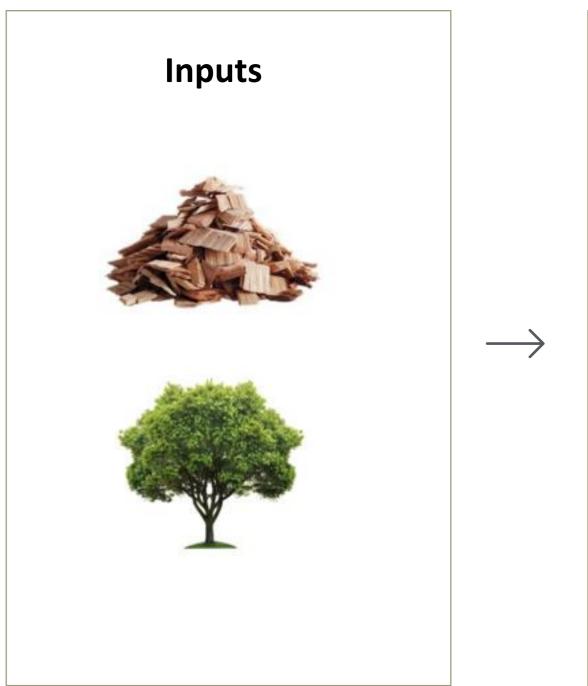
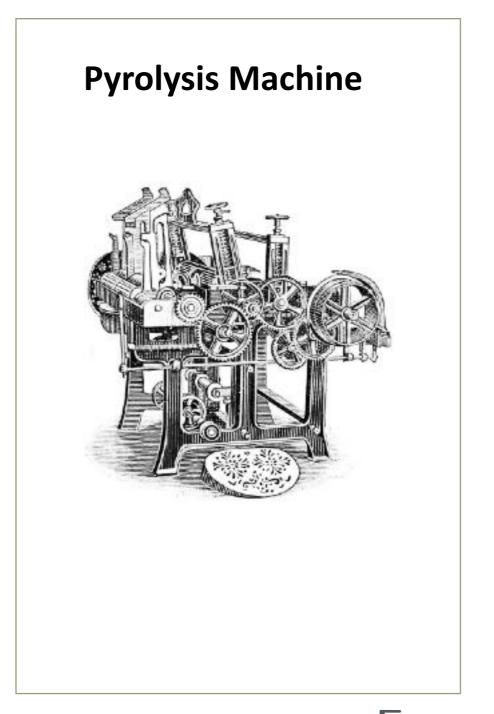
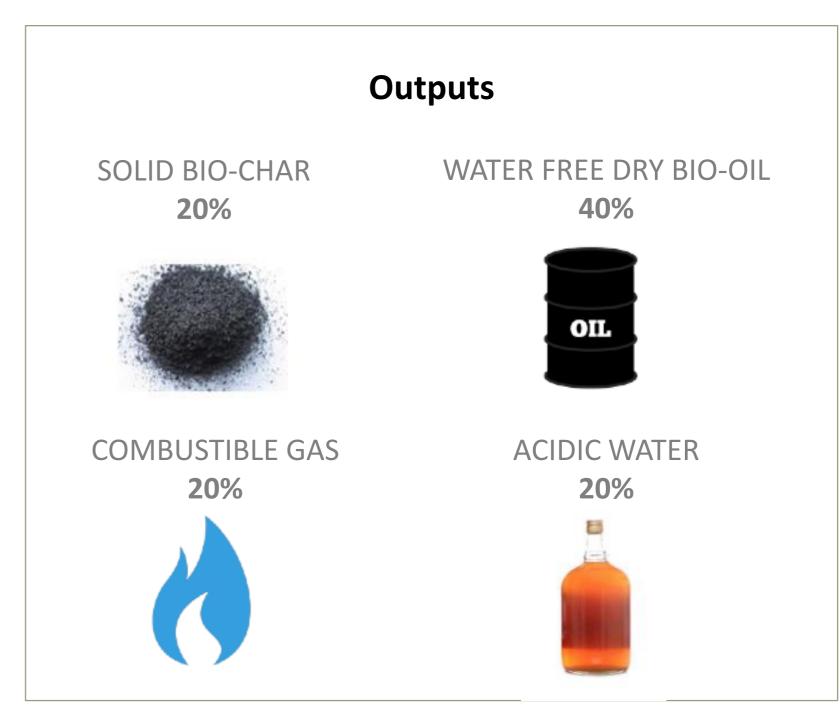


