



THREE-PRONGED STRATEGY FOR THE INTEGRATED PROMOTION OF THE BIODIESEL CHAIN



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Project *PROBIO*

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1. INTRODUCTION

According to the results obtained in the participating areas, the Consortium has elaborated a conceptual and all encompassing strategy integrated promotion of the biodiesel chain along three main axes: MARKET, PROMOTION and TRAINING.

This strategy is mainly based in actions that should be carried out during the following years by means of the development of the PROBIO Project as well as the development of other local activities in participating areas involving the main public bodies and local actors. The establishment of the strategy has been done with the collaboration of the Expert Panels, the internal bodies of the PROBIO Project integrated by all relevant experts in the biodiesel field.

Here is the table with barriers detected in the participating areas:

	TECHNICAL	ECONOMIC	SOCIAL	LEGISLATIVE
PRODUCTION	Genetic improvement, research vegetable species-varieties, competitiveness in relation to imported vegetable oils, specific machinery, climatic circumstances, insufficient subventions.	High production costs, lack of stability for farmers, value of By-Product glycerine, many administrative constraints, intensive rise of prices of corns, no agreements between loc. authorities, distributors and consumers.	Lack of “farmers’ awareness and training, lack of acquire more productive species, absence of knowledge and machinery for new crops, lack of marketing campaigns.	Not allowed by law to sell more than 5% biodiesel fuel in the distribution network, unsuitable state and local community part by the quicker biofuel introduction, to little attention assigned to biofuel production in the reg. development programmes.
DISTRIBUTION	Biodiesel storage, lack of distribution network and logistics, biodiesel mixture.	No guarantees from distributors.	Passiveness of the automobile manufacturers towards the promotion of biodiesel use in vehicles, information and training for the dealers to transmit to the clients, lack of marketing campaigns, not enough information about petrol stations with biodiesel.	Lack of a legislative obligation that forces the large companies to commercialize biodiesel, local administrations cannot carry out awareness campaigns, no assurance of repurchasing of biodiesel.
CONSUMPTION	Doubts and risk for new product, several different products in the market, distorted information from car business firms.	No agreements between loc. authorities, distributors and consumers, to long repayment of investment for the vehicles modification.	Social lack of information and awareness (also to students), pre-established ideas on damages in the engine, lack of marketing campaigns, low ecological and technical awareness, doubts and risks for consumers, low connection of the involved subjects.	Low ecological and technical awareness, no specific regulations about biofuels consumption on regional or on local level.

The strategy has been split into the following categories:

- ✓ Actions aimed at bridging the TECHNOLOGICAL BARRIERS
- ✓ Actions aimed at bridging the ECONOMICAL BARRIERS
- ✓ Actions aimed at bridging the SOCIAL BARRIERS
- ✓ Actions aimed at bridging the NORMATIVE BARRIERS

2. ACTIONS AIMED AT OVERCOMING TECHNICAL BARRIERS

BURGOS (SPAIN)

Reorganization of crops and the promotion of new species and varieties

As one of the main technical barriers at local level is the difficulty of obtaining local raw material due to the insufficient subsidies and subventions for energy crops and the lack of public support for local raw material, the solution could be the **reorganization of crops and the promotion of new species and varieties** (for example, promotion of rape instead of sunflower). The representatives of the Agriculture Associations and the Energy Agencies agree in this point. That's why the main actions proposed to be carried out in order to improve the production of raw material are:

- Elaboration of a **complete study on energy crops and cultivation practices**, including the current situation (crops, cultivation practices, arable land) and the real potential of the province (best species and varieties, expected yields, available arable land, best cultivation practices, etc.) according to the climatologic and geographic characteristics of the area. This study will provide farmers and agriculture associations very useful information in order to reorganize the energy crops and obtain more benefits.
- Celebration of **specific courses aimed to farmers** in order to teach them all these issues and the best way to obtain good yields with the most appropriate species. These courses must include practical visits to real experimentation fields of energy crops, so they should be celebrated in different months, depending on the growth of the different species and varieties.
- Celebration of an **Info Day in Burgos about energy crops**. It will be aimed at farmers and other target groups, explaining them the economic and environmental advantages of cultivating this kind of crops. Other issues regarding biodiesel will be dealt as well during this event.

These activities will create a favourable framework for the development of the energy crops at provincial level as well as improve the general awareness about these alternative crops between the agriculture sectors.

On the other hand, as there aren't enough investments to set up oil extractor and refiner plants, the public bodies should **promote the construction of these installations**.

Another possible solution for the obtaining of local raw material is improving the waste-oil collection network. Waste-oil is, nowadays, the main raw material for biodiesel production plants, so it's necessary to expand the current collection network. This idea comes from the local waste-oil management company. In this sense, the possible actions to be implemented in the provincial strategy are the following:

Waste oils collection

Elaboration of a **complete study of the existing waste-oil collection network**: companies or public administrations that develop the network, collection points (type and location), processing of the waste-oil, etc.

Expansion of the waste-oil collection network by means of **possible agreements between local administrations and waste-oil management companies** to establish new public collection points.

Expansion of the waste-oil collection network by means of **possible agreements between waste-oil management companies and specific markets or shopping centers** to establish new collection points in these places.

