



FIRST IMPLEMENTATION OF A NEW
WASTE RECOVERY TECHNOLOGY
CONVERTING THE MSW FROM A
REPRESENTATIVE URBAN REGION INTO
SYNTHETIC DIESEL FUEL

Demonstration KDV TECH



≡ PROJECT'S CHARACTERISTICS

Coordinator	GRINÓ ECOLOGIC, S.A.
Duration	39 months. (01/09/2010 – 31/12/2013)
Budget	4.871.800 €
Financing LIFE+ programme – European Comision	2.338.400 €

≡ BENEFICIARY



≡ STAKEHOLDERS

AGÈNCIA DE RESIDUS DE
CATALUNYA



Ajuntament de Torredembarra



Ajuntament de
CONSTANTÍ



INDEX

01	STATE OF ART	4
02	THE DIESEL R PROJECT	5
03	OBJECTIVES	6
04	THE DEMONSTRATION PLANT FROM CONSTANTÍ	7
05	RESULTS	8
06	COMMUNICATION ACTIVITIES	9



01 | STATE OF ART

The generation and management of waste constitute a serious social and environmental problem in modern economies. Hence arises the need for developing waste legislative tools at EU level to ensure the proper management and preservation of Europe's environment.

From a technological point of view, at present exists a multitude of practices, technologies and processes for the treatment of the municipal solid waste fractions, although only few of them are of high scale application.

The waste management systems currently implemented in Spain are based on the recovery of organic matter, packaging, glass and paper, meanwhile the rejected fraction is not recycled, and is mainly destined to final deposition.

The DIESEL R project (DEMONSTRATION KDV TECH) started in 2010 in order to meet the current and future needs related to waste matter.

DIESEL R considered the demonstrative application of the catalytic depolymerization technology for the treatment of the rejected and non recycled fractions of waste of municipal origin. The project considered the first *full scale* demonstration application of the technology with the development of a facility having the capacity to treat 40.000 tons/year (waste generation equivalent to an urban area of 180.000 inhabitants).



DIESEL R TECHNOLOGY. CATALYTIC DEPOLYMERIZATION OF ORGANIC CHAINS

GRINÓ has developed an own technology capable of converting the unusable organic waste fractions (of municipal origin) into synthetic diesel fuel (Diesel R).

The technology is based on the catalytic depolymerization, consisting in breaking the long chain organic molecules into shorter chain molecules, which constitute the obtained diesel fuel.

02 | THE DIESEL R PROJECT

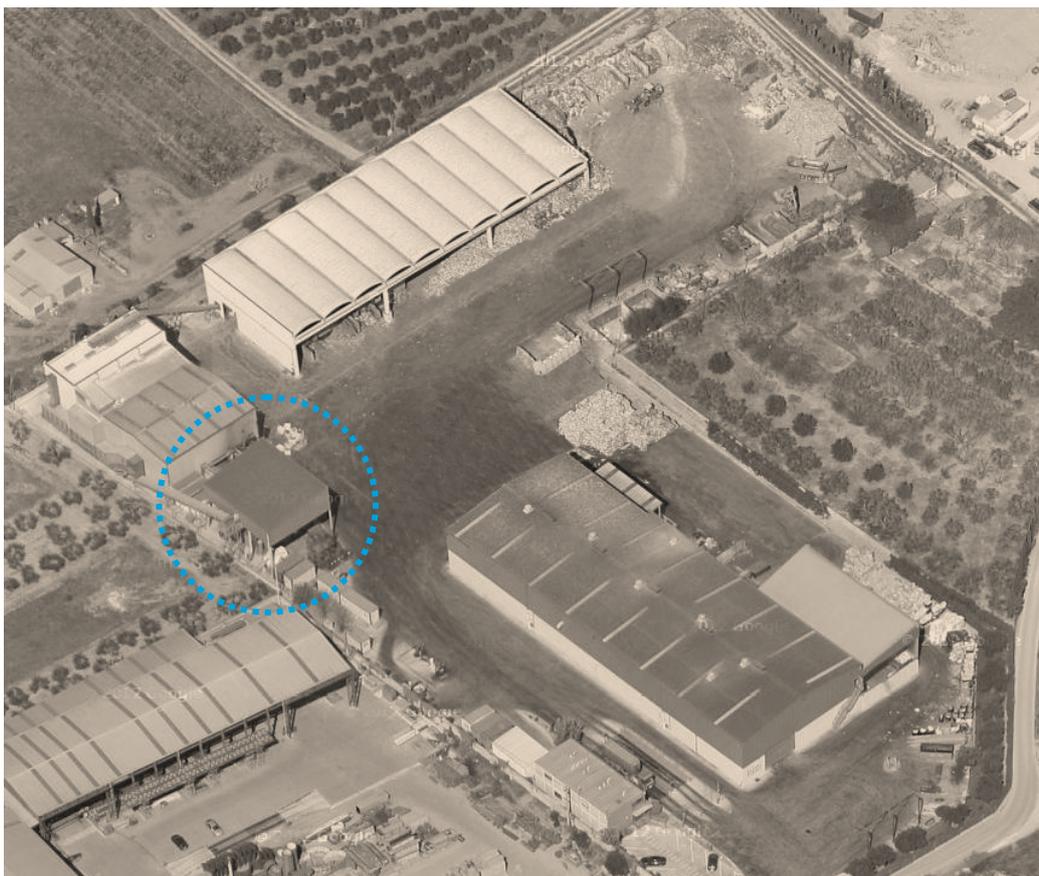
The DIESEL R project (Demonstration KDV Tech) was conceived with the aim of presenting to administrations, private companies, academic world and civil society in general.

