

Project GASOSYN™. Transformation of organic matter (garbage) into energy. Green

Objective of the project.

We want to proceed to the second phase of our project of transformation of organic matter in a synthetic gas called **SYNGAS**, mainly composed of Hydrogen (H) and Carbone (CO) oxide. We use a thermal reactor of our invention, we call it **GASOSYN™**. This reactor converts organic materials in **SYNGAS** without introduction of air or combustion of a part of the treated material.

OUR second phase is to build a prototype of **GASOSYN™** that can operate up to 2200° F and treat one ton per hour (1t/h) of domestic waste, now commonly referred to as **Municipal Solids Waste (MSW)**, normally directed to a land filling site to be buried. This model will be called **GASOSYN-1A™**. Our first phase was to develop a model working at 1100° F for 2,5 tons an hour.

The burial of the **MSW** generates **GreenHouse Gases (GHG)** and our process diverts the **MSW** from landfilling and converts them in Green energy that can be used **without generation of GHG**.

When a **GASOSYN-1A™** will be operational at about 2200°F and some unit sold, we will proceed to the third phase with the production of units of 5 t/h, 10 t/h and 25 t/h.

Intellectual property, patents, trade secrets to date.

We have agreed not to seek patent or apply for a protection of trade secrets as long as the financing of the second stage will not be realized. With our financial partner, the first step will be to develop the best possible strategy for the protection of the secrecy of the heat transfer process, in **GASOSYN™**.

Our experience and our achievements.

We have invested nearly 2 million dollars so far, we have obtained tax credits and refunds for the research, development and Innovation from both levels of Canadian Governments. After repayment and amortization, is yet to books, more than \$ 500,000 assets for this project. We have also a little more than \$ 28,000 of tax credits to use for this year and subsequent years.

Our vast experience of more than 35 years as consultant in gas, electric and all types of fossil or organic fuels, as well as the heat transfer system, led us to the development of the high-capacity thermal reactor that we called **GASOSYN™**.

Preference of development: a GASOSYN™ 5 tons per hour.

However we prefer to immediately develop 5 tons per hour reactor, if we can get a \$ 10 million funding, because this model is the exact basis for producing models from 10 to 25 tons per hour which will eliminate a third development phase giving us immediate over the world sales available.

Our technology has been the object of verifications by a third party.

After consultation with the Canadian government Technology Centre of the Energy (CANMET), on their recommendation, we did have our technology verified by BBC Engineering of Markham, Ontario, mainly for chemical analyses and for our program for the evaluation of the final composition of the **SYNGAS** based on the types of waste introduced in our **GASOSYN™**.

We have certified the results of our calculations of heat transfer through the Engineering firm named **Brais Malouin and Associates**, (**BMA**) they are experts in combustion, energy and heat transfer. These reports are available, but given the confidentiality of our **GASOSYN™** design, we decided, for the moment, not to publish the details of construction on a website.

If a financial partner wishes to get another confirmation from a third party, that third party must be independent and not likely to have an appearance of future conflict of interest.

Intellectual property as security for the financial partner(s).

Given that a patent application requires the disclosure of the process, and content documentation supplied for patent is disclosed after 18 months, we prefer to obtain a protection based on a secret or mixture of secrecy and patent, or any other method that will help us to establish as much as possible of **THERMOCYCLING™ plants around the world** in the first 5 years.

We decided not to make formal application for a patent until funding and determine the most appropriate procedure with the partner(s).

Our position is to sell **THERMOCYCLING™ plants** in which we would be majority partner and, for the plants which we would be not a majority partner, we will include in the contract of sale, a mandatory contract of warranty and maintenance for a period of 15 to 20 years, renewable every five years to renegotiate the price of the service.

The price of the warranty and maintenance service agreement would be based on the production and would be payable on a monthly basis. Payment of the service also includes a portion that would serve as a fee for the license.

Maintenance and warranty service will be made exclusively by our specialized employees, tied by a confidentiality agreement. In this way we hope to keep as long as possible the inner secret of the **GASOSYN™**, instead or in addition to any other possible type of protection.

General explanations.

The **THERMOCYCLING™** is the heating of the organic material at very high temperatures, above 1400° F, to transform them into a synthetic gas called **SYNGAS**. Generally we use the term **THERMOCYCLING™ plant** for the entire plant which includes land, building, storage bins, conveyers, treatment plant for **SYNGAS** cleaning, heat recovery and all other process to use the heat like in some instance, water distillation and clean water bottling plant for resale, production of electricity on site for resale, or **Syngas** conversion to **Bio-carburant** for resale, all being profit centers besides money received to treat **MSW** and possible revenue for **Carbon Credits**, when avoiding **GHG** emission from landfilling.

This heating of organic matter, as the branches of trees, hay, vegetables, meat and other domestic waste now called **Municipals Solid Waste (MSW)**, including plastics, rubber and other products of fossil fuel, is done in our thermal reactor of high technology called **GASOSYN™**.

A **GASOSYN™** can operate up to internal temperatures of 2200° F and have various capabilities either 1, 5, 10, or 25 tons hours. Currently we wish to produce a version of 1 t/h for lower investment, but our preference is to immediately make a unit of 5 tons per hour which could discard a third phase of works.

