Madrid - November 2020 -

Bases Plan Company Plastic Valuation.

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1. Executive Summary

The proposal is within the recycling/recovery sector of waste, as well as the fuel sector.

The foundation is to replicate the successful technology experience that has been applied to the existing plant in Almería(Spain).
The Energy and Environment sectors) are key axes in the coming decades.

The raw material is plastic waste and in particular those that are not currently recycled or little recycled (such as agriculture, film, RSU fraction (Urban Solid Waste).

The main product obtained is a hydrocarbon (similar to a C diesel).

The project presents data for a plastic thermal recovery silver (slow at low temperature) to be converted into hydrocarbon for plastics or as diesel C.

The raw material (non-recyclable plastic) is very abundant and a problem. Currently more than 50% of what is produced in Spain (2 million tons of plastics or plastic scrap) goes to landfills. Multiple managers who offer such material, because of the difficulty of recycling it or the high cost of landfills.

On the product side - hydrocarbon - there is constant demand. There is a demand from REPSOL for the one produced with this technology.

The quality of the product and the acceptance, is proven by the operation of the Plant of Almería (Spain) that has been operating for more than a year.

The metrics presented are real based on the last year and as can be seen they give a very high retur The main advantages: the importance of plastic recycling, the demand for sustainability and the new circular economy of plastics. All coupled with a technology and know-how probed

The problem: Plastic. Some significant facts.

In 1964, 14 Million Tons were produced worldwide and in 2014 310 Million Tons were reached. By 2020, that figure is expected to double.

Globally (World Economy Forum -WEF), packaging plastic accounts for 26% of the total produced, and is not recycled 76%! Considering the European data (the most advanced), of the total plastics that are generated and end their useful life, only 59% recovers, of which 34% is like energy recovery.

According to WEF mostly recycling is done in low value applications, in addition 95% of materials lose their recyclability after use (due to contamination with other materials) and the normal is that they can only be recycled 2/3 times !! Then enter the product chain without the option of recycling in a traditional way.

In Spain there are more than 4 million Tn/ year of plastics, according to the European association.
According to data from the latest report of Cicloplast (2016) in Spain, more than 2 million tons of plastic waste or plastic scrap are generated annually. Of these, 34% are being recycled, 17% are energy valued and 49% go to landfill (which is 1 million Tn!).

To produce plastic, 6% of all extracted oil is consumed, the equivalent of aviation consumption.
Energy recovery (burning in industries) is being discouraged by potential pollution.

In 2010, according to data from a WEF study on the new plastics economy, the ocean was contaminated with about 8 Million tons/year (the equivalent of one container every minute!!) By 2025 you can reach the incredible figure of 1 ton of plastic per 3 tons of fish. This demonstrates poor information and awareness-raising and that no economically viable solutions have been proposed

The project plans to develop chemical recovery plants of plastics (slow at low temperature) to convert it mostly into hydrocarbon products (naftas and similar to Diesel C).

Business Background.

The proposal is within the recycling/recovery sector of waste, as well as the fuel sector. The foundation is to replicate the successful technology experience that has been applied to the existing Hintes Oil plant in Almería.

The origins of this project date back more than seven years when several pyrolysis plants began to be developed - industrially. Most with Asian equipment bases and without a technological support component.

To date, only two projects have survived, of the more than 10 projects started, and only hintes (with JFJ technology) operating with economic, environmental and technological viability.

The JFJ technology-based plastics project is working properly, after more than four years of improvements, applied research and developments to adapt technologies to the legal and security reality of Europe.

Bases for the suitability of the project. The amount of unsused plastic that exists and the high percentage that ends up in landfills. According to INI and Cicloplast data, there are more than (1) one million Tn/year of plastic reaching landfills.

Having an audited technology validated by important companies (SGS, Repsol) that allows to validate the replicability and suitability of the products obtained. As well as multiple smaller customers who have been using the products in the last year.

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Business Considerations I.

Replicate the technological solutions (knowledge of what and how to do) applied by JFJ at the Hintes Oil plant in Almería.

Develop similar actions in the multiple locations with minimal availability of unre recycled plastic (currently any urban and industrial environment). Suitability is mainly based on:

- Locate industrial building/land in areas near cities and industrial areas (there are more than 20 current direct options).
- Requesting permissions, (based on the experience and data that can be displayed from our technology is not a "risk" solution and is somewhat contrastable.)
- Agreements with recycling or plastic collection managers (there is currently oversupply).
- Applying JFJ technology to plant development.