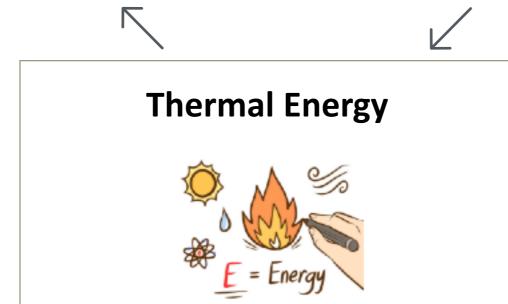
The Story Turning Waste into Value, through Pyrolysis Technology Please see Appendix #1: History of Bio-Techfar Technology for more information on the history of the professors and the invention. **Private & Confidential**

Pyrolysis Process





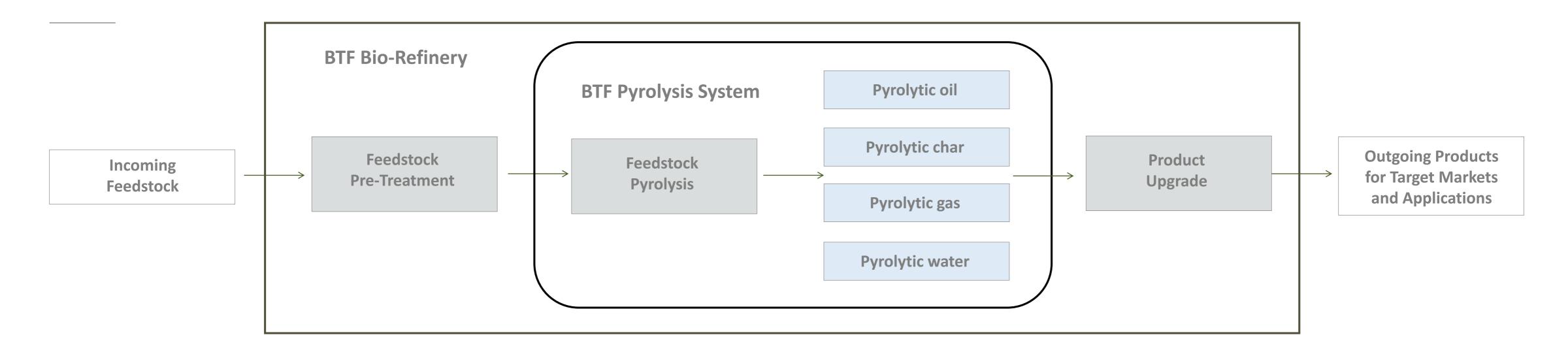




Combusted Gas used to Power Process



Pyrolysis Conversion Technology



- Thermochemical decomposition of organic material at 250° C to 700°C in absence of halogen
- Simultaneous irreversible change of chemical composition and physical phase
- Innovative mechanically fluidized reactor to convert biomass, differentiated from industry competitors
- Pyrolysis Yields vary based on feedstock, gas residence time and temperature.



See Appendix #2: Average Pyrolytic Product Yields for more information

BT-100 Current Technology (100 Kg/Hr.)

Quench Condensate Tower Drum Cyclone Oil Drum Reactor Induction Heater



Key Features of Bio-Techfar Technology

- Compact Modular Mobile Skid Mounted BT-500 contained within Two 40' Containers to be located at source of Feedstock Supply
- Designed & Engineered for Continuous Processing
- Technology operating conditions can be adjusted by to meet product manufacturing
- Dry Pyrolytic Oil Low in solids, stable, low water content in Oil, neutral pH and high amounts of oxygen in oil (Wood Feedstocks)
- Maximize Dry Pyrolytic oil production with a Higher Heating Value (HHV) of 37 MJ/Kg compared to competitors at 17 MJ/Kg
- BTF Reactor technology is proprietary and allows us to differentiate from competitors



Unique Value Proposition

High Value Dry Bio-oil Competing Easy to Main Features Compact Pure Char yield % Technology Oil Operate **✓** 40 BTF - MFR Mechanical Fluidized Reactor Circulating fluidized Finely ground particles and circulating sand bed bed Bubbling fluidized Finely ground particles and stationary sand bed bed Hot screw with steel balls heat carrier Auger reactor Spinning cone with sand heat carrier Spinning cone Friction of biomass on hot rotating Ablative pyrolysis plate Rotating kiln

^{*} Note: Competitor technologies produce Wet Bio Oil that is costly to eliminate water content from mixture and results in an inferior product.



