the equipment arrives, another 30-40 days will be used to erect the lines, test them, and do pre-production runs and quality checks. During the implementation period, comprehensive training will be conducted for all staff on basic operation of the equipment, to the more complex QC process. Starting with the 9th month, material is produced and stockpiled until the 15th day, when as per the off-take agreement, it is loaded onto containers and transported to the nearest shipping port. At the time of loading, an invoice or invoices are created, and submitted to the buyer along with the MB/L, and all other required documents as proof of shipment. Approx. 30 days post shipment; a payment will be made to the companies account. Within those 30 days however, another shipment will have been made, thereby ensuring that a steady stream of income is received to cover all operating and financial requirements.

5.3.2 Production Capacity

	1 st year	2 nd year	3 rd year	4 th year	5 th year
Capacity in kg per year	51,975,000	55,440,000	55,440,000	55,440,000	55,440,000

Capacity in the 1st quarter of year 1 is predicted at 75%. Remaining numbers are calculated at 100% capacity.

5.3.3 Required Equipment

In addition to the system provided by the technology suppliers, the following additional equipment will be required:

- Two 50K-litre liquid nitrogen tanks (manufactured locally)

- 6 forklifts (2 inbound, 2 outbound, 2 production)
- Basic tools (hammers, screwdrivers etc.)
- Office equipment and furnishings
- CCTV/Security system (incl. Time and Attendance)

5.3.4 Staffing

Position	1st shift	2nd shift	3rd shift	4th shift	Total
GM	1				1
Shift manager / engineer	1	1	1	1	4
Labourers	10	10	10	10	40
Office Staff –Traffic	1	1			2
Office Staff – Accounts	1				1
Office/Admin Ass't	1				1
Total:					49

The factory will operate 24/7 in 3 shifts, however 4 groups of shifts are required to alternate, to meet the legal requirements of days off and maximum allowed hours of work per week.

Non-shift office staff operating hours: Mon - Fri, 8am-5pm. Shift timings: 7am-3pm, 3pm-11pm, 11pm-7am.

5.3.5 Inventory

5.3.5.1 Raw materials

Raw materials must be in stock with 1 month's reserve supply in order to secure uninterrupted production. Materials required are clean crumb rubber of preferably 8-mesh and flaked post-industrial plastic of one of the three types: LDPE, HDPE, PP.

5.3.5.2 Supply Sources

Currently negotiations are underway for a steady supply of rubber from Omnix, based in Abu Dhabi. Preliminary agreement has been reached, Omnix can supply the whole required quantity of crumb rubber.

Plastic can be only partially supplied by local sources as the intake and production capabilities are not adequate to supply the production process. However, relationships have been opened up with alternate sources of material from the Far East, and sufficient quantities have been guaranteed to ensure continuous operation of the factory. (Appendix 3)

5.3.6 Delivery / shipping

For local raw materials, negotiated delivery is FOB factory. For imported material, it is CIF nearest port. An alternative of road or rail transport system will be the most cost-effective port-to-factory mode of transportation for the containers carrying some of the raw material rubber crumbs.

Collection of the end product will take place at the factory, with the buyer informing the factory in advance where the particular batch will be shipped to. It is the buyer's responsibility to provide sufficient number of containers on time and the shipping destination information, it is the factory's responsibility to have them loaded and marked properly for shipping.