The whole process is supplemented by: Community directives in favour of the circular economy.

Policy guidelines indicate the need to improve plastic recycling.

The product resulting from pyrolysis recovery is - mostly - usable hydrocarbon in the production of new plastic

There is a positive awareness for solving the plastic waste problem.

Complementary note:

The high availability and offers to supply plastic for recycling, is motivated because to date - as indicated by a study by Susan Freinke - , 80% of the plastic used ended up in China. At present this is no longer possible (a rule that each country manages its waste!!) and therefore most ended up in landfills and burning in incinerators.

Another important barrier to potential competitors is compliance with European standards and regulations. For our part, since data are available, much better argument can be made with the administrations.

Technological knowledge developed to date is an important brake on other competitors. It has already been seen how other international companies have failed where we have elements in operation.

The strategy is to value that advantage and maintain that leaderindustrial building, and expand it by working with a greater number of facilities in a coordinated manner.

Working with promoters/funders who value:

- The advantage of having a project operating on an industrial scale, and has real and contrastable data.
- Values audited/controlled by the administrations themselves (Environment and Finance), since waste and product data, are subject to strict control and monitoring rules.

Strengths and weaknesses.

Strengths:

Technological knowledge of the process.
Experienced team,
Silver running and with real data, not hypothesis.
Product accepted in market
Stock of raw material offering.
Very serious current competition, power pioneers in replicating plants at ideal points

Weak points:

Need to act fast Capital to start processes in various locations.
The main attraction of the project is: the feasibility, experience and technological knowledge of the operation and adequacy of the operation of the process.

The Raw Material - Pl's I

One of the elements of the business is: the raw material (non-recycled plastic waste).

Main market data for raw materials, waste plastic, ...

Since the beginning of the industrial application in 1920 in 1860, it would be difficult to understand the world without plastics. More than 311 million tonnes were reached in 2014.

Consider that today, 15% of a vehicle is plastic and that more than 50% of the latest Boeing Dreamliner model is plastic.

In the case of plastics in Urban Solid Waste (RSU), which is an element of plastic availability: Considering the data of Atlas International waste, the data from Atlas International waste, the data from Spain related to waste are:

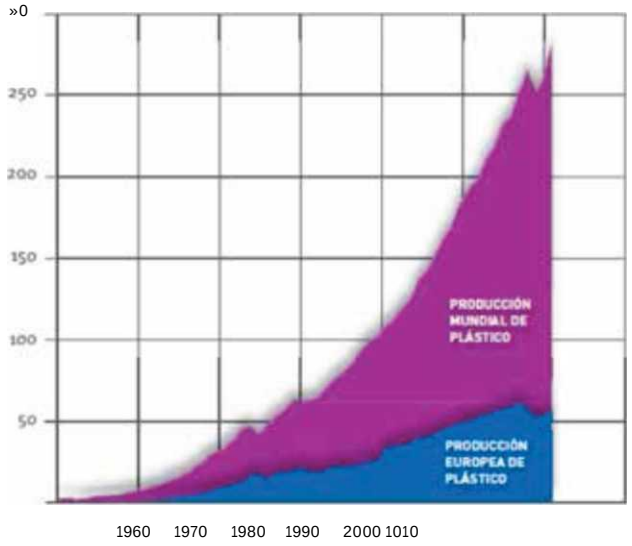
Waste generation per capita (kg/year): 449