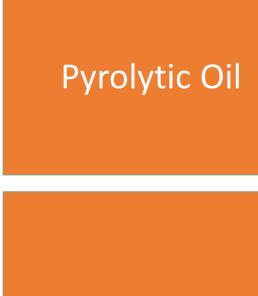
From Waste to Marketable Products

Walnut Shells Wood Chips & Residue **Distillers Grains** Digestate **Plastics** Pulp & Paper **BIOMASS** Sludge **Industrial Waste Dedicated Grown** Biomass Nut & Fruit Residue











Pyrolytic Gas

Pyrolytic Water

Carbon Credits

- **Energy Conversion**
- **Anti-Oxidants**
- Fertilizers and Pesticides
- **Industrial Resins**
- **Energy Conversion**
- Soil Amendment
- **Industrial Materials**
- Activated Carbon
- **Animal Feed**

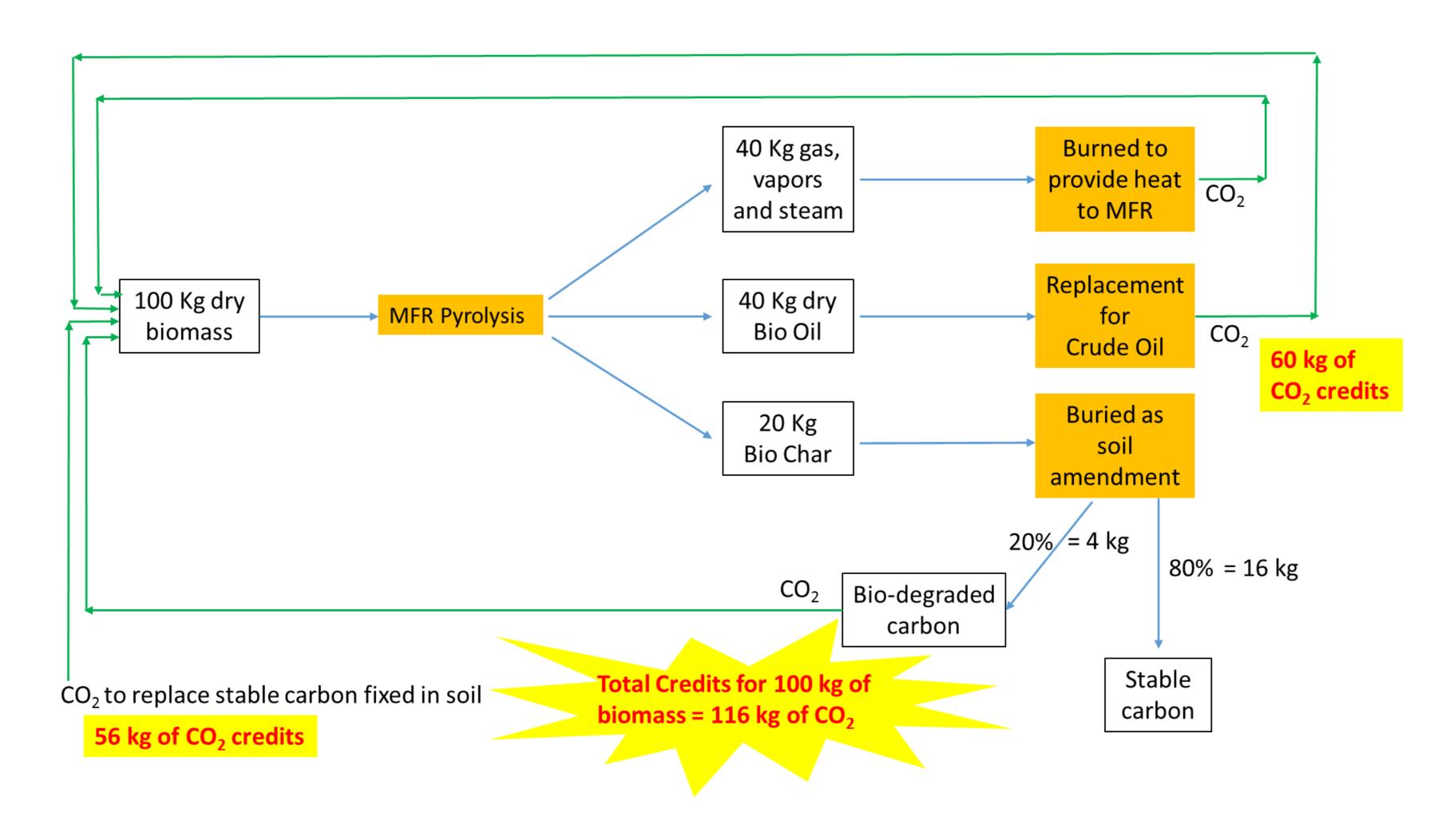
Energy Conversion

- Agricultural Fertilizer
- Pesticides
- Catalyst Properties for AD

Registered and to be sold



Carbon Credits from Pyrolysis



Prices range from \$10 USD/MT to over \$140 USD/MT. See *Document #1: International Carbon Credits Analysis Pricing*.



