

Eco - Fuel Technology Ltd.



Business Project Plan



THE PROBLEM:

Of the 3.0 million Tonnes of plastic, less than 11 per cent of Canada’s plastics get recycled. The rest end up in our landfills, lakes, parks and oceans, destroying ecosystems and leaching toxic chemicals. We can’t rely on businesses to “do the right thing” voluntarily, so long as making new plastic from fossil resources is cheap, the cost of collecting and recycling plastic is high, and dumping plastic into the environment is “free”.

Attempts to counter the plastic ‘catastrophe’ included burning them, sending to landfills, mechanical recycling (sorting and mixing with virgin plastic to make products) and chemical recycling. All proved to be unsatisfactory due to many factors, some political but most did not make a business sense.

The end-of-life scrap tires represent an important issue notably for the implications they hold for public health and environment. And since tires are produced in very large quantities, this is indeed a problem of enormous scale.

EFT’s pyrolysis and thermolysis technologies can resolve both problems, efficiently, environmentally and economically. Waste Streams To Fuel is the answer to eradicate waste plastic and end of life tires.



SOLUTION

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The Canadian Waste Plastic & Waste Tire to Fuel conversion opportunity is over \$3.0 Billion per year!

Cost to produce diesel from Waste Plastic is \$0.60/liter; makes the ROI on a WP2F Reactor less than 24 months.

EFT is currently in negotiations with a large materials recycler. Our supply agreement will provide EFT with 50 Tonnes of plastic per day in 2024, scaling to over a 100 Tonnes per day by 2025, producing over 270.0 M/liters per year of high-grade diesel. Our goal is to Build & manage these reactors on behalf of companies who would be interested in purchasing a Reactor to reduce the cost of fuel in their operations. Such as Trucking companies, Farmer Cooperatives, or Community Organizations.

EFT sees tremendous potential the Renewable Fuel Industry and has licensed various technologies in order to process various waste streams into fuel, reducing the demand of fossil fuels. Recycling is moving from a linear economy to a circular economy! One that at the end of the day the waste stream is eliminated and not just moved into landfills.

EFT's Plastic to Fuel Solution

- ▶ Benefits of producing diesel fuel from plastic
- ▶ In May 2017, the conclusions of an Argonne National Laboratory study were made public that compared the production of diesel fuel from plastic to producing it from crude oil. The environmental benefits were dramatic.
 - ▶ Reduce greenhouse gasses by 45%
 - ▶ Reduce water consumption by 58%
 - ▶ Reduce traditional energy usage by 96%
 - ▶ Together, we can clean up the oceans and limit waste in our landfills!

Benefits of EFT-ATCD system (continued)

Fuel - extends usefulness of plastic

Stop at naphtha, that can be a feedstock for ethylene and propylene, a circular chemistry to plastic recycling

Use of process taught in US 9505901 → Convert PE or PP directly to Ethylene and Propylene (avoiding the intermediary step through naphtha)

Future directions may take us further, generating Hydrogen and elemental carbon (BASF chemistry), towards a truly green answer to waste plastic problem

Current Waste Management of Plastic

- ▶ Plastic is primarily landfilled, recycled, or incinerated—each of which produces greenhouse gas emissions.
- ▶ Recycling has a moderate emissions profile but displaces new virgin plastic on the market, making it advantageous from an emissions perspective.
- ▶ Incineration leads to extremely high emissions and is the primary driver of emissions from plastic waste.
- ▶ Globally, the use of incineration in plastic waste management is poised to grow dramatically in the coming decades.
- ▶ Landfilling emits the least greenhouse gases on an absolute level, although it presents significant other risks.
- ▶ EFT Technologies eliminates these high emissions due to careful ACTD closed loop system Design