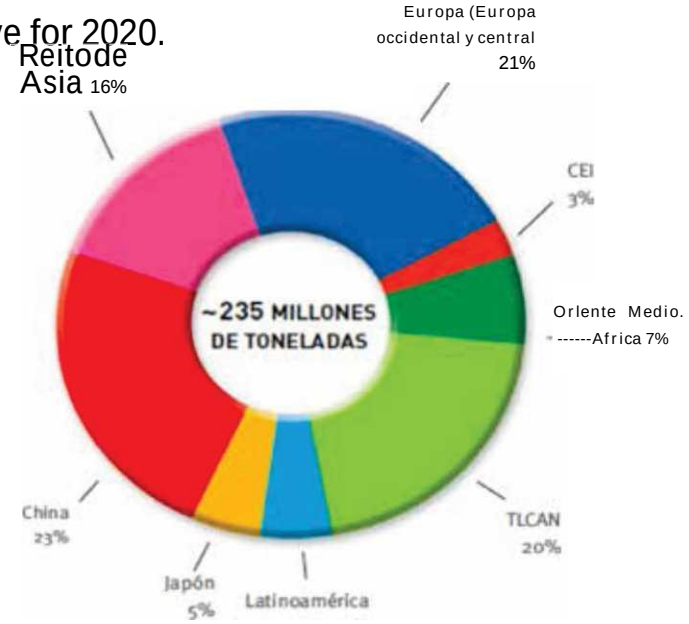
Urban waste (Tn/year): 20,750,000

Global recycling (%): 20
Percentage of plastics (%): 11.9
Plastic per capita/year (kg): 54,43

The Raw Material - Pl's II

The figure shows the growth of global plastics production and the corresponding production in Europe. In the second figure, how plastics production is distributed around the world. The most common plastics, by typology, in Europe, are:
Low Density Polyethylene (PEBD)-17%
Polypropylene (PP) - 19%
Polychlorinus Vinyl (PVC) - 11%
Solid and Expanded Polystyrene (PS/EPS) 7,5%
Polyethylene Teraftelate (PET) - 6.5 %
Polyurethane (PUR) - 7%
Others..
As you can see, by logic the PP is the one that is most available
Urban Plastic Waste (RPU) is far from the 50% recycling set out in the Community directive for 2020.





Main product: Hydrocarbon similar to Gasoil C

Hydrocarbon (similar diesel C)

The hydrocarbon produced has characteristics similar to the usual diesel C, but with a higher heat power (by 10%).
It also serves as a base product for producing plastics

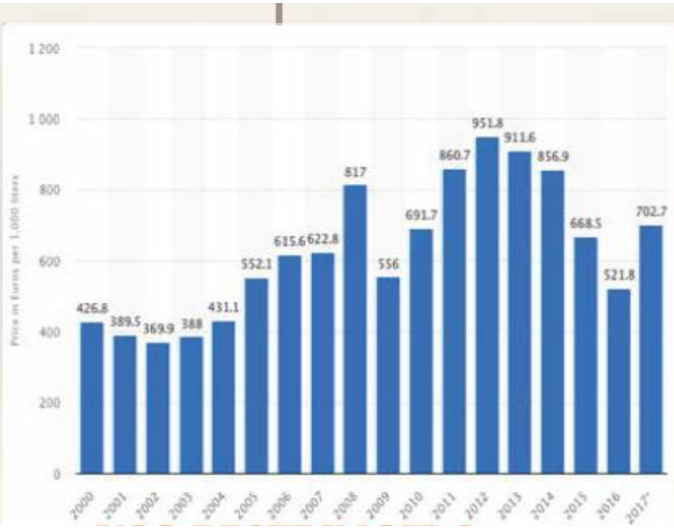
10As a reference, the average cost of recent years (2012-2017) is added in some regions of Spain.

By way of example, the European Commission reported an average price without tax of: 473 s Consumption of gasoil C in Spain average of the years 2015, 2017 can be seen in the graph on the right, by regional.

As you can see, there are regions with heavy consumption. In this data, consumption in the marine, agricultural sector... representing a part-of-the-other analysis.

In the coming years, where restrictions on marine uses will apply and this will represent new opportunities.

CAA	Media total 2012/17
Andalucía	0,891
Aragón	0,863
Asturias	0,920
Illes Balears	0,935
Canarias	0,011
Cantabria	0,900
Castilla y León	0,903
Castilla - La Mancha	0,883
Cataluña	0,896
Valencia	0,915
Galicia	0,916
Madrid	0,913
Murcia	0,899
Navarra	0,853
País Vasco	0,924
La Rioja	0,897
Media	0,901



CCAA	Media total
Andalucía	29.028
Aragón	216.343
Asturias	4.361
Cantabria	293.333
Castilla y León	220.287
Castilla - La Mancha	193.200
Cataluña	6.167
Valencia	2.583
Extremadura	286.764
Galicia	4.667
Madrid	24.250
Murcia	213.195
Navarra	154.028
País Vasco	179.583
La Rioja	287.417
media	2.115.205

Market – Sales

Sales forecast.
The sale of 100% of the main product produced (gasoil), the other by-products (carbon ash, waxes and paraffins) are considered to be processed to improve the level of use and can achieve very high added value. The analysis has only included the minimum valuation of these by-products, which account for 10%.