Apart from the difficulties of obtaining local raw material, there are several technical barriers affecting the biodiesel distribution process. In this sense, the Expert Panel in general and the producers, distributors and automobile sector in particular consider that public administrations must **improve the biodiesel standardization and certification measures** so that the automobile sector reduces its passiveness towards the promotion of the biofuels use in vehicles. In this sense, the Spanish Association of Renewable Energy Producers (APPA) and the Spanish National Energy Agency (IDAE) are working together in a control campaign to analyze the quality of the biodiesel sold in Spanish petrol stations in order to demonstrate to the National Association of Automobile Manufacturers that the biodiesel sold is perfectly compatible with the mechanism of almost all new diesel car models. These actions should be taken at national level, but as it has been explained these actions are ongoing.

AVILA (SPAIN)

Waste oils collection

The main purpose of this action is to understand the main weaknesses in the existing collection networks in the province, as a technical barrier, taking in account the difficulties could be found to manage at a logistic level, as for example the remote routes foreseen with the necessary level of regularity, the necessary containers, and the problems when the containers are plenty of oil, some problems in winter with the oil freeze possibility, in order to analyse the best practices to be implemented in other regions / countries.

On the other hand is going to be analyzed the possibility of the waste oil collecting of used cooking oil as a raw material for the biodiesel factories.

Comparative study of energy crops and cultivation practices

In order to surpass on of the most important technical barrier detected it is going to be analyzed the comparative current cultivation practices and different energy crops, based on the previous extensive data collection, this study will be subcontracted by Burgos partner, and developed in Burgos, Avila and Huelva provinces.

This Comparative Study should make known the current arable area dedicated to energy crops and the most suitable crops and ways to cultivation in accordance with geographical and weather conditions in each province, taking in account the supply guaranteed of seeds beside the special features of biodiesel product comparing with other fuels in the normative and therefore the confidence of the market.

HUELVA (SPAIN)

Actions to overcome the “Adhesive of Non biodiesel” barrier

- The national government must guarantee the biodiesel quality. This action could eliminate the negative advertising from the ANFAC, Association of taxi drivers, garages....
- This action must be accompanied by a positive campaign about the use of biodiesel in the cars.
- Would be very positive that the CE promotes great campaign beside great companies of cars.

Actions about technical barriers in the agriculture

It is necessary a study about the energy crops in our province (this is a task of the PROBIO project). We need to know our potential in energy crops and how we can cultivate it.

- Once we have the study, we must teach the farmer about how cultivate these new crops (task of the PROBIO project).
- The national and regional Governments must spend much money to research the new crops. We need to produce crops with higher yields in oil.
- The CE must assign funds to the agriculture production not to the cultivated hectares. It's necessary to use other type of European agrarian policy.

POMURJE (SLOVENIA)

Analysis of the waste oil collection network

The project partner Sinergija will examine the situation of the existing oil collection network in Pomurje region and will analyze the barriers preventing, that more and more catering objects, kindergartens, schools and other objects with large quantity of waste oils would incorporate in network of waste oil collection.

The purpose of analyzing the waste collection network is to understand the main weaknesses in the existing collection networks in participating regions, analyzing the best practices to be implemented in other countries of the European Union.

At first, we will communicate with the municipal companies in our region to check out, if they are already collecting waste oils. Then we will present them the PROBIO project and how can they collaborate in this project for cleaning the environment. If the municipal companies have already their own waste oil collection network, we would help them that more objects will incorporate in this network.

We will try to expand the waste oil collection network with many promotional activities and with transport exhibition in the cities of the Pomurje region.

With increased number of incorporated objects in the waste oil collection network the quantity of waste oils will be increased and so the supply of the raw material will improve along with increase of raw material supply for biodiesel plants.

Longer term results will be the positive increase in the number of the job posts and the creation of the favorable conditions to stimulate the further growth of the biodiesel production and consumption on the local level along with the associated services.

ABRUZZO (ITALY)

Most of the local actors involved in the biodiesel supply chain, but mainly the farmers associations and biodiesel producers point out that one of the main technical barriers is the difficulty of obtaining local raw material. Nowadays, energy crops for biodiesel production (sunflower, rape, soya...) represent a really good alternative activity for the development of rural areas, but local actors remark that it is highly necessary to change local cultivation conditions. At the moment most of the raw material used by biodiesel plants is imported from foreign countries.

Comparative study of energy crops and cultivation practices

It is important to teach farmers how to cultivate energy crops, which are not very common in participating regions yet.

Some of the facts detected as the reasons of this situation are the following:

- 1) little/medium-sized companies,
- 2) firm location: potential available rural areas are in the marginal side of inner and piedmont hills,
- 3) low/medium productivity of these crops.

Research on energy crops and culture systems, show that the best species, suitable in Regione Abruzzo, are sunflower and rape, because of their productivity and their related conservative cultivation system.

Sunflowers is a summer-spring cycle species, characterized by moderate thermal needs and by low temperature resistance during the first development phases, short biological cycle, high adaptation to low water supply. Agrarian arable areas of Regione Abruzzo is certainly suitable to sunflower cultivation because of its high adaptation in plain land and bottom valley, besides high and medium hill.

Also in a technical-agronomic point of view it represent a good cultivation in the rotation of crops and it can be suitable between cereal and straw cycles. In fact its spring sowing and its short spring-summer cultivation cycle allows a rational crop rotation and a flexible business management.

Sunflowers cultivation should be improved by complete information and financial support to farmers, this way energy crops could become competitive with food crops. Nowadays cultivated fields area is only 4.718 Ha, that represent the 3,28% of the national level. Annual production is about 9.130 tons.