Strategic Organization Divisions

Biomass Suppliers Business Development Sales & Marketing

Appendix # 6: Sales & Marketing Development

Applications & Buyers for Pyrolytic Products

Appendix #4: Strategic Partners – Products to Market



R&D Product Development for Pyrolytic Products

Appendix #7: Product Development Partners

Technology Manufacturing, Technical Support & Maintenance

Appendix #5: Strategic Partners – Manufacturing



Appendix #3: Strategic Organization Divisions



Some Feedstocks of Interest

Walnut Shells



Wood Waste



Wood & Bark Residue



Pineapple Residue



King Grass



Solid Recovered Fuel



Purpose Grown Crop, Miscanthus



Railway Ties



Dried Distillers Grain & Corn



Digestate from Organics Recycling



Plantation Residues





Private & Confidential

Pyrolytic Product Market Applications

- Investment in the validation of pyrolytic product applications is required
- Provides confidence to BTF Bio Refinery customers of markets for products
- Output applications can be specific based on feedstock or general across multiple feedstocks. Some examples include:

Bio Char in Agriculture
Applications

Most Feedstocks



Industrial Resins for Lumber
Building Materials

Most Feedstocks



Power Generation

All Feedstocks



See Appendix #9: Pyrolytic Product Applications for details on costs related to validating products from walnut shells, wood residue, Distillers Grains and Digestate. See Appendix #10: Pyrolysis Product Validation Partners. See Appendix #11: Values of Pyrolysis Products



Wood Residue

Química del Nalón







See Appendix #12: Bio Refinery Revenues & Expenses - Wood Chips & Bark for more information.

Current Situation:

- Industrial Quimica del Nalon paid for BT-Lab testing of Eucalyptus woodchips.
- Working with BTF for 2 years to evaluate the technology

Industrial Quimica del Nalon:

• Nalon will continue research by buying a BT-500 for their facility in Spain.

Committed to:

• Buy pyrolysis oil from BTF or will purchase a BTF Bio Refinery Unit to integrate with their plant

Bark/Wood Chip Yields:

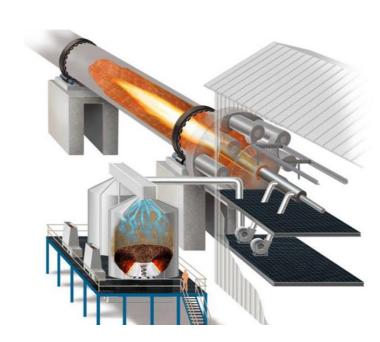
- Pyrolytic Oil 30% Pyrolytic Gas 20%
- Pyrolytic Char 30% Pyrolytic Water 20%



Wood & Bark Residue

Domtar





See Appendix #12: Bio Refinery Revenues & Expenses - Wood Chips & Bark for more information.

Current Situation:

- Domtar has contracted BTF to fulfill its obligation under its
 Phase 1 of the Energy Innovations Program
- BTF will be producing 20 L of Dry Pyrolysis Oil for combustion testing at U of T

Domtar Inc.:

- A successful Phase 1 POC, In Phase 2 of the Project Domtar will now purchase a BT-500 for operation at their plant in Windsor, Quebec.
- BT-500 out puts will be tested for combustion of pyrolysis oil in their Lime Kiln.

Bark/Wood Chip Yields:

- Pyrolytic Oil 30% Pyrolytic Gas 20%
- Pyrolytic Char 30% Pyrolytic Water 20%



Walnut Shells









See Appendix #13: Bio Refinery Revenues & Expenses – Walnut Shells for more information.

Current Situation:

- BT-Lab testing on walnut shells completed.
- Walnut Shells are composed of 50%
- Lignin produce oils that are high in phenolics for resins. Walnut char creates some of the best activated carbons.

California/Chilean Walnut Producers:

• Walnut growers have expressed interest to supply feedstock and participate in BTF Bio Refinery projects.

Walnut Shell Yields:

- Pyrolytic Oil 40% Pyrolytic Gas 15%
- Pyrolytic Char 35% Pyrolytic Water 10%



Dried Distillers Grains (DDG)









See *Appendix #14: Bio Refinery Revenues & Expenses – DDG* for more information.

Current Situation:

- All current operating data from the BT-100 including gas emissions testing are from processing DDG
- A market opportunity exists to process Wet Distillers grains to extract protein for animals and humans

Greenfield Global Inc:

- Analytics of pyrolysis products show opportunity to extract antioxidants for animal feed
- Greenfield is awaiting 24/7 validation to purchase a BTF Bio Refinery Plant

DDGS Yields:

- Pyrolytic Oil 35% Pyrolytic Gas 20%
- Pyrolytic Char 25% Pyrolytic Water 20%



Digestate from SSO





See *Appendix #15: Bio Refinery Revenues & Expenses – Digestate* for more information.