In the analysis of production (and therefore sale) it has been considered - very conservatively - that the first year will be produced and sold according to considerations:
First year: 50% of the maximum capacity.
Second year: 80% of maximum capacity.
Third year: 90% of the maximum capacity.
Customers, product. Customers of the main product (gasoyl simil) are oil product distributors and large consumers of diesel.
There is also REPSOL that can buy all the product produced with JFJ technology plants. Experience shows that product quality is appropriate to customer requirements.
Together with this the price and special conditions, they make the product very interesting for discounts versus the traditional.
Today there are more than 10 customers (distributors and large customers) in the area of Almería and Murcia.
Such customers are easily replicable in other regions, because of the similarity and even the communication action between distributors and their associations. In the considerations of the plan, there are no seasonalities of consumption, since the demand of 100% of REPSOL prevents it.

Selling prices.

The plan envisages the price and conditions that have currently been applied to the reality of Almería and are a reference for the rest of Spain.

A price is offered according to the market price of diesel heating. A discount on the official price is offered at CLH

The regional tax, hydrocarbon tax and VAT must be added to this price.

In the event that the price of diesel C in CLH (Cisterna) is **473/m3** + VAT (in this price is included the IEH (Special Tax Hydrocarbon - which is special in each region) in the case of Andalusia (each case must be analyzed) is:

- General Type 78.7i
- -Special Type 6.00
- -Autonomic Type: 0o
- Total: 84.71

For this product that is produced, the IEH is **17 euros/Tn**, which is approximately **15€/m3** (as it is fuel and by the correction of densities - the fuel has lower density).

The sale price for large customers (REPSOL type with which an agreement is available 100% of production), has been set at 380 euros/m3 (with a minimum ceiling of 350 euros/m3). If you are deducted from the EHE (15 euros/Tn) there is a net sale for the company of: **365 euros/m3**.

Yields on both raw materials and products sold are fully audited according to waste control rules and tax agency rules. These are the best "Diu Diligence" that can be done about the goodness of the process.

The payment methods of products and goods, considered in the simulation of the study, are the usual ones of: 30 days.

Production and quality plan.

To understand the production and process of the plant, the diagram or stages that the raw material follows until it becomes a product to sell will be followed.

- Collection agreements.
- Reception (heavy and material verification) and raw material storage.
- Load in reactor.
- Heat.
- Chemical titration process by slow and low temperature thermal cracking.
- Cool and Pass (remove presence of unwanted acesses)
- . Unload remains.
- Clean reactor.
- Cleaning and storing diesel Store other by-products (waxes, paraffins, carbons)
- Weigh and sell.

Collection contract

. Prior to the raw material reaching the plant, efforts are made to ensure a type of material, a delivery sequence and a quality control model

. **Reception (heavy) and storage of raw materials.**

With the sequence set (usually every week) the plastic material is received, which is weighed and stored in the corresponding industrial building area. Space is usually available on the industrial building to store matter for several weeks, although if there are no problems, it is stored only for one (avoid risks)

Load in reactor.

