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## THE FIRST SPANISH SECOND GENERATION OF BIOCARBURANTS

*The IUCT-S50 biocarburant has come forward a decade before the predictions*

In the recent position document (June 2007) issued by the European Association of Bioindustry (EUROPABIO) referring to the biocarburants “*Biofuels in Europe and EuropaBio position and specific recommendations*”, it is mentioned the need for the investment in research and development of second generation of biocarburants, optimizing the use of agriculture prime materials and minimizing the socioeconomic impact produced by the present biocarburants

The same report indicates that a minimum of 5-10 years are required for the development of a second generation of biocarburants based on the use of a more diverse biomass compare with the present biomass used for this propose

IUCT has move forward a decade the proposed date since it has discover, after a long research and discovery process, a new biocarburant (IUCT-S50) for diesel engines, which represent the beginning of this second generation of biocarburants.

This biocarburant is based in the possible maximum utilization (100%) of the used biomass in the biodiesel manufacturing. IUCT-S50 is fully compatible with classical biodiesel, at the same time of an additive with it, since it allows the optimization of the investment carried out in the first generation biodiesel manufacturing plants.

### IUCT-S50 Strategy

During the biodiesel manufacturing a byproduct/residue, namely glycerin, is generated. This glycerin was quite useful when the number of biodiesel plants were few, and it was possible to be sold increasing, then, the yield of the manufacturing plant. However, currently and in the near future (Where so many biodiesel manufacturing plants are

under construction), society is unable to absorb the tones and tones of glycerin (glycerol) produced in this process, dramatically lowering the prize of the products up to a point that glycerin has become a residue because it has not being possible to be sold event at the prize of its calorific value, hence doping the yield of the biodiesel plants.

Residual glycerin obtained in the process of biodiesel manufacturing represent 10% of the weight of the prime material used. As this 10% of the biomass is considered lose, as it is not integrated in the biocarburant. IUCT-**S50** is obtained from this residual glycerin based in an industrial scale viable manufacturing process without any other byproduct generated.

IUCT-**S50** is based in the integration of the 100% of the renewable prime materials used in its manufacturing. Furthermore, it uses the residual biodiesel generated in the classical biodiesel production. Therefore, if an IUCT-**S50** plant is installed close to a classical biodiesel plant the global yield will be increased, since all the income biomass (oil) will be transformed in biocarburants (part biodiesel part IUCT-**S50**). Consequently, we are introducing a new second-generation biocarburant that optimize the use of the agrarian prime material and, hence, minimizing the socioeconomic impact.

Economic impact.

The analysis of the evolution of the biodiesel consumption in Europe jointly with the forecasts based in the European directives approved by the European Parliament shows a constant increasing percentage of the biodiesel generation as outlined in the table below

<b>Consumption/production data</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2010*</b>	<b>2020*</b>
Millions Tones/year of Biodiesel consumed in Europe	145				172	199	226
% of Biofuel to be consumed according to the European directives					2%	5,75%	10%
Real or estimated consumption (%) of Biofuel in Europe			0,5%		1%	4%	
Millions of Tones/year of European Manufacturing Capacity	0,8	1	1,5	2	3,4	7,9	22,6

*Several sources, including the aforementioned report*

*\*Estimated data*

This biodiesel production data implies a total glycerin production as byproduct shown in the table below. This glycerin is the prime material for the IUCT-**S50** manufacturing, therefore this data allows a maximum if IUCT-**S50** production as shown in the table below.

<b>Millions Tm/year</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2010*</b>	<b>2020*</b>
Millions of Tones/years of biodiesel Produced in Europe	0,8	1	1,5	2	3,4	7,9	22,6
Millions of Tones/Year of <b>Glycerin</b> as byproduct Produced in Europe	0,08	0,1	0,15	0,2	0,34	0,79	2,26
Millions of Tones/Year of <b>IUCT-S50</b> Produced in Europe*	0,32	0,4	0,6	0,8	1,36	3,16	9,04

*Several sources, including the aforementioned report*

*\*Estimated data*

The European market could be supplied, then, with a net revenues, assuming that the average prize per tone is 750€/Tm, of:

<b>Market</b>	<b>2005</b>	<b>2010*</b>	<b>2020*</b>
Millions of Tones/Year of <b>IUCT-S50</b> Produced in Europe*	1,36	3,16	9,04
Annual maximum net revenues of <b>IUCT-S50</b> (Millions €)	1.020,00	2.370,00	6.780,00

*Several sources, including the aforementioned report*

*\*Estimated data*

## CURRENT STATE OF THE INVENTION, INVESTMENT AND EXPLOITATION

IUCT has been more than **7 years researching** in the field of biodiesel and in the residual glycerin derivatives, which meant a great investment in the R&D to develop IUCT-**S50**, reaching more than **7 millions of €** between the direct cost of the project, the pre-existence know-how needed to obtain the current results and the pre-industrial development.

This discovery has been properly protected to be internationally exploited through a **world patent**, allowing IUCT to exploit this discovery in a great number of countries from the 5 Continents.

This discovery has a great international impact, proved by the fact that it has been currently negotiating technology **exploitation and transfer agreements** with some of the most important petrol companies in Europe and Spain, as well as with important United State investors to transfer manufacturing and commercialization rights of IUCT-**S50** regionally in different markets

On the other hand, IUCT is completing the pre-industrial development phase to ensure the maximum quality and efficacy of the product within the next 9-18 month.

Signed,

Josep Castells Boliart

*CEO and General Manager*