Also colza is a good energy crop, because of its high oil percentage (42-45%) and proteins (20-22%) in its seeds. By pressing and by extraction (using solvents), from 100 kg of colza seeds can be obtained 41-42 kg of raw oil and 54-56 kg of extraction flour. This kind of oil is one of the most used vegetables fat at world-wide scale and its trade comes just behind soya and palm. Regione Abruzzo, as all of the other central Italian regions, it's suitable to its

cultivation, if a minimum of water supply during bloom and siliqua growing phases is ensured.

Together with sunflower also colza use can be promoted informing farmers that it contributes to improve soil fertility, because its minerals fall on the soil through cultivation residues. Nowadays cultivated fields area is only 3 Hectares, that is an insignificant percentage compared to the national level.

To recover more agricultural areas to energy crops within an agronomic-energetic chain, its necessary to set a complete development program, to put together a transversal professional partnership of producers, processing plants, storage and distribution points, representatives of consumers. First of all, it's necessary to detect cultivable areas and the availability of farmers to cultivate sunflower and colza, as long as the product marketing is ensured and economic-financial incentives are granted.

Moreover the production of oleaginous plants can be further stimulated, setting off of by-products esterification process such as glycerine, that can be used in food industry to produce syrups, drinks, bakery and conservation of the fruit and vegetables products. Glycerine obtained from vegetable oils esterification contains high amount of potassium, and its removal can be carried out by rectifying systems but they don't yet exist in our regional territory. For this reason all the produced glycerine now is exported abroad, in particular in China.

By the treatment of these crops, the 40% of product is oil, the 60% is biomass, that can be used as feedstuff or can be burnt, therefore an annex combustion plant can be a good technical solution: thermal energy coming out from biomass combustion can be used in drying process during pressing seeds phase. That solution would lead also economic advantages.

3. ACTIONS AIMED AT OVERCOMING ECONOMICAL BARRIERS

BURGOS (SPAIN)

Innovative tax cuts to the usual biodiesel consumers

Biodiesel could be more competitive in comparison to the traditional diesel at local level if local public administrations offer **innovative tax cuts to the usual biodiesel consumers**. In this sense, the proposal of the Burgos Energy Agency and the biodiesel producers of establishing these cuts in the Municipal Vehicle Tax was highly appreciated by the rest of the Expert Panel. In Spain, this kind of tax cuts is already in force in some cities and the results are very positive. In the case of Burgos Province, the Energy Agency will promote these actions between the main municipalities of the province. Biodiesel consumers who want to profit from these initiatives should demonstrate the use of biodiesel in their vehicles by means of different systems (biodiesel points card, biodiesel certificates, etc.). Tax cuts depend on the municipality, but Burgos Energy Agency will propose to allow a tax cut. In case this option isn't possible, Burgos Provincial Energy Agency will promote awards

associated to the consumption of biodiesel or free tickets in the municipal car park ticket machines.

Commercial agreements between the different sectors related to the biodiesel chain

Nevertheless, what can be done at local level is the promotion of new distribution points. In the Expert Panel opinion, it's necessary to extend the distribution points network in order to stimulate the production and distribution processes at local level. In this sense, Burgos Provincial Energy Agency will promote commercial agreements between the different sectors related to the biodiesel chain. The Agency can work as a mediator, putting the different parties together and acting as the representative of the consumer sector. Thus, the Agency will promote the following agreements:

- **commercial agreements between distributors and municipalities** in order to establish **new selling points** in the city or authorising the opening of new petrol station supplying biodiesel,
- **commercial contracts between distributors and municipalities** in order to offer competitive prices for the City Council so that they can **use biodiesel in their municipal fleets**,
- **agreements with markets or shopping centers** to encourage them to install new biodiesel distribution points in their own petrol stations,
- **commercial agreements between distributors and large consumers** (transport companies, taxi drivers associations, agriculture cooperatives, etc) and distributors to promote the use of biodiesel in their vehicles **promotion days** where the wasted oil is changed by biodiesel

AVILA (SPAIN)

Commercial agreements between large consumers and distributors

The purpose of this action is to promote the use of biodiesel among large consumers, such as farmers, taxi drivers, auto-driver schools, transport and logistic companies ...etc. The Avila Energy Agency will operate as a facilitator of the agreement, spreading information and putting in contact the distributors with those consumer groups in a coordinator and intermediate role. This action will contribute to surpass some of the economical barriers detected in the previous analysis.

The Avila Energy Agency will try to involve in these agreements our province municipalities, offering and an advice on the most suitable use of biodiesel, and promoting the use in the municipal fleets.

HUELVA (SPAIN)

In Spain, biodiesel is cheaper than diesel. But the "Non biodiesel" label make that consumers prefer fill their tanks with diesel. It is necessary reduce the price of biodiesel to stimulate the consumption. The National Government should assign funds for it.

To promote the energy crops is necessary that the Administration promote the biodiesel producers to buy the local production of energy crops by commercial agreements.

POMURJE (SLOVENIA)

The economical barrier of the higher price of the biodiesel in retail trade, we will bridge with reestablishment of cards system strategy, mentioned above. High prices of biodiesel are not competitive with fossil fuels prices. The experts' opinion is that decrease of retail trade prices of the biodiesel would cause competitiveness of biodiesel to fossil fuels.

With a help of cards system Sinergija will try to make the purchase of biodiesel more attractive to the customers. The customers, who collect the define number of points, will get the discount by the next purchasing of the biodiesel.