It has been developed a first DIESEL R plant with a production capacity reaching 1.800 liters/hour of synthetic fuel.

The demonstration plant was built in the Center of Waste Treatment of Constantí (Tarragona,

Spain). This plant treats municipal waste from the regions of Baix Penedès, Tarragonès, Alt Camp and Barcelonès.

There have been realized communications and outreach activities to propagate the technological results achieved in different mediums like academic, business, public and society in general.



03 | OBJECTIVES



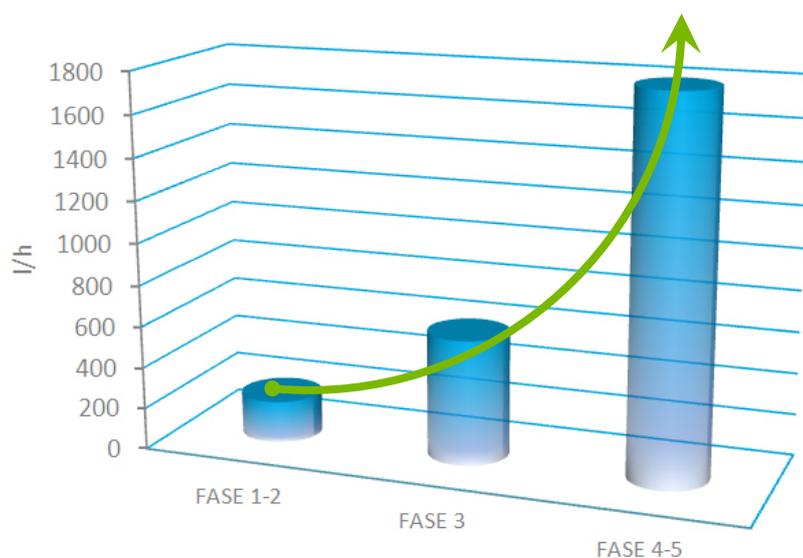
More specifically, the objectives that have been followed are:

- a) The **LARGE-SCALE DEMONSTRATION** of the effectiveness, versatility, technical potential and economic viability of the new technology of waste valorization.
- b) **DISCLOSURE TO PROMOTE ITS REPLICABILITY.** It has been pursued the disclosure of the achieved results and thus promote the application of depolymerization technology in urban areas with similar characteristics, both in Spain and in other member states.
- c) Provide an **EFFECTIVE SOLUTION AS AN ALTERNATIVE TO LANDFILL DEPOSITION.** It has been pursued the presentation of a technology which can be proved to be effective for the drastically volume reduction of non-recyclable organic waste, which are currently destined at final deposition.
- d) Provide an **ALTERNATIVE ENERGETIC VALORIZATION OF HIGH EFFICIENCY** (there are pursued conversions of about 50% in weight, which means that for every 100 kg of fed waste are obtained 50 kg of diesel fuel).
- e) Situate GRIÑÓ as a **SELF-SUFFICIENT ENERGY COMPANY**, as is planned to use the synthetic diesel obtained from the residual valorization in order to fuel its fleet of vehicles.
- f) Improve the current technology and **POSITION ITSELF AS THE BAT** in terms of non-usable waste fraction treatment.