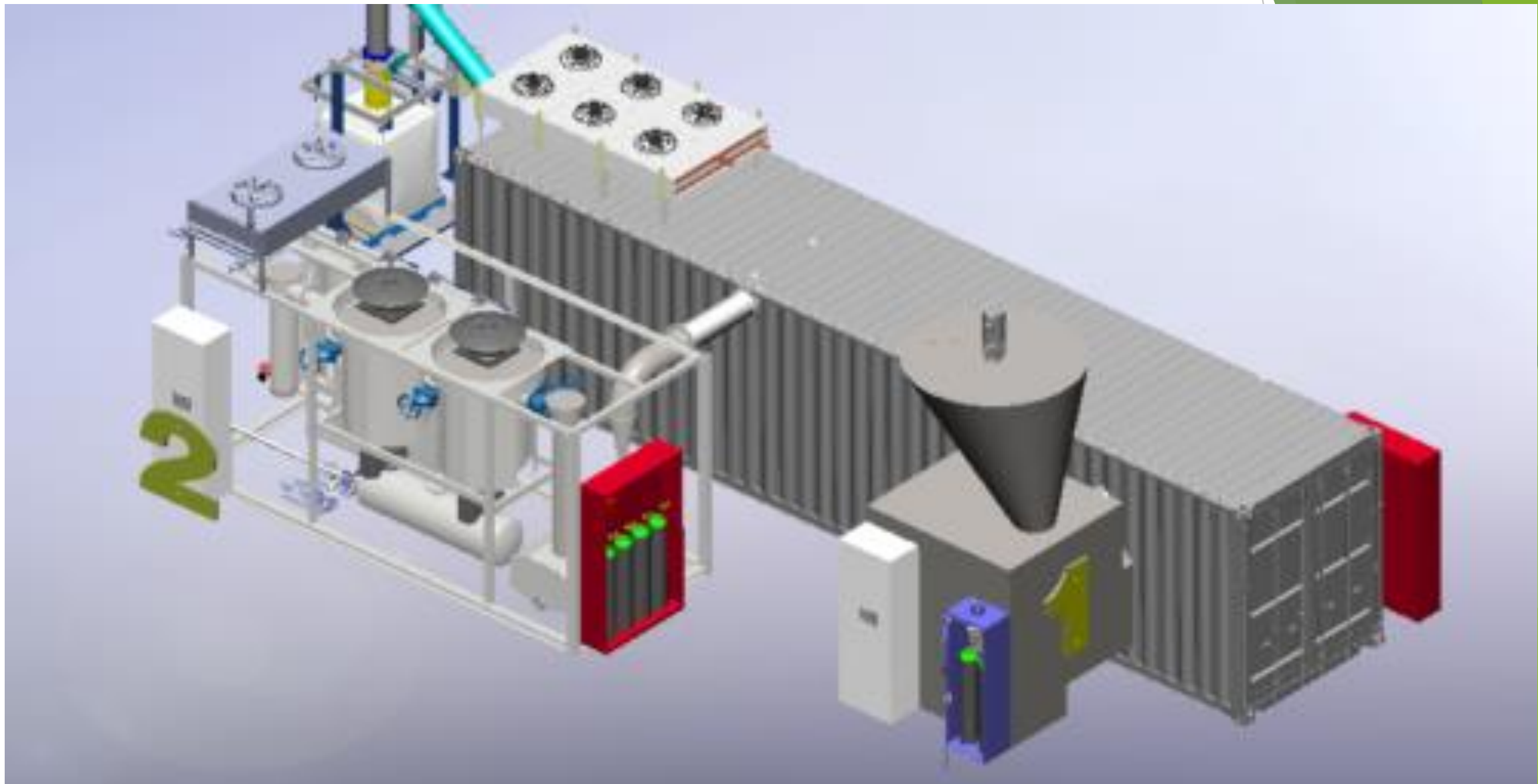
Plastic To
Fuel
Technology



Eco Fuel Technology

- ▶ Eco Fuel technology has developed a solution to profitably convert plastics into a valuable fuel in an environmentally sound process, capturing the energy content while diverting plastics from landfills or oceans.
- ▶ Technology :-
 - ▶ Approved Patents - (Valued in excess of \$10 Million)
 - ▶ 3 Demo units in operation, a 1Tonne per day unit (batch, Chennai) and a 1 Ton per day unit (continuous process, U of I , Urbana-Champaign)
 - ▶ Scaling 2-ton Demo systems to core 5-ton modular system in process.
 - ▶ 20 Ton System in development and will require qty 4 modular 5-ton systems
- ▶ Self Funded
 - ▶ \$6.5 Million Development Cost as of date
- ▶ Estimated Assets :- \$20 Million
 - ▶ Patent & IP Valuation
- ▶ No Liabilities

EFT Waste Plastic To Fuel-5-20-ton System



EFT Waste Plastic Reactor Technology

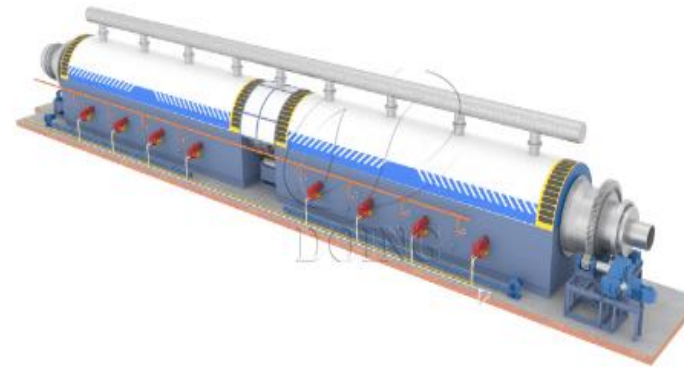
- ▶ Catalyzed - US patents 7531703, 9802184, 9505901, Canadian patent 2860258
- ▶ Specificity - Can be tuned to produce mainly diesel or gasoline or naphtha or lubricant
- ▶ Continuous process - more efficient than batch