Commercial contracts between large consumers and distributors

We will try to connect the biodiesel distributors and relevant agents with those, who is interested in biodiesel such as farmers, taxi drivers, carriers... On the other hand, it is important to promote the creation of micro installations owned by this kind of associations, because they are involved in different phases of the biodiesel cycle. Thus, they could produce biodiesel by themselves. It could be an opportunity to diversify to other areas as well as they cover their main necessities.

With execution of this strategy we will accelerate the biodiesel introduction in the transport and we will try with commercial contracts between large consumers of the biofuels to create favorable conditions for introduction of biodiesel on the market and the biodiesel production increase.

ABRUZZO (ITALY)

Promote new trade measures and agreements between local authorities, producers, petrol stations and consumers

Before talking about economic barriers it is necessary to solve constraints on behalf of the Italian Finance Ministry. This is the first step to launch biodiesel in Italy and therefore in Regione Abruzzo.

Nevertheless, the representatives of biodiesel producer also pointed out that at the moment there are so many administrative constraints (especially on transport issues) that oil companies are almost not buying biodiesel anymore.

Undoubtedly the economic aspects represent a big barrier to exceed. Farm Companies of Abruzzo are little-sized and they're not involved and informed about biomass production for energy uses (both forestal and agronomic biomass). In fact energy crops for biodiesel production don't represent yet an economic alternative to food crops, there are not regional programs to ensure financial support and there is not a complete production chain ready to be used, in particular oil extraction plants.

Besides the solution already proposed, it is necessary to promote new trade measures and agreements between local authorities, producers, petrol stations and consumers. Furthermore Ministry of Agriculture should give incentives to promote biodiesel chain, this way farmers would have profits by energy crops cultivation.

To exceed economic barriers the proposal is to plan a pilot scheme in a vocation area of Regione Abruzzo, where to set a biodiesel production chain, promoting stable and clear agreement between all the chain actors (farmers, oil producers, local authorities). Economic sustainability is ensured if all biodiesel chain is locally developed (from producer to consumer).

ARSSA, Regional Agency for Agriculture could be the coordinator of all the chain aspects: agronomic support to farmers, biodiesel production, research and test activities of the agronomic aspects. To complete the chain it is necessary to have local biodiesel production installations, in order to reduce transport costs. A local complete chain would give the farmers a partner they can really interface with.

4. ACTIONS AIMED AT OVERCOMING SOCIAL BARRIERS

BURGOS (SPAIN)

Information, dissemination and promotion activities.

The main social barrier was detected in the last link of the chain: consumers. This barrier has been noticed by all the local actors of the biodiesel chain and it's the social lack of information and awareness about the use and consumption of biodiesel between general public. Not only is this general lack of knowledge the cause of the current low rates of biodiesel consumption, but also some disinformation widespread between drivers and consumers about the negative effects of the use of biodiesel in the vehicles mechanisms. This situation makes consumers be more reticent on the use of biodiesel. Due to this, all the local actors assume the necessity of increase the information offered to particular drivers and potential big consumers. In this sense, some of the potential consumers demand complete but simple, clear and understandable information, which allows biodiesel to be identified as a guaranteed product. That's why the main actions to be implemented in the strategy are **information, dissemination and promotion activities.**

Most of these activities will be aimed to general public and their objective will be to increase the general knowledge about biodiesel and reduce the false information widespread between drivers and consumers:

- **Biodiesel and transport exhibition.** An itinerant exhibition will be created and displayed around the province, visiting different cities. This exhibition will be intended for the general audience and will be organized in a very accessible and public spots. The main contents the exhibition will try to explain are: biodiesel (what's biodiesel, how it is produced and distributed), consume of biodiesel (how it can be consumed, advantages), benefits of biofuels in general and biodiesel in particular in transport sector, current situation of biodiesel in our province, etc. The exhibition will be

characterized by having information panel, audiovisual resources and other information material.

- **Development of a “biodiesel points card” system.** This system, which will be implemented in all the petrol stations supplying biodiesel in the province, will promote the use of biodiesel between drivers as well as measure their biodiesel consumption (this will be very useful to award the tax cuts previously described). Apart from the tax cuts, which have to be approved by the municipalities, this system will encourage consumers to use biodiesel offering them different prizes like merchandising products.
- **General promotion of biodiesel** in a specific awareness campaign using the local Media: radio, local TV adverts, articles in specialized publications, etc.
- **Edition and distribution of information and promotional booklets.** As there are important differences between the target groups, two different info booklets will be edited: one addressed to the general public and the other, more specific, addressed to specialized authorities, biodiesel distributors, farmers, etc.

Apart from the lack of awareness between general public, another barrier detected is the lack of formation and information between the involved sectors (employers of petrol stations, maintenance and repair services and car dealers). In this case, it would be a very advisable measure to train and inform these employers organizing **specific information sessions aimed at these professionals** so that they can promote biodiesel use with self-confidence and answer consumers their possible doubts.

AVILA (SPAIN)

Development of biodiesel points card

In order to achieve the consumer's fidelity to the biodiesel, and as an action to promote the biodiesel use among general public which allow surpassing some of the social barriers detected. The profit is mainly for the consumers who are going to obtain some benefits with the measures foreseen and by the other hand the biodiesel petrol stations because are going to sell more fuel than the others, and they are going to be known by consumers from other petrol stations without any cost for them. The card will register the use of biodiesel with a usage measuring system.