See *Appendix #16: Bio-Techfar R & D Project* for information on our Project Advanced Carbons from Biochar: Finding Further Value

Current Situation:

Greenfield's Clean Technology Team has reviewed the BT-500 extensively

Greenfield Global:

Signed an LOI to purchase a 3 BT-500 Pyrolysis Bio Refinery to process 12,000 MT of Digestate in Varennes, Quebec

Digestate Yields:

- Pyrolytic Oil 25% Pyrolytic Gas 10%
- Pyrolytic Char 35% Pyrolytic Water 25%





Moisture Reduction Technology

from our Innovative ECO Care Partner

Global & Domestic Markets

Railway Ties

North America

- CN & CP Rail Annually generate 340,000 MT of Ties and require 85 BT-500 units.
- In North America there 900,000 MT per year ÷ 4,000 MT = 225 Units

See *Appendix #18* for info on Railway Ties

Municipal Wood Waste



Global

Wood waste is available from Pallets, Trees & Construction. Estimates that each resident produces 30 Kg per year

N.A 17,400,000 MT \div 4,000 MT = 4,350 Units Europe 22,200,000 MT \div 4,000 MT = 5,550 Units

King Grass



North, Central South America

Grows abundantly in Moderate to Warm climates and can be planted 3 – 4 times per year.

Biomass can be grown at \$40 USD per Dry MT.

The # of Units is ultimately unlimited

Digestate



Ontario / Quebec

Greenfield Global will double production of Digestate from the Varennes Plant to 24,000 MT per year.

52,400 ÷ 4,000 MT = 13 Units

See *Appendix #17* for a list of other Digestate plants that use the same technology. *Note: Digestate is widely available from Agriculture Waste Streams in large volumes*



Global & Domestic Markets

Dried Distillers Grains



Ontario

Estimated that there are about 1,000,000 MT of DDGS

See Appendix #19.

• 1,000,000 MT ÷ 4,000 MT = 250 Units

Stock Piled - Bark & Wood



Canada

Natural Resources Canada estimates 2,675,000 BD MT of Hog Fuel/Bark Residues stock piled.

See Appendix #20.

• 845,000 MT ÷ 4,000 MT = 211 Units

Walnuts Shells



Global

There are about 1,145,000 MT of Walnut Shells globally and 102,000 MT from US.

See *Appendix #21*.

- 102,000 MT ÷ 4,000 MT = 25 Units
- 1,145,000 MT ÷ 4,000 MT = 286 Units

Bark & Wood Residue



Canada

Natural Resources Canada estimates about 2,721,500 BD MT of Bark & Wood Residues in Canada annually.

See Appendix #20.

• 2,721,500 MT \div 4,000 MT = 680 Units



Bio-Techfar Evaluation & Forward Looking Statements

Market Segment		BT-500 Installations					
		2020	2021	2022	2023	Total	
Railway Ties - Canada & North America			6	3	6	15	
Digestate from Source Separated Organics Plants - Ontario & Quebec		3				3	
Forestry Residues - Canada		2			3	5	
Lumber Mill Residues - Canada		3			3	6	
Paint Sludge from Exterior Paint Shop Global			1			1	
Pulp & Paper Sludges - North America & Chile				3	3	6	
Dried Distillers Grains Soluble DDGS - North America			3	3	3	9	
Walnut Shells - USA & Global		2		3		5	
Solid Recovered Fuel (SRF) from Municipal Solid Waste (MSW) Global				3	3	6	
Pineapple Waste - Costa Rica			3		3	6	
Purpose Grown Crop - King Grass North, South & Central America				3	3	6	
Purpose Grown Crop - Hemp North America			3	3	6	12	
Sugar Cane Bagasse - Global	2					2	
Orchard Trimmings - North America		3		3		6	
Municipal Wood Waste - Global				3		3	
Mushroom Substrate - Global			3	0	3	6	
	2	13	19	27	36	97	