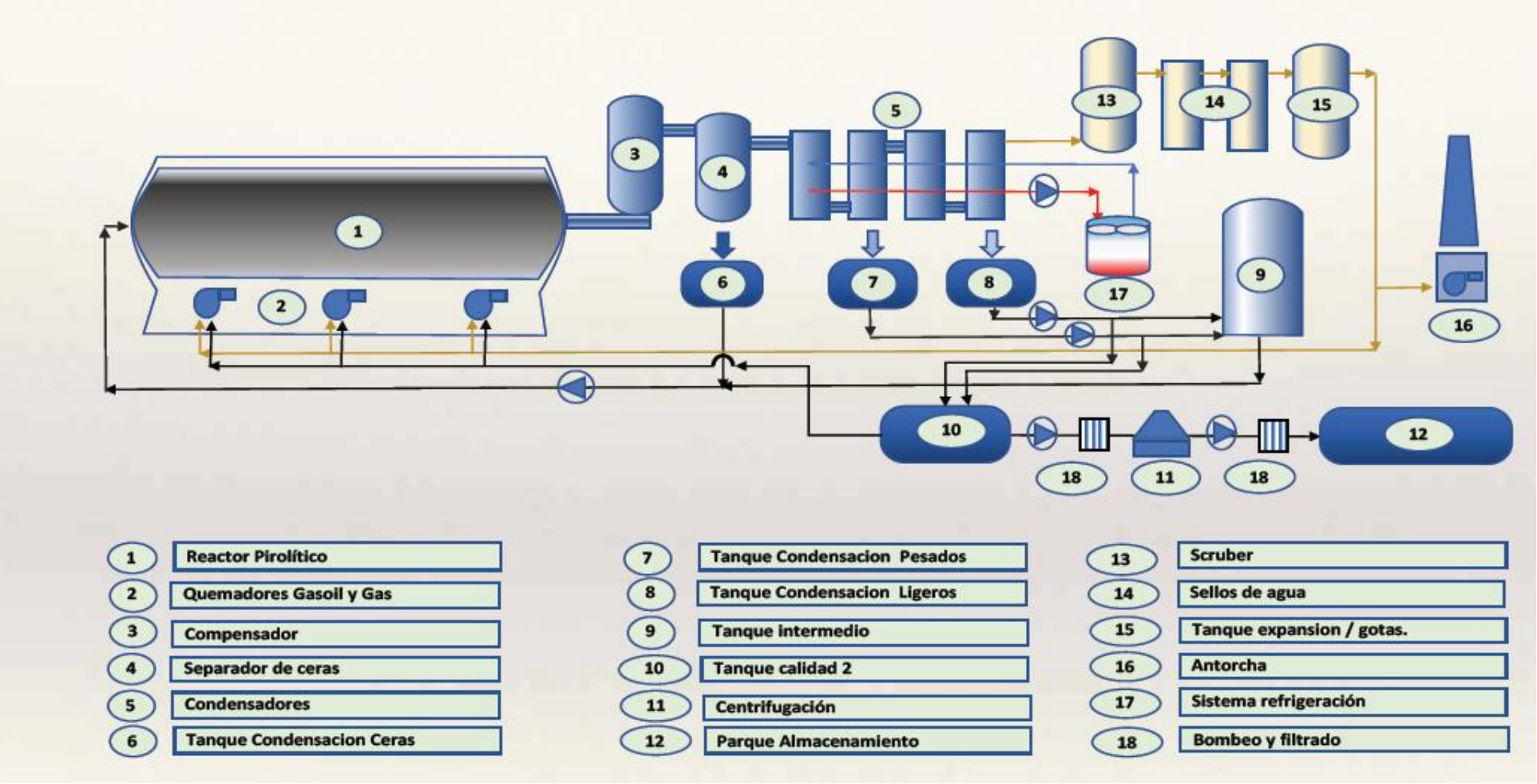
In the corresponding periods (according to production planning) are loaded - with a manitu or similar - the bales (usually 700-1000 kg) into the reactor. Heat. Once the reactor is loaded, the inlet is closed and process-ready, it is heated. It should be done according to criteria of performance maximisation (use of excess heat, soft heating...).

Pyrolysis process.

The process begins approximately two hours after starting to heat. It must be adjusted to the type of raw material introduced and controlling various parameters.

Description of Plant Pyrolysis II

Estructura de la planta de valorización química de plásticos.



Description of Plant Pyrolysis III

Process:

The system is heated up to 100oC and a part of water containing the raw material is released.

The reactor is continuously heated above 100oC. At this stage the cracking gases (breaking of the hydrocarbon chains) of the plastic components are started to be produced. The gases that are released, a part condensed as heavy elements in the area of Waxes and Paraffins. A second part is condensed into the area of heavy fluids (fueles and diesels) and discharged into a heavy condensation tank. One last part condenses into the Light Fluid area, and discharged into a Light Condensation Tank.

Gas that is not liquefied in the condensation process, is passed through a filter (Scruber), water seals and an expansion tank. This ensures that it is suitable for burning in the process, heating the reactor. This ensures that the process does not require external energy input.

Once the chemical valorization / pyrolysis is over.

Cool and Pass.

When the process is finished, the reactor is cooled. Once a set point temperature is reached, an inert gas is introduced into the reactor that will remove all residual gas. Once the passivation is done, the reactor is opened for emptying, cleaning and ready for the next process. Unload remains. The remains of the process are unloaded. They are usually carbonous materials, metals that there were. These materials are brought to the relevant area for processing and sale.

Clean and check the reactor.

The reactor is cleaned and checked.

Clean and store diesel.