This action will be completed with the biodiesel brochures distribution (see this specific action) in the petrol stations involved in the project and with the Itinerant Exhibition.

Training courses for farmers

Based on the previous Comparative Study, this course will intend to provide farmers with the best techniques to increase the performance of their crops and types of suitable seeds for Avila province conditions, trying to surpassing that technical barrier about the crops detected in the first Expert Panel Meeting, where was detected as the life cycle, genetic improvement, low iodine content, identify if is necessary specific machinery for new crops.

Farmers will follow a practical and theoretical training sessions, 20 hours; the main idea is to explain them the economic and environmental advantages of cultivating this kind of crops. It will

be able to visit some biodiesel factory to approach to the next step of the biodiesel chain and have the possibility of compare the waste oil and the vegetable oil as raw material for these factories.

Training seminar for mechanical garage staff

An important barrier was detected as a result of those meetings, it was the garage mechanical staff, who often give advices to their clients against biodiesel based on a part of ignorance about biodiesel behaviour in the engines. This is one of the worst publicities and campaign for this product. Therefore is going to be organised a seminar, 4 hours, explaining the biodiesel features in a technical point of view beside the environmental.

This training programme will be offered to the Avila Garage Association, and try to surpass this important social barrier.

Training seminar for petrol station staff

The main and only connection between consumers and the biodiesel frequently are the dealers at petrol station, this means this staff must be trained in order to advise consumers with the correct data and information.

This action will be completed with the distribution of biodiesel brochures too.

Biodiesel itinerant exhibition

With the main objective of a Public Awareness Campaign as a contribution to surpass the great social barrier, it will created an itinerant exhibition on biodiesel for Avila province, travelling from a place to another, with a week or two weeks of permanence in each place, the exhibition is intended for the general audience and developed in a very accessible and public spot, with so many pictures, graphics, short text, video, raw material, ...etc., showing the advantages of biodiesel, a map with biodiesel petrol station located. This action is going to be contracted by Avila partner. The surface will be about 60 m², with own lighting.

The exhibition will be offered to all municipalities in our province, and all the educative centres and schools, it will be free of charge, and it will be open to the general public.

The exhibition will be completed with exhibition Poster, a Roll-up (80cm x 200cm) to signal the exhibition and biodiesel brochures. It will be available a short Guide for the teachers at schools.

PROBIO Project brochure

As a complement for all the actions foreseen in this strategy will be distributed these brochures, the first one as a project brochure with information relative to the partners, co-financing by Intelligent Energy Programme, main goals of the project, contact phones, web site.

This brochure have been distributed to expert panel members, attendants to Avila Energy: European Congress on Renewable Energy and Energy Efficiency, Renewable Energy Work School students, Renewable Energy Course students, therefore is focused on specialized public.

Biodiesel brochure

The Biodiesel specific brochure is focused on general public, and the main goal is to spread the biodiesel as a renewable energy among people, including students, as a contribution to sustainable development, it will be a complement for the itinerant exhibition as a way to fix the knowledge, and for biodiesel petrol station dealers to reinforce the information learnt, the attendants to Avila Renewable Energy Days, and any event that Avila Energy Agency participates and last to our own data base.

The main goal of this action is to surpass the important social barrier, discovering the biodiesel advantages and giving answer to the possible disadvantages, avoiding the incorrect information about features.

Presence in events

The PROBIO project will be present in all those events that Avila Energy Agency will participate as for example: Avila Renewable Energy Days, where will take place a specific communication on the project in the framework of the general programme as a contribution to inform about the other actions foreseen

On the other hand PROBIO project will be present at Expobionergia'07, an international Expo on Biomass, in the Avila Energy Agency stand, with a presentation in the computer, and the PROBIO Project Brochure.

With these actions, the objective is to spread the project to specific attendants and looking for the interest in this biomass renewable energy beyond this project as a continuation in time.

Other actions

It will be send an Agency newsletter to the data base spreading the PROBIO project and the web site www.probio-project.com.

On the other hand will be distributed the news bulleting to the Expert Panel members.

Several press notes have appeared in newspaper as a contribution to the general knowledge about the biodiesel in general and the project in particular. In this sense, the transnational partner meeting foreseen in Avila, in May 2008, will be a good opportunity to have a relevance presence at media in our province.

HUELVA (SPAIN)

Like we have exposed in previous paragraphs, to eliminate the social barriers is necessary more high quality information. This information can be provided by the Administration (Local, Regional, National and European Governments) throughout awareness campaigns, Media, exhibitions, etc. Huelva Provincial Government will develop most of these actions according to the PROBIO Project's Work Programme.

The Administration must also act as example to eliminate social barriers: public vehicles must use biodiesel and the Administration should show this to the citizens.

Huelva Provincial Government will also inform the professionals of the sector and promote campaigns to promote the use of biodiesel in our cars. Another important target group to work with is future drivers, including children and teenagers, so Huelva Provincial Government will carry out promotion and information activities with them.

POMURJE (SLOVENIA)

In the Pomurje region we note information awareness, promotional and communication gap. We also note that when the people find out something about biodiesel, they are interested to find out more. We have to accelerate the promotional and information activities.

Sinergija will present the advantages of the biodiesel supply-distribution chain, advantages of cultivating the energy crops, production and use of the biodiesel. It is important to accent the meaning of social and economical responsibility of everyone for environment, where we live. The target groups must be informed about different workshops, seminars and events, where can they take part.