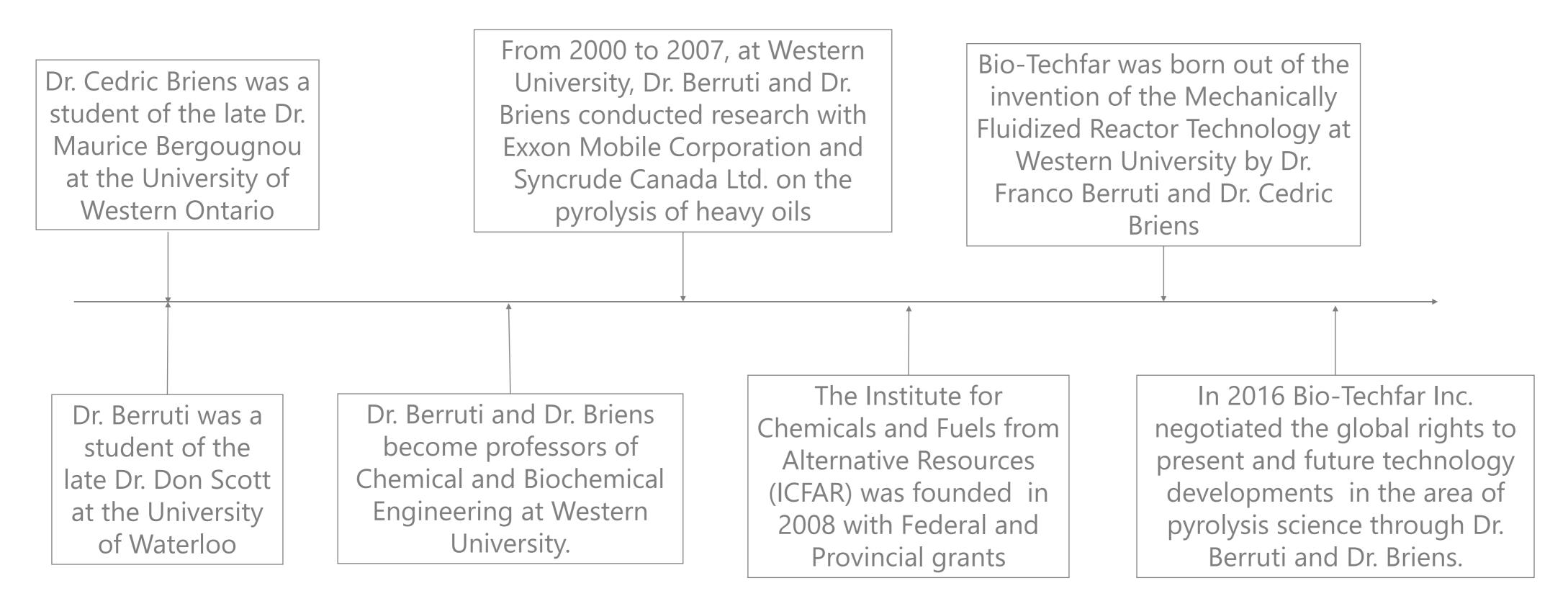
Please see Document #19 Bio-Techfar Market Segments - BT-500 Licensing for a detailed description of each market opportunity.





List of Documents Available for Review for Investment Due Diligence

Appendix #1: History of Bio-Techfar Technology



CV's for professors and Technical experts available in *Appendix 2*.



Appendix #2: Technical Staff CV's

- 1. Dr. Franco Berruti professor of Chemical and Biochemical Engineering at University of Western Ontario
- 2. Dr. Cedric Briens professor of Chemical and Biochemical Engineering at University of Western Ontario
- 3. Expertise summary of the late Dr. Don Scott Professor and Chairman of the Chemical Engineering Department at the University of Waterloo & and the late Dr. Maurice Bergougnou Professor Emeritus of Chemical Engineering at the University of Western Ontario
- 4. Dr. Paul Ege Phd Chemical Engineer, Process and Fluidization
- 5. Dr. Bryan Koivisto professor of Chemistry and Biology at Ryerson University
- 6. Dr. Alex Berlin PhD in Chemistry, Biotechnology and Catalysis, Department of Chemical Enzymology, Faculty of Chemistry, Moscow State University
- 7. Vera Maximenko Gutman M.Sc. in Biology, Faculty of Biology, Tver State University (TSU), Tver, Russia, 1994-1995
- 8. Stone Oil & Gas Mississauga, ON Staff Technical CV's December 2016



Appendix #2: Average Pyrolytic Product Yields

Feedstock Input	Pyrolysis Gas	Pyrolysis Water	Pyrolysis Char	Pyrolysis Oil
Wood Chips	29%	21%	20%	30%
Walnut Shells*	25%	NR	30%	45%
Digestate (SSO)*	26%	29%	38%	7%
Distillers Grains	20%	20%	25%	35%
Chicken Waste	36%	NR	41%	23%
Water Treat Sludge	21%	20%	30%	29%
Mushroom Substrate	22%	NR	43%	35%
Miscanthus	55%	NR	25%	35%
SRF Plastic*	50%	0%	10%	40%
Railway Ties*	27%	14%	26%	33%

Note: * - Lab testing has been completed on Wood Chips, SRF Plastic, Railway Ties, Walnut Shells and Digestate. NR – Some research studies do not report the production of pyrolytic water



Appendix #3: Strategic Organization Divisions

Biomass Suppliers
Business Development Sales & Marketing







BTF Applications & Buyers for Pyrolytic Products







R&D Product Development for Pyrolytic Products









BTF Technology Manufacturing,
Technical Support &
Maintenance











Bio-Techfar Inc.