The **SYNGAS**, if it is produced from organic materials other than plastics and other stuff made from fossil fuel, **does not produce GreenHouse Gases (GHG) when it burns.**

The **SYNGAS** can be:

- i) Burned in appliances to replace coal, oil, natural gas or any other fossil fuel, which themselves produce greenhouse gases. We can get carbon credits by using the **SYNGAS** instead of fossil fuels.
- ii) Transformed into synthetic fuels, Jet fuel, DIESEL or ethanol.
- iii) Separated into hydrogen and other gases. HYDROGEN can be used in fuel cells or elsewhere and other gases BURNED in replacement of fossil fuels.
- iv) Used on-site to produce electricity, cogeneration or not.

Each **THERMOCYCLING™ plant** is equipped with a drinking water distillation unit. For each ton of waste treated, with the heat, we can produce 1000 liters of distilled water available for sale on the market.

A ton of organic residues of vegetable or animal origin entitles us to **6.6 carbon credits**.

Usually a ton of municipal waste contains residues of plastics and other of fossil fuel origins and gives right to only 3 or 4 Carbon Credit, according to the content of plastic.

Intellectual property, patents, trade secrets.

Project: distribution of responsibilities between various companies.

- A** - Company concepts, commercial secret patent holder. Currently "Off shore" company.
- B** - Company holding worldwide exclusive rights to manufacture, sale and maintain the central thermocracking reactor called **GASOSYN™**. "Off Shore"
- C** - Company holding the worldwide exclusive rights of sales of licenses of operations of the **THERMOCYCLING™ plants** with the use of one or more reactors **GASOSYN™**. This company will hold the shares, totally or partially, but our goal is never less than 15% in a **THERMOCYCLING™ plant**.
- D** - Engineering and project management Company for the construction of **THERMOCYCLING™ plant** for companies that own and operate a **THERMOCYCLING™ plant**. This company will use engineering and local contractor's firms when possible.

The companies, who will buy a **THERMOCYCLING™ plant**, with the rights and licenses of operation, will have to sign:

- 1) **A license of operation agreement** and a **partnership agreement for the shares**, with company **C** above to create the company owning the **THERMOCYCLING™ plant**.
- 2) A management contract for the construction of the **THERMOCYCLING™ plant** and for the installation of the equipment required for the chosen plant type, either production of electricity, bio-fuels or hydrogen, or a mixture of them, with company **D** above.
- 3) A purchase contract for the **GASOSYN™** and an exclusive long term contract for the guarantee and maintenance of the equipment with a company designated by the company **B** above.
- 4) A purchase contract for the water distillation unit and an exclusive long term contract for the guarantee and maintenance of the equipment with a company designated by the company **B**.
- 5) A purchase contract for the Catalytic Conversion Unit to produce Bio-Carburant and an exclusive long term contract for the guarantee and maintenance of the equipment with a company designated by the company **B** above.

6 A purchase contract for the unit of treatment and separation of the hydrogen **and** an exclusive long term contract for the guarantee and maintenance of the equipment with a company designated by the company **B** above.

The other services required for the construction and development of a new **THERMOCYCLING™** plant will be the responsibility of the owner of the plant who can, according to the specifications set by the company **D** above, gives local contracts. (Labor, land, buildings, conveyers, machinery for sorting, grinding, storage, etc.)

Various data on the needs of a population in relation to the waste.

Generally in a North American or European type industrial countries, there is a production of about 1 ton of waste per person.

After the recycling of a approximately 1/3 ton per person, remains 2/3 ton of MSW which are landfilled producing **GHG** and toxic leachates polluting the underground water for wells.

If these **MSW** are diverted from landfilling and directed to **THERMOCYCLING™ plant** using a **GASOSYN™** with a capacity of 1 ton per hour (1 t/h) operating 8400 hours per year the plant may serve a population of 12,000 inhabitants.

A plant can be equipped with 2 or 3 **GASOSYN™** to serve a larger population.

For example, in an area with a population producing 3.5 million tons of waste per year, after recycling there are more than 2.5 million tons left to be buried which represents at least 12 **GASOSYN™** 25 t/h each. There may be 6 plants treating each 50 tons of MSW per hour spread around the area, using former landfilling sites or other industrial site available, to lower the transportation costs.

In the future we can have **THERMOCYCLING™ plants** with a **GASOSYN™ 5, 10 or 25 tons per hour to serve as large cities like New York, London, Paris or Tokyo, using several strategically located plants to reduce transport.**

Smaller units will also have a market from the producers of waste that would be an advantage to treat their waste on-site to produce a portion of their energy transforming waste in source of income to reduce their operating costs.

Pratt & Whitney notify us that: [[ASTM International approved the use of HEFA \(Hydroprocessed Esters and Free Fatty Acids\) as a blending component in ASTM D7566 "Specification for Aviation Turbine Fuels Containing Synthesized Hydrocarbons".](#)]

In fact we can produce jet fuel equivalent to the one produced by conventional refineries.

Mr. Bronson of Virgin Air has announced that he would give a grant up to \$ 25 million for the first plant producing from biomass a fuel that can be used in aircraft. We would like to build that first plant.