Training courses for farmers

There are no educational programs specially designed for cultivation of energy plants and production of biodiesel either at the University of Agriculture or at the University of the Mechanical Engineering. The seminars about this subject appear from time to time.

Within the frame of agricultural guided companies of the Panvita Group it was designed a manual for the oil-rape production, brought out also at their web sides. Besides that, there is also an on-line expert on the telephone, who is ready to answer any question regarding oil-rape production, as well as to examine someone's field if needed and make advices directly on the fieldwork.

The Institute of Agriculture and Forestry in Maribor has organized some seminars subjected to oil-rape production. There is also an expert to advice the producers about oil-rape production. Besides that, they continuously publish their step advices in case of any plant disease or trouble in production during the current year.

The University of Agriculture Maribor will present to the farmers the economical and ecological advantages of the energy crops cultivation. Farmers will follow practical and theoretical sessions (totally 20 hours). The courses will stress sunflower and the rape seed oil production. For these courses the University of Agriculture Maribor with help of Sinergija prepare the didactic materials and the Guide of best practices.

In September 2007 the University of Agriculture Maribor and Sinergija have organized the seminar »From oil rape to biodiesel«, where general and special public was informed about PROBIO and specific issues of biodiesel production- distribution-consumption chain.

Sinergija will supply the farmers with relevant information and give them advices about cultivation the oil rape, answering their questions in the Sinergija office or by the phone. So we will accelerate the development of the biodiesel market. The biodiesel market will get more competitive to fossil fuels and the prices of the biodiesel will be lower and more accessible to consumers.

Sinergija is and will be the information point for everyone interested in the integrated promotion of the biodiesel chain. Together with the University of Agriculture Maribor we will organize the courses and workshops for farmers and students. We will present the best techniques for cultivation and the most adequately sorts of the energetic crops for specific areas to the target groups.

The presentation of the project PROBIO and advising about the oil rape cultivation, production, distribution and purchasing of biodiesel, we have executed in August 2007 on the Agricultural and Food Fair in Gornja Radgona. The target groups were farmers, generally public and many experts.

We will motivate the target groups to collaborate with Sinergija and then together we will organize events and bridge the information, awareness, promotion and communication gap. The University of Agriculture Maribor will endeavor to initiate the educational system with more subjects or topics about the energy crops cultivation and so it would be presented the meaning of the energy crops and clean environment already to the students.

Execution of the promotion activities

Sinergija has translated the PROBIO web page (www.probio-project.com) in Slovenian language, so it is accessible to widely circle of target groups. The project's web page presents the partners of the project, the objectives of the project, its outcomes and execution. The web page will be supplement with relevant information by Sinergija.

The PROBIO Project is also presented on the Sinergija Development Agency's web page of (www.ra-sinergija.si), where we inform the visitors about the energy crops consulting, production and biodiesel use.

Whenever there is relevant information on the web page, we will continue informing everyone who is interested about news, biodiesel, energy crops by e-mail or by post. The population in Pomurje region has to be aware of the fact that Sinergija is the information point for such advices; therefore we will encourage everyone to use our services.

With the Local Authority we will try to arrange the promotional activities of the biodiesel production and use with the help of the posters, info booklets, leaflets at the public places in their municipalities. The municipalities will promote the biodiesel also in their municipality newsletters.

Booklets and articles

In collaboration with the project partners we will prepare five project bulletins, where we will present the project, the implementation of the project and the activities for encouraging to energy crops cultivation, production and biodiesel use. The first bulletin has already issued, also in Slovenian language, and was distributed to general and special public during the Agricultural and Food Fair in Gornja Radgona. There is also information about the project

execution in Pomurje region, Slovenia, in the bulletin. Among the edited 200 bulletins, we have already distributed some of them to target groups and we will do the same with other four bulletins. The bulletins are published every six months, prepared by project partners on four pages in Spanish, English, Italian and Slovenian languages to be distributed to the target groups.

We will try to reach the target groups with attractive and concise elaborated web page, bulletins and other supportable information materials. We will prepare the articles with the PROBIO project presentation, its execution, its results, its conferences and others important events in Pomurje region.

With a help of mass-media we are going to present the biodiesel points cards system strategy to the target groups with the biodiesel pumps, included in cards system.

That social barrier we will try to bridge with already mentioned transport exhibition strategy. Project Probio will be promoted in public media, web page announcements, booklets.

Sinergija will cooperate by preparing the info and promotional booklets. In the first booklet we will try to explain to general public the actual European Energy context and the benefits of these kinds of fuels. And the second booklet, addressed to special authorities, biodiesel distributors, farmers associations and big consumers associations, will deal with the following issues: general information of the European Energy context, National and local regulations regarding the transport sector, benefits of this kind of fuels for the biodiesel producers, distributors and their clients and emerging market for farmers.

With this awareness campaign we will explain to the target groups the meaning of the production and use of biodiesel and we will bridge the social barrier of the lack of promotional activities.

Biodiesel and transport exhibition

As we have already mentioned, we will promote the PROBIO Project, advantages, opportunities, weaknesses, deficiencies of the production and use of the biodiesel with special equipped van with mobility exhibition of:

- info booklets, leaflets, pictures,
- color posters with text,
- seeds of energy crops,
- samples of the biodiesel in capsules,
- presentations on LCD, etc...