Appendix #4: Strategic Partners - Manufacturing



<u>Linear – Barrie, Canada - www.lineartransfer.com – BTF Manufacturing Partner</u>

Linear Transfer Automation Inc. is a leading supplier of transfer systems, de-stack feeders, tandem lines and tooling and has complete in-house capability for mechanical and controls design, assembly, testing, installations, and training. Linear is part of The Flodraulic Group of companies - www.flodraulic.com and serves the automotive, appliance, HVAC, outdoor power, equipment and green technology sectors. Linear has established a wide customer base extending throughout Canada, United States, Mexico, Brazil and China. Their manufacturing facility is located in Barrie, Ontario and their maintenance support systems provide continuous and reliable coverage ensuring customer satisfaction.



<u>Saalasti Ltd. - Finland – www.saalasti.fi</u> - BTF Pre-Treatment Specialist & Supplier

Saalasti is a completely family owned company, which was incorporated in 1945 and is a recognized experts and one of the world's leading manufacturers of innovative heavy-duty bioenergy machinery and wood based biomass processing machines. With nearly 70 years' experience in heavy machinery and over 30 years' experience in bioenergy products they guarantee reliability, satisfaction and easiness to all customers. Their machines are used all over the world, mostly in big power plants and wood rooms. Their main products are stationary forest-based biomass chippers, crushers, cutters and bark dewatering presses. In addition they deliver entire biomass processing stations.



Zeton Inc. – Canada & The Netherlands - www.zeton.com – BTF Engineering Partner

Is the world's leading designer and builder of innovative lab scale systems, pilot/demonstration plants and small modular production plants. Zeton has experience working with the following industries worldwide: Oil & Gas, Polymers, Chemicals, Gas to Liquids/Synfuels, Bioenergy and Biofuels, Pharma/Biotech, Fine Chemicals, Environmental and Sustainable Chemistry.



<u>Appendix #5: Strategic Partners – Products to Market</u>



Stone Oil & Gas - Toronto, Canada - www.stoneoilandgas.com

STONE Oil & Gas engineering and project services range from consulting and feasibility studies of small projects to comprehensive project services for large engineering, procurement and construction (EPC) projects. They provide support for green and brown field sites, retrofits, revamps, and plants improvements and expansions. STONE Oil & Gas services also include project management consulting (PMC) and owner engineering support.



Western University – London, Canada - www.icfar.ca

ICFAR is a 20 000-square-foot research center within the Faculty of Engineering at The University of Western Ontario. ICFAR was established in January 2008 as a leader in the development of technologies and processes for the production of chemicals and fuels from alternative, with an emphasis on green engineering and environmental sustainability.



A & L Laboratories - London, Canada - www.alcanada.com

A & L is one of Canada's largest Agricultural and Environmental Laboratories specializing in soil, plant tissue, fertilizer and water testing. For over 30 years A & L has provided reliable, comprehensive, effective services for analytical testing including a variety of professionals in the fields of chemistry, agronomy, and environmental science.



Appendix # 6: Sales & Marketing Development



























Palma Tica























































Appendix #7: Product Development Partners































Appendix #11: Values & Applications of Pyrolysis Products

Pyrolysis Char

- 1. Agriculture to amend soil, remediate soil, fertilizer, pesticides and microbe carrier to improve production ~ \$700 \$1,500 USD/MT
- 2. Additive to Animal Feed & Pet Food to improve health, gut flora and reduce diseases and mortality ~ \$1,000 to \$1,500 USD/MT
- 3. Advanced Carbons, Activated Carbon, Carbon Nano-Tubes, Buckie Balls. Specialized carbons pricing can range from ~ \$1,500 to \$30,000 USD/MT
- 4. Waste Water/Air Filtration systems ~ \$800 to \$1,500 USD/MT
- 5. Pyrolytic Char & Activated Carbon for Medical Applications ~ \$1,000 + USD/MT
- 6. Electronic Particles, Super Capacitors, Lithium Ion Batteries ~ \$1,000 to \$5,000 USD/MT