04 | THE DEMONSTRATION PLANT FROM CONSTANTÍ

There have been evolved the pilot installations available in Constantí, in order to configure a demonstrative plant presenting a continuously operation regime and a production capacity that can reach up to almost 2.000 l/h.

With this objective there have been implemented to the pilot installation, since 2011, up to 5 technological improvement packages which have led to increase progressively the production capacity and extend the operating regime of the plant.



05 | RESULTS

The project allowed the achievement of the objectives that motivated its approach:

- a) Develop a facility which can offer an **IMPROVEMENT IN THE WASTE BEHAVIOR OF THE TERRITORY WHICH IT SERVES** (regions of Baix Penedès, Tarragonès, Alt Camp y Barcelonès). The demonstration DIESEL R plant from Constantí possess the capacity for:
 - Reduce the final deposition of MSW with 40.000 tons each year.
 - Produce 15.000 tons of alternative fuel annual, which imply a reduction of 44.000 tones of CO₂.
- b) **OWN THE FIRST PLANT THAT APPLIES THE CATALYTIC DEPOLYMERIZATION TO THE MSW TREATMENT** - the non-usable fraction from the mechanical selection treatment plant - with the sufficient treatment capacity to satisfy a population of 180.000 inhabitants.
- c) **OWN AN INSTALLATION ACCORDING TO THE GUIDELINES OF DIRECTIVE 1999/31 EC**, for applying a technology (KDV) which overcomes the technical limitations of the solutions implemented up to date.
- d) **PUBLISH, DISCLOSE AND REPORT THE ADVANTAGE OF THE PROPOSED TECHNOLOGY WITH RESPECT TO THE ACTUAL APPLICATION TECHNOLOGIES** (MBT plants, energetic recovery plants), both in references with environmental issues, such as economic viability of the plants, and with social acceptance level.
- e) **OBTAIN A HIGH REPLICABILITY RATIO** from the disclosure and presentation of obtained results of the developed technology.