5.3.7 Quality Management

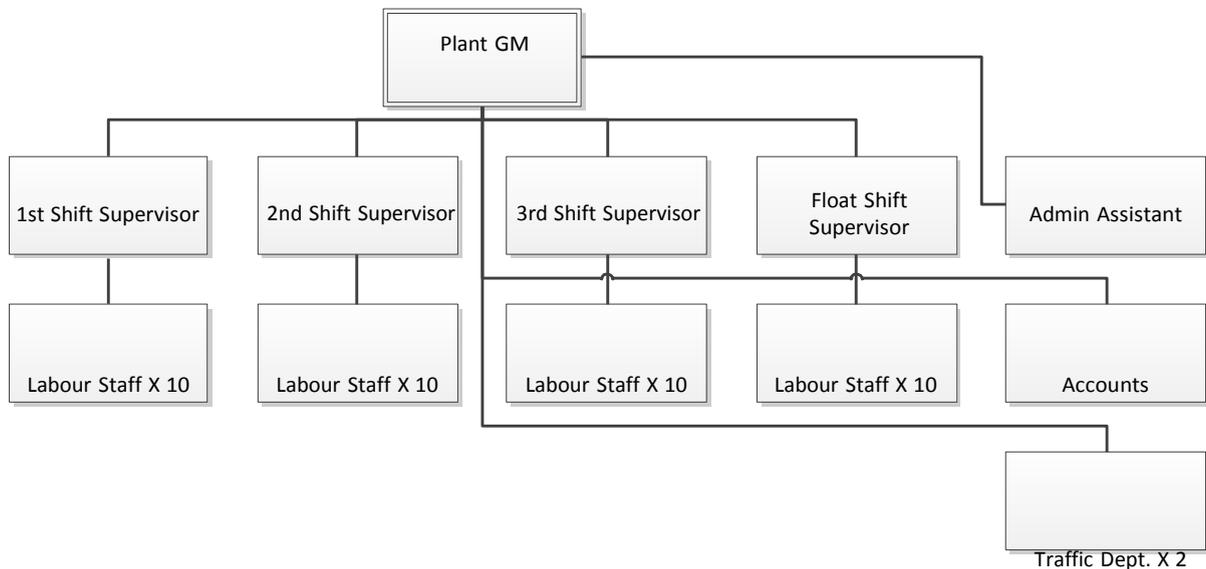
A complete testing lab will be shipped by the technology suppliers along with the factory equipment. This lab will be used to ascertain and evaluate the quality of both the incoming recycled plastic, and the outgoing product. The user of this lab, will be fully trained and tested by the technology suppliers, and on-going continuous education will be made available to them.

6. Organizational Structure and Personnel

6.1 Management and competencies

The Management of this factory will be handled by seasoned professionals, with the General Manger at the outset being a person who has experience in managing an operation of this magnitude and type in the recent years. Key requirements for the management, which includes the GM and shift supervisors, are experience in project managing a production plant as well as people management. In addition, the shift supervisors need to be comfortable with operating and if need be programming the PLC units that run the plant machinery.

6.2 Organizational chart



6.6 Remuneration estimates

General labour staff in Zimbabwe have minimum pay packages ranging from \$350 to \$550 per month. We estimate that this facility's staff will receive in the range of \$400 to \$600 per month. The foremen, or shift supervisors will most likely be paid in the range of \$1200-\$1500 per month.

The Plant GM will be paid on experience. A rough estimate would be in the range of \$5000-\$7000 per month.

Position	Monthly \$	Yearly \$	No of employees	Total \$
GM	5,000	60,000	1	60,000
Shift manager / engineer	1,500	18,000	4	72,000
Labourers	400	4,800	40	192,000
Office Staff –Traffic	1,000	18,000	2	36,000
Office Staff – Accounts	3,000	36,000	1	36,000
Office/Admin Assistant	1,000	12,000	1	12,000
Total per year for all employees				408,000

6.8 Overtime

Overtime in all likelihood won't be necessary with a rotating 4 team/3 shift workforce. In the event that a large amount of increased labour activity is needed, there are agencies that provide temporary labour staff to aid in such situations.

Overtime is strictly regulated by the Zimbabwe labour law. Shall the need arise for permanent staff to work overtime, the legal regulations will be followed.