Pyrolysis Oil

- 1. Power Generation testing in Reciprocating Engines ~ \$500 USD/MT
- 2. Catalyst in Manufacturing of Carbon Anodes for Aluminum Industry ~ \$800 \$1,500 USD/MT
- 3. Replacement for Phenol and Fillers in Industrial Resins in applications such as plywood manufacturing, polymers and plastics ~ \$1,000 \$1,500 USD/MT
- 4. Anti-Oxidants isolation for Pet Food & Livestock Feed Additive ~ \$1,600 to \$3,000 USD/MT
- 5. Fertilizer and Pesticide replacement in Agriculture ~ \$800 \$1,200 USD/MT
- 6. Refineries Feedstock Oil refining, chemical extraction and splash blending with Diesel ~ \$700 to \$800 USD/MT



Appendix #12: Bio Refinery Revenues & Expenses - Wood Chips & Bark

Detailed Cost & Revenue Summary				
	Description	Price/MT	# of MT	\$ Per Year
Wood Chips & Bark	Cost of Feedstock	\$25	12,000	\$300,000
Operating Expenses	Operating Costs & Salaries	\$202	12,000	\$2,424,000
Pyrolysis Water	Yield 20% - Fertilizer/Bio Gas	\$150	2,400	\$360,000
Pyrolysis Char	Yield 30% - Bio Char/Activated Carbon	\$650	3,600	\$2,340,000
Pyrolysis Gas	Yield 20% - Combustion Gas	\$220	2,400	\$528,000
Pyrolysis Oil	Yield 30% - Power/Lime Kiln Fuel/Crude	\$750	3,600	\$2,700,000
		Total R	evenue	\$5,928,000
		Total	Costs	\$2,724,000
		Revenue	e per MT	\$494
		Net Earnir	ngs per MT	\$267





<u>Appendix #13: Bio Refinery Revenues & Expenses – Walnut Shells</u>

Detailed Cost & Revenue Summary					
	Description	Price/MT	# of MT	\$ Per Year	
Walnut Shells	Cost of Feedstock	\$40	12,000	\$480,000	
Operating Expenses	Operating Costs & Salaries	\$162	12,000	\$1,944,000	
Pyrolysis Water	Yield 10% - Fertilizer/Bio Gas/Chemicals	\$233	1,200	\$279,600	
Pyrolysis Char	Yield 35% - Activated Carbon Feedstock	\$832	4,200	\$3,494,400	
Pyrolysis Gas	Yield 15% - Combustion Gas	\$150	1,800	\$270,000	
Pyrolysis Oil	Yield 40% - Phenol & Resins / Crude	\$865	4,800	\$4,152,000	
		Total R	evenue	\$8,195,600	
		Total	Costs	\$2,424,000	
		Revenue	e per MT	\$683	
		Net Earnir	ngs per MT	\$481	

All Currency in CAD



Appendix #14: Bio Refinery Revenues & Expenses – DDG

Detailed Cost & Revenue Summary					
	Description	Price/MT	# of MT	\$ Per Year	
DDG	Cost of Feedstock	\$180	12,000	\$2,160,000	
Operating Expenses	Operating Costs & Salaries	\$155	12,000	\$1,860,000	
Pyrolysis Water	Yield 20% - Fertilizer/Bio Gas/Chemicals	\$200	2,400	\$480,000	
Pyrolysis Char	Yield 25% - Animal Feed/Fertilizer	\$850	3,000	\$2,550,000	
Pyrolysis Gas	Yield 20% - Combustion Gas	\$175	2,400	\$420,000	
Pyrolysis Oil	Yield 35% - Fertilizer / Combustion	\$900	4,200	\$3,780,000	
		Total R	evenue	\$7,230,000	
		Total	Costs	\$4,020,000	
		Revenue	e per MT	\$602	
		Net Earnir	ngs per MT	\$267	

All Currency in CAD



Appendix #15: Bio Refinery Revenues & Expenses - Digestate

Detailed Cost & Revenue Summary				
	Description	Price/MT	# of MT	\$ Per Year
Digestate	Cost of Feedstock	\$0	12,000	\$0
Operating Expenses	Operating Costs & Salaries	\$220	12,000	\$2,640,00
Pyrolysis Water	Yield 25% - Fertilizer/Bio Gas/Chemicals	\$100	3,000	\$300,000
Pyrolysis Char	Yield 35% - Activated Carbon	\$625	4,200	\$2,625,00
Pyrolysis Gas	Yield 20% - Combustion Gas	\$165	2,400	\$396,000
Pyrolysis Oil	Yield 20% - Phenol & Resins / Crude	\$800	2,400	\$1,920,00
		Total R	evenue	\$5,241,00
		Total Costs Revenue per MT		\$2,640,00
				\$437

All Currency in CAD

\$217

Net Earnings per MT