- ▶ Small footprint - a 20 tons per day can be mounted in a 4 x 20 ft x 8 ft shipping containers. Larger capacities achieved by adding more modules)
- ▶ ROI can be as low as 2 -3 years (US) based on selected discarded plastics

TIRE RECYCLING



EFT PYROLYSIS REACTOR FOR TIRES TO FUEL CONVERSION

Item	Details	
Raw Materials	Waste rubber materials, waste tyre/tires, waste plastic, waste oil sludge, coal tar, aluminum plastic composite materials, medical waste, MSW(municipal solid waste), etc.	
Final Products	Fuel oil, carbon black, steel wire, combustible gas, etc.	
Model	Model	Processing Capacity
	DY-C-15	15 tons/day
	DY-C-20	20 tons/day
	DY-C-30	30 tons/day
	DY-C-50	50 tons/day (Support to customize lager capacity)
Machine Type	Continuous type pyrolysis machine	
Reactor Material	Q345R/Q245R/ boiler plate/304/316 stainless steel	
Thickness	14/16/18/20mm	
Heating Type	Indirect heating	
Heating Fuel	LPG, fuel oil, syn-gas, natural gas	
Cooling Type	Circulating water cooling	
Floor Area	Take a 50-ton machine as an example, 1200 square meters (length: 70 meters, width 17.5 meters)	
Required Workers	1-2 workers per shift	
Note	Multi-reactor design to ensure efficient pyrolysis effect	



INPUT/OUTPUT



▶ INPUT - WASTE TIRES;
WASTE ALUMINUM, WASTE
PLASTIC, WASTE RUBBER,
WASTE OIL SLUDGE.