The diesel/fuel that has been generated throughout the pyrolytic process and has been stored in process tanks, is transferred to the pre-warehouse tanks, filtering out of possible particles that would have appeared. Storing other by-products (waxes, paraffins, carbons) Just as diesel has been produced, different very valuable by-products, such as waxes and paraffins, are produced. These by-products are processed according to market demand.

Weighing and selling fuels and processed products, when picked up by the customer, are weighed for their control (internal and Tax Agency) and their billing.

Yields on both raw materials and products sold are fully audited according to waste control rules and tax agency rules. These are the best "Diu Diligence" that can be done about the goodness of the process.
The payment methods of products and goods have been considered in the study, the usual 30 days.

The process described above has a nominal capacity of 10 Tn/process per reactor. Depending on the material typology and other circumstances (density, humidity,..), the 10 Tn/process can be processed.
According to experience, less than 7 Tn has never been processed in each process. Average 8 Tn/process.
1.5 processes are developed in each reactor per day. Normally.
This: Considering 300 days of effective work**, it would be processed in the order of 3,600 Tn per year per reactor. Three reactor plant: 10,800 Tn/year. The conversion in fuel is 60%, so can be produced 6.480 Tn of fuel, equal to 6480 x1000 kg/850 (kg/m3)= 7.623,53m^3 of fuel.**
7.623 m^3 * 365€/m^3= 2.782.588,24 €/year
Processing times are typically set based on several parameters: Number of processes. (normally 1.5 per day, reaching 1.8 with experienced staff) Amount of impurities and water in the raw material. (usually pre-controlled) can account for 10% Complementary Operations (Maintenance, Cleaning..). They have been considered 60 days, which is a pessimistic scenario.

NOTE All this data and those presented in this document are based on the experience of recent years, but must be tested for each particular case (depending on the type of plastic, local conditions...)

The economic data presented are merely informative and under no circumstances may they be considered contractual. Closed data can only be raised after the detailed analysis has been done under a closed agreement with the interested parties and the raw material available is characterized

Equipment and machinery.

The equipment involved in a plant of the characteristics described is composed of:

- Land
- Industrial building.
- Auxiliary system in industrial building:
- Electrical onslaught.
- Fire system.
- Compressed air system.
- Nitrogen System.
- Reactor and complementary systems (separator, capacitors, water filters, process tanks.
- Installation control system
- Approved/certified scale.
- Fuel final warehouse tanks.
- Fuel loading system.
- Raw material loading and movement systems and various (forklift and telescopic loader)
- Automatic atmospheric monitoring system (as required
- CCTV system (optional)

Ground.

Suitable for recycling uses, preferably close to raw material or supply area. The same circumstances of renting land have been taken for the study. Industrial building. Suitable for use, according to design proposed to optimize movements, warehouse and minimize possible gas risks. With a minimum **surface area (for two reactors) of 1,500 m2**, **although 3,000-2,500 m2 is more convenient for possible expansions.**

You must have a local enabled for staff, office, laboratory and spare parts and maintenance services.

Data has been taken from the case of Almería, where the industrial building is in a technological polygon and is for rent with option to purchase.

Description of Equipment II

Auxiliary system in industrial building:
Electrical onslaught. As standard.
Fire system. According to regulations and depending on the warehouse of raw materials and products.
Compressed air system (small). For operations and measurements.
Nitrogen System. For passivation processes. It is usually leased by the supplying company.

Pyrolytic reactor and systems (separator, capacitors, water filters, process tanks.
The main team of the whole process. It consists of: reactor chamber. Gas and diesel burner system, separator, condenser line, water filter lines, two fuel tanks, wax and paraffin tank, torch and/or burner with secondary boiler.

Installation control system
Complete system with probes, actuator023.s, computer and program with guidelines to manage and control the installation. Even with options to control and act online on the different parts of the system. Approved/certified scale.
Outside the industrial building, usually at the entrance and close to fuel loading area. Final fuel warehouse tanks (usually in the order of 200 m3). According to standard and normally sufficient to store at least two weeks of production. Fuel loading system. System approved and validated by corresponding inspection. Material movement systems and telescopic manipulator (Type : Toro and Manitou).

Mobile equipment, usually a forklift (Toro type) and a material movement equipment with telescopic arm to facilitate the loading of the reactor (Manitou type). The study has considered the monthly rent with option to purchase Automatic Atmospheric Monitoring System (according to requirement). System of acquiring process effluent data to the atmosphere through the chimney. Because of the size of the plant and quantity treated, it would not be mandatory according to Community regulations, although some administrations have requested its installation to validate data. Because data from our work model is available, it would not be necessary because parameter compliance testing could be provided. It's an expensive system. CCTV system (optional).