The van will be travelling from one city to another within the Pomurje region during 1-2 months, covering at least the main five cities. The professional associates will be presenting the project PROBIO at public places for target groups, as well as the advantages of using biodiesel, answering the questions, distributing info booklets... Some people are afraid of using biodiesel in their cars, because they think, that biodiesel will damaged the engine. The professional associates are going on this spots to explain the advantages of biodiesel use to the target groups and will try to change their wrong opinion about biodiesel use.

The mobility exhibition will be characterized by the following:

- ✓ integration of raw material production and consumption in biodiesel supply chain,

- ✓ corresponding video and text support to provide the appropriate info, equipment functioning, crops...
- ✓ located in a highly public spot and open to the public,
- ✓ support from the local biodiesel producers and distributors,
- ✓ promotion of bio-fuels.

Biodiesel bonus card

Petrol distributors don't offer to the customers pure biodiesel and that is what Sinergija will achieve together with local producer for reestablishment of the 5 biodiesel stations and cards system to annotate the use of biodiesel - biodiesel bonus cards.

Sinergija has already communicated with the local producer of biodiesel for collaboration in this matter. Further we will arrange a meeting with the local producer, where we will discuss the cards system reestablishment to annotate the use of biodiesel at 5 biodiesel stations.

Then we will communicate with the stations and we will try to persuade them to include themselves into this bonus cards system. Five interested petrol stations will be included into this bonus cards system, which will cooperate with local producer. The customers will be able to get the biodiesel bonus cards at those five stations.

We will prepare the scheme and the outlook of the biodiesel bonus card and then we will give it to the selected producer to design his individual biodiesel bonus card. On this card will be points. With the help of such cards the customer will be getting bonus points when purchasing the biodiesel. For the fixed number of points the customer will be getting discount by the next purchasing of biodiesel.

With this establishment of cards system to annotate the use of biodiesel, Sinergija will bridge the technical and economical barriers (the price of biodiesel isn't competitive), because on this way the purchase of biodiesel will be more attractive and more favorable.

ABRUZZO (ITALY)

Execution of the promotion activities

The main social barrier has been detected in the last link of the chain: consumers. This barrier has been noticed by all the local actors of the biodiesel chain and it's the social lack of information and awareness about the use and consumption of biodiesel between general public. Not only is this general lack of knowledge the cause of the current low rates of biodiesel consumption, but also some disinformation widespread between drivers and consumers about the negative effects of the use of biodiesel in the vehicles mechanisms.

The PROBIO Project is itself a solution to overcome this lack of knowledge, especially through the exhibition that will take place during the first months of 2008 in the four Abruzzo provinces. PROBIO Project will be promoted by guidelines, graphics, posters explaining what is biodiesel and the environmental advantages of its use, the productive cycle starting from

raw materials and the answer to the most common doubts (FAQ) about use of biodiesel especially on the possible damage on vehicles engine.

Graphics interfaces (schemes, draws, etc..), clear and simple information will help to remove as much doubts as possible.

There is the need to inform consumers and raise awareness among them in this particular moment when pasta and bread prices have gone up, citizens may think that it's due to energy crops.

Another important barrier is the lack of formation and information of the own employers of the petrol stations. In this case, is not yet the moment to take measures to train and inform these employers as there isn't any petrol station in Italy that sells biodiesel through a dedicated pump and also because of workers often changing.

This general lack of information isn't the only social barrier analyzed. Another important barrier detected is the passiveness of the automobile manufacturers sector towards the promotion of the biofuels use in vehicles. It has been detected a lack of commitments to give guarantees to the consumers for the use of biodiesel in the existent car models and an absence of technical information in the different links of the automotive chain, mainly in maintenance and repair services and car dealers. This lack of information is just the cause of several conflicts between car owners, petrol stations, repair shops, etc as in many cases mechanical failures are wrongly attributed to the use of biodiesel.

Measures to bridge these barriers have to be taken at a national level, involving producers of motor vehicles that should improve both research and information.

In Regione Abruzzo big car producers can be involved as there is a plan to open a big research centre to study innovative engines. This action could also help to bridge technological barriers.

5. ACTIONS AIMED AT OVERCOMING NORMATIVE BARRIERS

BURGOS (SPAIN)

As explained in previous points, Burgos Provincial Energy Agency will promote innovative tax cuts to the usual biodiesel consumers by means of **local ordinances** allowing this kind of cuts.

Finally, and according to the opinion of the distributors and the association of petrol stations, it was proposed to **create new lines of subsidies or subventions** at regional level so that the Regional Government can finance some of the costs assumed by distributors or petrol stations that want to install new biodiesel selling points (mainly repairs or adaptation costs) and **promotion days** where the regional government support the cost of the biodiesel. A meeting will be hold and a letter will be sent to Directorate of Energy and Mines of the Regional Government in order to propose these measures.

AVILA (SPAIN)

As explained in previous points, Agencia Provincial de la Energía de Ávila (APEA) will promote innovative tax cuts to the usual biodiesel consumers by means of **local ordinances** allowing this kind of cuts.

HUELVA (SPAIN)

Like we have exposed is necessary a new agrarian policy to promote the production, not the number of cultivated hectares. The Government must guarantee the quality of biodiesel and must create the system for it.

First the Administration must stimulate economically the use of biodiesel and then it must be obligatory. The local authorities can obligate to use biodiesel with local ordinances.

About tax and other legislative barriers is necessary a great political and economical effort.