▶ ,



▶ OUTPUT - FUEL OIL,
ALUINUM INGOT, CARBON
BLACK (rCB), SYN-GAS,
STEEL WIRE

EFT Economics

- ▶ 10 lbs of plastic processed thru ATCD on low side is 1.07 gallons and high side 1.58 gallons (80 % diesel 20 % gasoline)
- ▶ Mobile System to 2 tons per day: Development cost of \$550K & Operational in 4 months. Portable system will produce 400 gallons of fuel daily. (80% diesel 20% gasoline)
- ▶ 5 ton per day modular system will produce 1000 gallons of fuel daily with dry and std contamination feedstock (80 % diesel 20 % gasoline) -24/7 operation 360 days per year
- ▶ Small footprint - a 5-tons per day system can be mounted in a 4 x 40 ft x 8 ft shipping containers. Larger capacities achieved by adding more modules)
- ▶ ROI can be as low as 1 thru 3 years (US) based quality of feedstock and offtake agreement of the fuel
- ▶ Initial 5-ton module will cost \$3.0 Million

Emerging Fuel Technology Inc. Management Team

Romeo Prescott - President/Director

Dr. Swaminathan Ramesh - Director of Technology

Haz Patel - Director of Engineering

Micheial Sosin -Legal

Fabrication Partners:

Morrison USA - Fabrication/Testng /Export

Wessex Industries USA -

5-year Financial Forecasts





Key impacts on financial returns

Main variables having major impacts on the financial returns of an EFT plant:-

1. Addressable volume and quality of plastic waste with long term JV/Partner/Contract to meet minimum 25 to 30 ton per day system <\$0.1 with limited expense on Real Estate
2. The tipping fees and preparation of selected plastics
3. The catalyst system
4. The capital and operating expenditures
5. The Offtake agreement of revenues from the sale of the produced Fuel
6. The potential to co-locate a EFT plant with a waste plastic sorting facility with ability to expand beyond modular size of 5-ton system per day .

EFT's Waste Plastic to Fuel Solution

EFT PTF-2

- ▶ Processing 2 Tons per day waste plastic producing 400 gallons of transportation grade diesel Suitable for farm operators, 400 Gallons of transportation grade diesel PER DAY @ A COST OF \$0.85/LITER; Excluded -Carbon Credits & tax ruling regarding road taxes. COST TO BUILD -\$550K

EFT PTF-5

Processing 5 Tons per day (Core Modular Unit) waste plastic producing 1000 gallons of transportation grade diesel PER DAY @ A COST OF \$0.85/LITER Carbon Credits & a tax ruling regarding road taxes. COST TO BUILD - \$3.0 MILLION.

Waste Plastic to Fuel contd...

EFT PTF-20

- ▶ Processing 20 Tons per day (Core Modular Unit 5 Tons per Day QTY 4) waste plastic producing 4000 gallons of transportation grade diesel PER DAY @ A COST OF \$0.85/LITER; Carbon Credits & a tax ruling regarding road taxes. COST TO BUILD -\$6 Million
- ▶ We have confirmed if the WP Reactors are owned by the end user, then there is no road tax or carbon taxes.....
- ▶ If units are operated with the intent to sell the fuel or sell as a fuel additive, then the company would require a license to do a wholesale business model.
- ▶ The company intends to pursue both go to market strategies and will be applying for a fuel distribution license.

Feedstock Processing & Fuel Production

Process Model	Duration 24/7 operation	Feedstock Processing (Tons)	Diesel Production (Gallons)
PTF-2	Daily	2	400
	Monthly	60	12,000
	Yearly	720	144,000
PTF-5	Daily	5	1,000
	Monthly	150	30,000
	Yearly	1,800	360,000
PTF-20	Daily	20	4,000
	Monthly	600	120,000
	Yearly	7,200	1,440,000