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- Degree in Qumica (Univ. Cordoba) Expert in Catalysis Eterogenea.
- Master in occupational accidents.
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- Chief Operating Officer of Hintes Oil Europe.

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- Responsable Energía Solar technology projects at MADE S.A. / Grupo ENDESA)/
- Chief Operations of RGS-2 (tyre pyrolysis).
- Founding partner of JFJ for chemical recovery solutions in the new circular economy.

Considerations and basis of analysis.

The base data that has been used to make a simple analysis of the returns and elasticities of certain variables is collected.

The data considered are real operation of the Hintes plant in Almería.

These results are indicative and should only be taken as such, with the final investor being the one who must make its own considerations.

Investment (Approx): 2,700,000.- including engineering, licensing,...). Complete plant with three reactors and their auxiliary equipment for normal operation as presented.

Build a new industrial building of 2.000 m^2 : 1.000.000€
Buyin land.: 4.000 m^2 * 80 €/m^2 = 320.000 €

Total investment: 2.700.000+1.000.000 + 320.000 = **4.020.000 €**

Product Ratio Produced . 52% (normal would be 55-**60 %** especially in prime plants with excess offer)

Price: minimum 380 euros/Tn (it is the low level because at that price it is sold to Repsol). It is usually sold 10-20% to premises at a price of 450 euros / Tn.

Payment Raw Material: 0 €

In the near future, it will be at least 30 euros, which will be charged for processing it, equivalent to the minimum landfill.

Profit tax: 25% Inflaction: 1% Dividend sharing: 50%

Personnel organization.
The structure of personnel and salaries according to the plant currently operated in Almería (14 monthly pay) has been considered.

Dir / Gerente	1	4.286
Dir. Planta	1	4.286
Comercial	1	2.500
Subdirec/Planta	1	2.857
Jefe Mantenim	1	1.786
Control Operac	5	1.786
Operario Plant	10	1.571
Administrat.	1	1.786
Otros	0	0

Total 784.665 €/Year
The monthly overheads considered, depending on the experience are:

Otros gastos	Mensual/Reactor	Anuales
Electricidad	1.000,00	36.000,00
Teléfono	100,00	3.600,00
Material de Oficina	50,00	1.800,00
Limpieza	50,00	1.800,00
Servicios Profesionales	300,00	10.800,00
Seguros	1.000,00	36.000,00
Tributos	300,00	10.800,00
Repuestos	2.000,00	72.000,00
Nitrógeno	900,00	32.400,00
Otros (agua...)	1.000,00	36.000,00
TOTAL OTROS GASTOS		241.200,00

Other questions ¿

Financial Results:

Please see enclosed excel file

As can be seen in the attached Excel, profitability is high even in a very conservative/pessimistic scenario. In the case of considering an optimistic scenario, of: Average price: 400 euros / Tn Number of lots : 1.8 reactor/day. Raw material paid at: 30 euros/Tn TIR (with the rest of the equal variables) : 56 %

What are we looking for?

Partners who contribute the capital for the investment, in the form of credit. We would put in place plants where we provide the technology and the benefits would be provided priority to cover the investment.

What to do...? In case of interest, they would surely like more data and other information... An NDA will be signed to follow a roadmap and plan to develop the chosen projects.

Historical evolution of the price of the finished product.

The finished product is characterized by the Treasury (to be determined by the applicable taxes) and has been characterized as a pyrolytic fuel (like a heating fuel). Market price developments are reflected in multiple reports, such as those of the European Commission (collects day-to-day developments) The figure shows the average evolution. As you can see, there is little variability.

Maximum and minimum variability of efficiency in finished product processing based on raw material quality.

The final product has little variability, which can occur, if the raw material is of low quality, is that it requires more processing time (10% more time in such cases). This should be a minimum of cases, since the inflow of raw materials is controlled. If a supplier brings an unsuitable product, you will be restricted or controlled more, for the next few times.

How polluting is this solution?

The solution is not polluting at all if done properly. There is thorough control by the administration. The plant has real-time meters in the fireplace, which are connected to the competent management.

Who pays the transport costs of both input and output?

Transports are carried out by those who bring the raw material and those who withdraw the products.

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