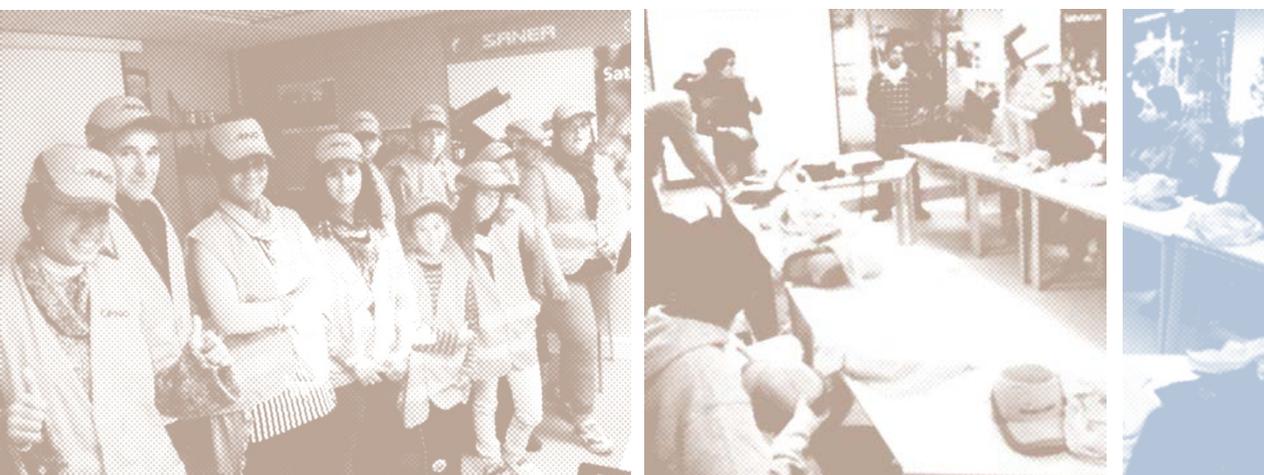


06 | COMMUNICATION ACTIVITIES

≡ Visits and events

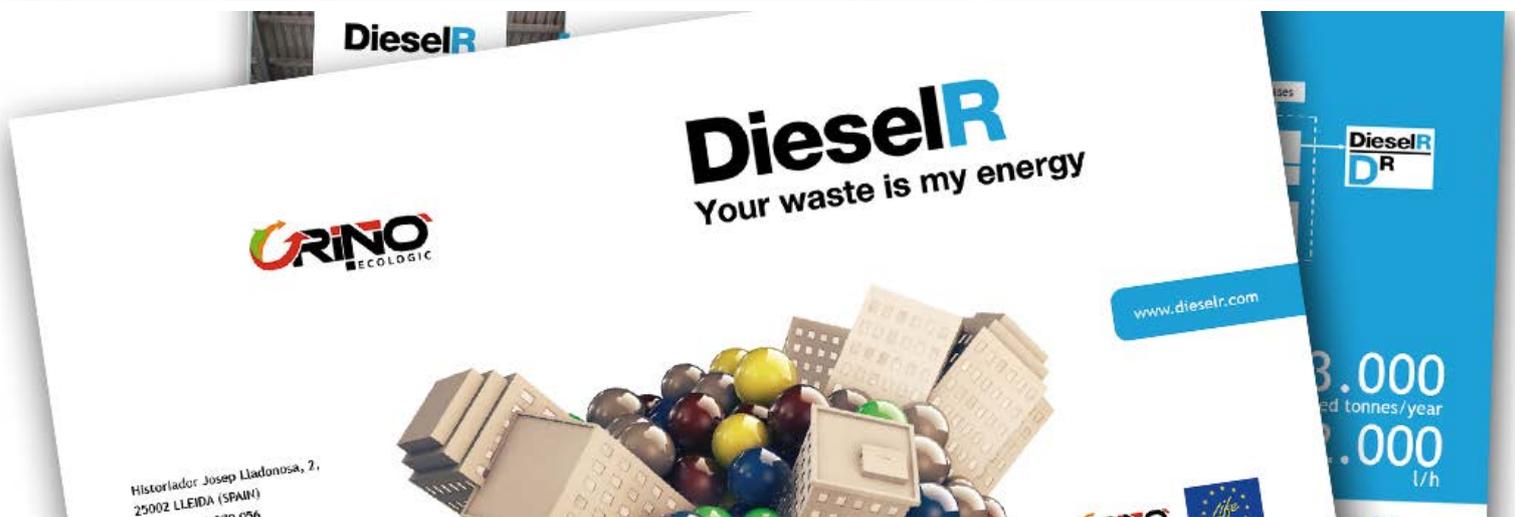
There have been organized more than 50 visits at the Demonstration Plant from Constantí during the project implementation. Over 110 skilled technicians, more than 75 representatives of government and more than 120 students from various schools of the territory visited the facilities of the project.

Some of these visits have been framed in technical conferences which counted on the participation of technicians from international companies. The company possesses an exhibition space where these exhibitions took place.



☰ Publications

The project had 17 media appearances: 4 local press appearances, 10 appearances in national press, 1 in trade press and 3 appearances in official bodies and also disseminating information material such as catalogs and brochures.



≡ Website and video

The project website (www.dieselr.com) has been developed in order to publicize the project through internet. The website contains general information about the project and its participants.

During the implementation of the project has also been developed a short video of about 5 minutes long, which has been used during the plant visits and the technical workshops organized for the promotion of the technology.

DieselR
Your waste is my energy

HOME • WHAT IS IT • LIFE+ • MULTIMEDIA • LINKS • CONTACT

ABOUT US • THE PROJECT • EXPECTED RESULTS • METHODOLOGY • PARTNERS

ENGLISH
CASTELLANO
CATALÀ

SEARCH

NEWSLETTER
Email

LIFE +

GRINÓ

Griñó ecologic focuses its activity in the environmental services and green energy generation

The GRINÓ Group, under the brand name GRINÓ Ecologic, is the head of a group of industrial companies that focus their activity on environmental management and services, on supplying technology and on offering consultancy services.

The holding company, which offers an integral cover of waste management and treatment, has three main business divisions:

Service and transport
Waste treatment
Supplying technical
supply of turnkeys

Quality and control
arguments for
guarantee for 1
and their surro

Aware of this 2
customers, the
introduce a Qu
obtaining the 9

DieselR
Your waste is my energy

HOME • WHAT IS IT • LIFE+ • MULTIMEDIA • LINKS • CONTACT

ENGLISH
CASTELLANO
CATALÀ

SEARCH

NEWSLETTER
Email

LIFE +

GRINÓ

SITE MAP • LEGAL NOTE



Historiador Josep Lladonosa, 2
25002 LLEIDA (SPAIN)
Tel. +34 973 279 056
Fax. +34 973 264 002
grinyo@grinyo.com