	2 Ton per Day DEMO Unit	5 Ton per Day	Modular 5 Ton Qty 4 (20 Ton per Day)
<i>Below Data needs to be verified after site/feedstock study</i>			
Monthly Feedstock Processing (tons per month)	60 Ton	150	600
Yearly Feedstock Processing (ton per year)	720	1800	7200
Diesal Production (gallons per Year)	144,000	360,000	1,440,000
Revenue Projection for each model:-	PTF-2	PTF-5	PTF-20
EFT P2D Technology System Cost	\$550,000	\$3,000,000	\$6,000,000
Monthly Revenue from Diesal Production @\$6 per gallon	\$72,000	\$180,000	\$720,000
Yearly Revenue	\$864,000	\$2,160,000	\$8,640,000
Opex :- (NO PAYMENTS FOR FEEDSTOCK)			
Feedstock (no cost)	\$0	\$0	\$0
Catalyst cost per Year @ 40 cents per gallon	\$57,600	\$144,000	\$576,000
Manpower per Year	\$285,120	\$786,000	\$1,857,120
Utility /Water 150 KW @10 cents	\$52,400	\$131,000	\$525,600
Misc/Insurance/Etc	\$50,000	\$125,000	\$500,000
Total Opex	\$445,120	\$1,186,000	\$3,458,720
Gross Profit /Yr	\$418,880	\$974,000	\$5,181,280
Payback yrs/ROI	1.3/76%	3.1/32%	1.3/84%

5 Year Financial Projections

PTF-2	Yr1	Yr2	Yr3	Yr4	Yr5
PTF-2 Revenue	\$432,000	\$864,000	\$864,000	\$864,000	\$864,000
PTF-2 Opex	\$222,560	\$445,120	\$445,120	\$445,120	\$445,120
Gross Profit	\$209,440	\$418,880	\$418,880	\$418,880	\$418,880
IRR	38%	76%	76%	76%	76%








PTF-5	Yr1	Yr2	Yr3	Yr4	Yr5
PTF-5 Revenue	\$0	\$1,620,000	\$2,160,000	\$2,160,000	\$2,160,000
PTF-5 Opex	\$0	\$889,500	\$1,186,000	\$1,186,000	\$1,186,000
Gross Profit	\$0	\$730,500	\$974,000	\$974,000	\$974,000
IRR		24%	32%	32%	32%

PTF-20	Yr1	Yr2	Yr3	Yr4	Yr5
PTF-5 Revenue	\$0	\$0	\$2,160,000	\$8,640,000	\$8,640,000
PTF-5 Opex	\$0	\$0	\$864,680	\$3,458,720	\$3,458,720
Gross Profit	\$0	\$0	\$1,295,320	\$5,181,280	\$5,181,280
IRR			21.59%	86.35%	86.35%

Assumptions

1. Site selection with minimum 10-20 tons per day feedstock availability is desired with selection of PP/PE/PS to meet 5-ton PTF systems
2. ▶ ACTD Reactor requires dried pulverized plastic feedstock size approx. 3 to 5 cm pieces.
3. The financial projections assume no cost for non valued wasted plastic feedstock.
4. Diesel Fuel produced will be per ASTM/Euro 4 specifications
5. 360 days 24/7 operation
6. Process energy requirements will be met by the VOC's and NC gases generated thru the process.
7. On Site Diesel Genset will be provided if local site utilities are not economical
8. Financial Forecast will be updated after site selection /Feedstock Contract and feasibility study are complete

EFT- ATCD Waste Plastic Feedstock Types

No	Good	No	Good	Good	Good	Depends
						
PET	PE-HD	PVC	PE-LD	PP	PS	0
Polyethylene terephthalate	Polyethylene (high density)	Polyvinyl chloride	Polyethylene (low density)	Polypropylene	Polystyrene	Bisphenol A and others

PET is commonly used in commercially sold water bottles, soft drink bottles, sports drink bottles, and condiment bottles.

HDPE is commonly used in milk and juice bottles, detergent bottles, shampoo bottles, grocery bags, and cereal box liners.

PVC can be flexible or rigid, and is used for plumbing pipes, clear food packaging, shrink wrap, plastic children's toys, tablecloths, vinyl flooring, children's play mats, and blister packs (such as for medicines).