III. Financial Data

1. Sales Forecast

Name	1 st Qtr.	2 nd Qtr.	3 rd Qtr.	4 th Qtr.	Year 2	Year 3	Year 4	Year 5
Produced kilograms	10,395,000	13,860,000	13,860,000	13,860,000	55,440,000	55,440,000	55,440,000	55,440,000
Price	\$1.32/kg	\$1.32/kg	\$1.32/kg	\$1.32/kg	\$1.33/kg	\$1.34/kg	\$1.35/kg	\$1.36/kg
Revenue	\$13,721,400	\$18,295,200	\$18,295,200	\$18,295,200	\$73,735,200	\$74,289,600	\$74,844,000	\$75,398,400

Sales forecast is based on the plant operating 24/7, 50 weeks per year.

2. Financial Variables

All Values in USD

PLANT VARIABLES:	Year 1	Year 2	Year 3	Year 4	Year 5	
hours/shift	8	8	8	8	8	
shifts/day	3	3	3	3	3	
days/week - Cryo Fine Mesh	7	7	7	7	7	
days/week - Blending	7	7	7	7	7	
weeks/year	50	50	50	50	50	
days/year	350	350	350	350	350	
average operating time/week	90%	90%	90%	90%	90%	
Hours/year	7560	7560	7560	7560	7560	
Kilograms of rubber processed/yr	16,632,000	16,632,000	16,632,000	16,632,000	16,632,000	
Number of Blending Systems	3	3	3	3	3	
Capacity of each blending system KGs/hr	1995	1995	1995	1995	1995	
Land, Building and Improvements	\$2,000,000					
Shipment of System	\$185,000					
Commissioning	\$310,000					
Fine Mesh System installed	\$3,800,000					
XyCom systems installed	\$14,505,000			4835000		
TurnKey Solution Installed	\$18,800,000					
Downpayment on System	\$0					
Long term Debt	\$40,000,000					
Repayable in	5 years					
Monthly payments	\$840,074					
Total Interest	\$10,404,467	9.50%				
Total amount to be repaid	\$50,404,467	9.50%				
Working Capital available	\$400,000					
SELLING PRICE OF OUTPUT:	<u>Price per Pound</u>					
	<u>Quarter 1</u>	Balance	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>
Average ratio of rubber to scrap plastic	30%	30%	30%	30%	30%	30%
KGs of Rubber used/yr	3,118,500	12,474,000	16,632,000	16,632,000	16,632,000	16,632,000
KGs of Recycled Plastic used/yr	7,276,500	29,106,000	38,808,000	38,808,000	38,808,000	38,808,000
Total KGs of pellets produced/yr	10,395,000	41,580,000	55,440,000	55,440,000	55,440,000	55,440,000
XyCom pellets sales Price /KG	1.32	1.32	1.33	1.34	1.35	1.36
VARIABLE COSTS:						
Salary & Labour Rates:		Year 1	Year 2	Year 3	Year 4	Year 5
Fine Mesh Labourer per shift/Rate per hr	5 \$	3.25	\$3.38	\$3.52	\$3.66	\$3.80
XyCom Labourer per shift/Rate per hour	8	\$3.25	\$3.38	\$3.52	\$3.66	\$3.80
Foremen per shift / Rate per hour	1.3	\$28.00	\$29.12	\$30.28	\$31.50	\$32.76
Plant Manager - Not applicable		\$0	\$0	\$0	\$0	\$0
Maintenance Contract per year		\$60,000	\$62,400	\$64,896	\$67,492	\$70,192
Fringe Benefits as % of Salary & Wages		25%	25%	25%	25%	25%
Material Costs:						
Purchase of 5 - 10 mesh crumb rubber/kg		0.18	0.18710	0.20	0.21	0.22
Recycled Plastic Purchased, price/KG		0.72	0.73	0.74	0.75	0.76
Electricity:						
Total HP	2450					
Utilization Factor	80%	utilization factor				
Consumption	1474	KW per hour				
Cost of Electricity	\$0.0750	Cents per KWHr				
Price of Liquid Nitrogen	\$0.132					
KGs of Liquid nitrogen used/KG rubber processed	1.20					
Packaging (760 kg big bags, banding)	\$25.00	per metric tonne				
First Year Operating Rate	First Qtr	Second Qtr	Third Qtr	Fourth Qtr		
	75%	100%	100%	100%		
Land Size	20,000	square metres				
Realty & Business Tax	\$0.00	per square metre				
Insurance Costs	\$75,000	per year				
Professional Fees- Startup	\$75,000					
Professional Fees- Annually	\$20,000					
General Manager:						
Salary	\$60,000	per year				
Other Costs	\$3,000	per year				
Salesperson:						
Salary & Benefits	\$0	per year				
Royalty on production	\$0.050					
Commission on Pellet Sales	0.00%					
Percent of pellets sold on Commission	100.00%					
Travel, Promotion per year	\$0	per year				
Office Staff:						
Salary & Benefits	\$156,000	per year				
Other office Costs	\$50,000	per year				
Corporate Tax Rate on first	\$200,000		0%			
Rate on balance			0%			