POMURJE (SLOVENIA)

All the ordinances or regulations are adopted on national level and are in force in Slovenia. There are no any specific ordinances or regulations about biofuel consumption either on regional or on local (municipality) level in Pomurje region.

The important normative barrier to be faced is a lack of authority on regional level. And the mayors agree that more authority should be given to the regions. The centre of the decision-making should be transferred from the national to the regional level. The regional representatives or authority namely have better knowledge of what is needed and what project should be fostered and supported in the region. SINERGIJA and other NGOs will put their strengths together for persuading the national government for giving more authority to regional council or regional/local energy agencies. Incorporating biodiesel production into the regional development strategy is not intensive enough or even neglected – there is too little attention assigned to biofuel production in the regional development programs.

Sinergija will present the project PROBIO to the Local authority and the advantages of the energy crops cultivation, advantages of the biodiesel production and biodiesel consumption. With this strategy we will try to include the production and consumption of the biofuels into ***regional development strategies and programs*** so that they would prepare the measures on local level for stimulating the biodiesel production and use.

Local authorities should also work in closer cooperation with non-government organizations. NGOs can in many ways facilitate their work by means of introducing different proposals for regulations and certain steps to facilitate politics to be carried into real effect.

ABRUZZO (ITALY)

In Italy it is not allowed by law to sell more than 5% biodiesel fuel in the normal distribution network (for the general public), and this percentage is not indicated anywhere. Therefore, the customers are not aware of the fact that there is a percentage of biodiesel (max 5%) in the fuel that they bought. This percentage can be higher but only for extra network (tractors, agriculture vehicles, etc...). This is a big constraint on behalf of the Italian Finance Ministry which denies releasing the licence to those petrol stations that ask for the permission to sell biodiesel in a percentage higher than 5%.

For these reasons at the moment there isn't any petrol station in Italy that sells biodiesel through a dedicated pump that clearly indicates and promotes the biodiesel. Therefore there is a total lack of distribution network and logistics.

The solution to these barriers can be found only at a national level by normative measures, so it is not possible to bridge it at the moment and especially at regional level.

Anyway what can be done is to focus the problem at a national level involving consumers corporation such as Adiconsum and Assoconsumatori in order to push Italian government to make the autorizative process easier.

For extra network distribution the percentage of biodiesel in fuel can be higher (up to 25%) so it would be possible to promote its use in the public transport system, in example by an agreement between "Fox oil" and ARPA (public bus Transport Company of Abruzzo). This measure can be undertaken in short time than other ones, as in Regione Abruzzo (Vasto) there is already an working installation where to prepare fuel blends. Another solution can be to promote biodiesel in train transport system, by an agreement with Trenitalia.

Even if it is not possible at the moment to promote biodiesel in petrol stations network, a stopgap measure can be municipal installations as the one, already existing, in a small village located on the Apennines, called Pizzoferrato. This initiative foresees a petrol station that has its own club members as final users. This way it is possible to sell Biodiesel B25 which is not allowed in the rest of Italy.

This kind of measure can be furtherly improved by setting a Biodiesel petrol station in a commercial shopping centre where only local "bio"products are sold.

Comunità Montana del Medio Sangro (consortium of communes in Sangro river mountain area) is available to create a complete production biodiesel chain in its area and also to set a Biodiesel Route, a little consortium of extra-network petrol stations network where the biodiesel comes from the energy crops of its own area.

Another important perspective could be specific legislative measures to be passed shortly which make it compulsory for oil companies to put on the market 1% biofuel in 2007, 2% in 2008 and 5,75% in 2010. There will be certificates granted to those oil companies who will have to prove that they have bought or distributed 10 gigacalories of biofuel coming from the local systems.

6. CONCLUSIONS

The individual strategies of the project partners are similar as the main goal of this project is the same for all the partners: integration between production and consumption in the biodiesel supply chain in EU countries. This will be achieved by means of a three-pronged strategy based on the development of a concrete new market in our regions, promotion activities and training actions aimed at strengthening the weak points in the biodiesel supply chain.

All partners together have prepared the three-pronged strategy to overcome the detected barriers in participating areas. As we can see with some of the strategies can we bridge different types of the detected barriers. For example with courses for farmers can we bridge the technical barrier lack of awareness about cultivation energy crops or of the new species and varieties and the social barrier lack of information and awareness.

With the presented strategy PROBIO partners have drawn down several measures. Through the implementation of the actions in the table the partners will try to bridge the detected barriers in the participating areas and to reach the goal of the Project.

NEW MARKET	<ul style="list-style-type: none"> ✓ improvement of waste-oil collection networks ✓ commercial agreements between large consumers and distributors ✓ commercial agreements between local authorities and distributors ✓ development of biodiesel points card system 	Partners will promote new innovative market initiatives between local authorities, producers, distributors and consumers.
TRAINING	<ul style="list-style-type: none"> ✓ comparative study of energy crops and cultivation practices ✓ training courses for farmers ✓ training seminars for mechanical garage staff ✓ training seminars for petrol station staff 	Partners will teach the farmers how to cultivate energy crops, which are not very common in participating regions and about genetic improvement, vegetable species-varieties and specific machinery.
PROMOTION	<ul style="list-style-type: none"> ✓ biodiesel itinerant exhibition ✓ development of biodiesel points card system ✓ PROBIO project brochure ✓ Promotion of PROBIO Project in different events 	Partners will carry out a strong awareness campaign aimed to target groups promoting biodiesel consumption

Table 1. Three-pronged Strategy summary