LDPE is used for dry cleaning bags, bread bags, newspaper bags, produce bags, and garbage bags, as well as "paper" milk cartons and hot/cold beverage cups.

PP is used to make yogurt containers, deli food containers, furniture, luggage and winter clothing insulation.

PS, also popularly known as Styrofoam, is used for cups, plates, take-out containers, supermarket meat trays, and packing peanuts.

Any plastic item not made from the above six plastics is lumped together as a #7 plastic. things like CD's baby bottles and headlight lens





Technology Overview

- ▶ Plastics (specifically codes 2,4,5, and 6) can be depolymerized into useable products using heat in the presence of catalysts developed by the Company. While other similar processes typically achieve this using much higher temperatures, EFT's low temperature (350°C - 450°C) catalytic process converts plastics to fuel at a lower cost and with yields greater than 80%.



This is the
unquestioned
counterintuitive
routine

Key Benefits

- ▶ Lower temperature via the Catalytic Process: Our proprietary catalyst permits our Plastic-to-Fuel process to conduct at lower temperatures than competitors.
- ▶ Higher Yields: Our catalytic process produces yields at greater than 80%, which represents a 25% increase in yields from our competitors
- ▶ Consumption-Ready Fuel: The primary output of our process is diesel or gasoline that is ready for use in engines. No need to refine!

Benefits of EFT-ATCD system



Can handle mix of any plastic - best combinations are PE, PP and PS. Yields ca. 90%



Other plastic can be handled, yields ranging from 0 to 60%, depends on type and require capture / control technologies



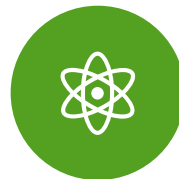
Two catalyst system - no need for prior cleaning and customizable fuel product



Modular and scale up is easily accomplished



Use of nitrogen padding - low carbon char and safer to operate



When non-condensable gases from the reactor are used as heat source for the operation, only emissions are carbon dioxide and water

TEAM MEMBERS

- ▶ Romeo Prescott Interim CEO - is a Canadian entrepreneur and businessman with many decades of experience in capital markets, finance and problem-solving. He is also a long-time organic farmer familiar with some of the many uses of nitrogen-based fertilizers and other chemical compounds in agriculture and industry. Upon graduating from Business Administration, he began managing his own private Real Estate fund. Funding several housing projects and senior condominiums projects IN communities throughout Saskatchewan. In addition. Mr. Prescott is an experienced land developer and Project Manager. Mr. Prescott has experience in new product development and specializes in startup companies during their initial capitalization and development stages. With his background in marketing and product analysis he advises small to medium size businesses throughout Canada/USA and international.
- ▶ Dr. Swaminathan Ramesh – Director of Technology is the **founder / CEO** of Eco Fuel technology, Inc (EFT, from 2012) and Advanced Technologies of Michigan, Inc. (from 1992). Ramesh has a PhD in Organic Chemistry from the Indian Institute of Science, India and performed 4.5 years of postdoctoral research at the University of Illinois. Ramesh joined BASF Corporation in 1983 as a Research Scientist and retired after 23 years. He has about 20 papers and over 40 US patents. The plastics to fuel is protected by three issued US patents and one Canadian.
- ▶ Haz Patel – Director of Engineering: Highly result oriented manager with over 35 years of progressive hands-on experience from technical engineering to Supervision & management positions of increasing responsibilities within Engineering Design, R&D , Process Development ,Test, Operations and Business Development with General Dynamics , JPL , British Aerospace, BlueGen/Combustion Technologies (Waste to Liquid System design , build and operation). Experienced with a diverse range of Products and Technologies in Energy Chemical Processing and Aerospace Industry including Product Development from concept to commercialization. Efficient organized leader with success in coordinating efforts with internal and external multi-functional teams to reach and surpass expectations. Hands on experience developing catalytic thermolysis system including OSHA/EPA/AQMD/HazOpp compliances

1/31/2024



THANK YOU



EFT CONFIDENTIAL

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