pg 1-1a

3. Financial Projections

3.1 Income Statement

Proforma Income Statement										
By quarter for Year 1										
	Start Up Period	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Year	2nd Year	3rd Year	4th Year	5th Year
REVENUES:										
XyCom pellet Revenue		13 721 400	18 295 200	18 295 200	18 295 200	\$68 607 000	73 735 200	74 289 600	74 844 000	75 398 400
Total Revenue	0	13 721 400	18 295 200	18 295 200	18 295 200	\$68 607 000	73 735 200	74 289 600	74 844 000	75 398 400
MANUFACTURING COSTS:										
Plastic purchases		3 929 310	6 985 440	6 985 440	6 985 440	24 885 630	28 329 840	28 717 920	29 106 000	29 494 080
Rubber Purchase		414 215	736 382	736 382	736 382	2 623 360	3 111 847	3 278 167	3 444 487	3 610 807
Nitrogen used		370 478	658 627	658 627	658 627	2 346 359	2 634 509	2 634 509	2 634 509	2 634 509
Salaries, Labour & Benefits	0	129 315	166 170	166 170	166 170	627 825	691 267	718 918	747 675	777 582
Utilities	5 000	156 696	208 928	208 928	208 928	783 481	835 713	835 713	835 713	835 713
Repairs & Maint (preparation)			55 440	55 440	55 440	166 320	221 760	221 760	221 760	221 760
Supplies		77 963	138 600	138 600	138 600	493 763	554 400	554 400	554 400	554 400
Packaging		194 906	346 500	346 500	346 500	1 234 406	1 386 000	1 386 000	1 386 000	1 386 000
Materials Handling		46 778	83 160	83 160	83 160	296 258	332 640	332 640	332 640	332 640
Rent	22 733	34 100	34 100	34 100	34 100	136 400	136 400	136 400	136 400	136 400
Insurance	15 000	18 750	18 750	18 750	18 750	75 000	75 000	75 000	75 000	75 000
Realty & Business Tax	0	0	0	0	0	0	0	0	0	0
Total Manufacturing Costs	42 733	5 372 510	9 432 097	9 432 097	9 432 097	33 668 801	38 309 376	38 891 427	39 474 583	40 058 890
GROSS MARGIN:	-42 733	8 348 890	8 863 103	8 863 103	8 863 103	34 938 199	35 425 824	35 398 173	35 369 417	35 339 510
SELLING, ADMIN, FINANCIAL:										
Management Salary & Costs	28 875	29 375	29 375	29 375	29 375	117 500	117 500	117 500	117 500	117 500
Office Salary & Costs	4 167	50 920	50 920	50 920	50 920	203 678	203 678	203 678	203 678	203 678
Marketing Costs	0	0	0	0	0	0	0	0	0	0
Royalties		389 813	693 000	693 000	693 000	2 468 813	2 772 000	2 772 000	2 772 000	2 772 000
Professional Fees	75 000	5 000	5 000	5 000	5 000	20 000	20 000	20 000	20 000	20 000
Financial Costs	0	515 724	478 948	442 173	405 397	1 842 242	1 033 175	444 763	-143 650	-732 063
Total Selling, Admin, Financial	108 042	990 831	1 257 243	1 220 467	1 183 691	4 652 233	4 146 353	3 557 941	2 969 528	2 381 116
Operating Profit Before Tax	-150 775	7 358 059	7 605 860	7 642 636	7 679 411	30 285 965	31 279 471	31 840 233	32 399 888	32 958 394
Depreciation	0	686 438	915 250	915 250	915 250	3 432 188	3 661 000	3 661 000	3 661 000	3 661 000
Profit Before Tax	-150 775	6 671 621	6 690 610	6 727 386	6 764 161	26 853 778	27 618 471	28 179 233	28 738 888	29 297 394
Corporate Income Tax						0	0	0	0	0
Annual Net Income after Tax						26 853 778	27 618 471	28 179 233	28 738 888	29 297 394
Cumulative Profit						\$26 703 003	\$54 321 474	\$82 500 706	\$111 239 595	\$140 536 989
RATIOS										
Return on Equity						1074,15%	1104,74%	1127,17%	1149,56%	1171,90%
Payback (based on first 3 year average)						0,6 years				
Internal Rate of Return						156,44%				

3.2 Cash Flow Statement

Proforma Cash Flow	Start Up Period	1st Qtr	2nd Qtr	3rd Qtr	4th Qtr	Year	2nd Year	3rd Year	4th Year	5th Year
Cash, beginning	400,000	201,972	3,602,005	7,046,611	10,527,993	201,972	14,046,151	42,232,945	72,610,438	103,713,906
Cash In:										
Cash Receipts on Revenue	0	10,977,120	14,636,160	14,636,160	14,636,160	54,885,600	72,205,056	74,223,072	74,777,472	75,331,872
Total Cash Available	400,000	11,179,092	18,238,165	21,682,771	25,164,153	55,087,572	86,251,207	116,456,017	147,387,910	179,045,778
Cash Out:										
Payroll & Benefits	67,045	196,360	233,215	233,215	233,215	896,003	959,446	987,096	1,015,853	1,045,760
Other Direct Cash Payments	130,983	5,062,477	8,438,117	8,401,341	8,364,565	30,266,499	32,977,928	32,777,595	32,577,263	32,376,930
Long Term Debt Repayment	0	2,520,222	2,520,222	2,520,222	2,520,222	10,080,888	10,080,888	10,080,888	10,080,888	10,080,888
Income Tax payments	0	0	0	0	0	0	0	0	0	0
Total Cash Out:	198,028	7,779,059	11,191,554	11,154,778	11,118,002	41,243,390	44,018,262	43,845,579	43,674,004	43,503,578
Cash generated in Period	(198,028)	3,400,033	3,444,606	3,481,382	3,518,158	13,844,179	28,186,794	30,377,493	31,103,468	31,828,294
Cash at End	201,972	3,602,005	7,046,611	10,527,993	14,046,151	14,046,151	42,232,945	72,610,438	103,713,906	135,542,200
Internal Rate of Return range:										
(18,800,000)	23,723,098	38,267,683	40,458,381	41,184,356	41,909,182					

4. Financing Requirements

4.1 Total Capital Outlay

Amount required for Total Capital is **US\$41 million**.

4.2 Cost of the system installed

- RTI turnkey operation equipment is US\$20 million.
- This includes the cost of the secondary cryogenic system, and (3) Blending lines, cost of shipping.
- Excluding port charges and onward transport as outlined in the contract
- All commissioning expenses, excluding purchase of tools needed for the install process. The purchased tools will be kept by the factory for all necessary maintenance activities.
- Excluding the services of local electricians and labour on an as needed basis.

4.3 Building and infrastructure cost

4.3.1 Building

Cost of the land, construction of the building together with civil works will be approximately \$6 million according to three estimates submitted by local contractors.

4.3.2 Infrastructure

Fabrication of (2) LIN (Liquid Nitrogen Tanks) with a capacity of 50K Litres will be \$1.2 million. These tanks are required for the cryogenic process, and fabrication will in the long term be more cost effect than rental from local sources.

In order to ensure continuous power supply to the factory, a back-up generator will be required. The cost of this equipment will be approximately \$500K USD, with the cost of one month's diesel approximately \$25K USD.

Item	Cost in USD
Building and Civil works	6,000,000
LIN Tanks	1,200,000
Back-up Generator	500,000
Fuel supply	25,000
Total:	7,725,000

4.4 Required equipment cost

4.4.1 Factory Equipment

Item	Cost in USD
Forklifts X 6 @ 100,000 each	600,000
Maintenance Tools	15,000
Spare Parts	150,000
CCTV and Time Keeping system	50,000
Pallet Trucks X 6 @ 7000 each	42,000
Total:	857,000

4.4.2 Office Equipment

Item	Cost in USD
Office Furniture	10,000
Computers	6,000
Network equipment	8,000
Office Software	12,000
Office and Kitchen supplies	4,000
Total:	40,000

4.5 Factory running cost

Item	Cost per year in USD
Transportation – Labour	33,000
Housing – Labour	46,000
Security – Outsourced	65,000
Cleaning Services – Outsourced	30,000
Uniforms and Dry Cleaning	10,000
Meals – Labour	76,000
Total:	260,000

The above costs are not included in the total start-up capital required as they are already part of 1st quarter operations capital.

4.6 Operating Capital

Capital for the 1st Quarter of operations is required to ensure that all expenses are met prior to the first shipments and ensuing payments. The required amount is \$2.4 million USD.

4.7 Other costs

4.7.1 Raw materials

To secure the needed raw materials prior to commission of the plant, one months' inventory is required. The cost of the plastic and rubber will be approximately \$2.5 million USD.

4.7.2 Working capital

To meet the initial expenses such as licensing and compliance, salaries, rental equipment, port and transportation charges, etc. \$2.5 million USD is set aside.

4.7.3 Financial reserve

A reserve of approximately \$2.5 million USD is being put aside for extenuating circumstances or unforeseen expenses.

5. Summary of Total Capital Outlay

Item	Cost in USD
RTI Turnkey System	20,000,000
Building and Infrastructure Costs	7,725,000
Factory Equipment	857,200
Office Equipment	40,000
Operating Capital	2,400,000
Initial Raw Materials Purchase	2,500,000
Working Capital	2,500,000
Capital Raising Fees (5% est.)	2,000,000
Financial Reserve	2,500,000
Total:	40,522,200

6. Return on Investment

With the above variables and required investment capital, the Internal Rate of Return on this project will be approx. 156% whereas the Return on Equity in the first year of operations will be approx. 1075%.

7. Repayment of long term debt

The repayment of the borrowed requested capital investment of \$41M USD has been calculated to be completed within a time period of 60 months (5 years), from the date of the purchase agreement being signed.

IV. Appendices

1. Appendix 1 – Recycled Plastic Availability

----- Original Message -----

Subject:Re: Re: Injection grade recycled PP, LDPE, HDPE Granules

Date:Mon, 21 August 2015 13:41:32 +0800

From:info <info@sdtqchem.com>

Reply-To:info <info@sdtqchem.com>

To:simbamutimbu <simbamutimbu@gmail.com>

Dear Mr. Simba,

The payment is acceptable, but our best price for Recycled PP/ LDPE/ HDPE granules at USD720/MT & USD730/MT & USD740/MT **CIF Jebel ali** ,please note the freight for 40 foot container will be more expensive than 20 foot container.

Of course, a ten years or more long term cooperation must be guaranteed.

We are pleased to arrange 3kgs sample for your evaluation, but you have to pay for the delivery cost to Canada.

Sincerely,

Mae

Qingdao Tengqing Chemical Industry Co., Ltd.

Add.: No.135, Yan An Three , China.

Ph.: 86-0532-80907248

Fax.: 86-0532-83862012

Email.: info@sdtqchem.com

Web: www.sdtqchem.com

