Biofuel Cities

REPORT
The 2nd Workshop for biofuel end-users held in Sofia

This document provides a summary of the results from the second workshop for biofuel end-users that took place in Sofia, Bulgaria, on 03-04 December 2007 within the framework of the Biofuel Cities project.

The aim of the event was to discuss with a diverse group of end-users from the target region - Central, Eastern and Southern Europe - needs, wishes and perceptions of biofuels, as well as barriers and challenges they face or potentially need to consider. The focus was also on where opportunities have arisen and compare them with those discussed in the 1st end-user workshop held in Stockholm in May 2007.

The results will contribute towards the development of the European Biofuels Platform, and address the support that can be considered for end-users in particular.

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1. Brief introduction to the Biofuel Cities project

1.1 Introduction

The Biofuel Cities project has been launched to develop a European Partnership that will demonstrate the broad-scale use of new and innovative biofuel technologies. Biofuel Cities covers the complete chain from feedstock to biofuels production, distribution and utilisation in vehicle fleets.

One of the primary elements of the Biofuel Cities European Partnership is the development of a platform that can be used by various actors that are either already involved or interested in biofuels for transport. This platform will support actors with a range of information and services.

The Biofuel Cities project, which runs from mid-2006 to mid-2009, is a Co-ordination Action funded by the Sixth Research Framework Programme of the European Union, under the Activity "Alternative Motor Fuels: Biofuels Cities".

1.2 Project partners

The Biofuel Cities project consortium comprises of the following partners:

- SenterNovem (Co-ordinator) http://www.senternovem.nl
- Exergia http://www.exergia.gr
- ICLEI – Local Governments for Sustainability http://www.iclei-europe.org
- INEM http://www.inem.org
- IpiEO http://www.cln.pl
- NEN http://www2.nen.nl
- VITO http://www.vito.be

1.3 Platform for the European Partnership

An interactive website - www.biofuel-cities.eu – has been created to provide a range of information, tools and services, including the following:

- online resource centre
- 'Who-is-who' in biofuels in Europe
- open discussion forum

The Biofuel Cities website has two levels of access, one open to the public and one restricted access section for participants of the Biofuel Cities European Partnership. Both levels are useful for end-users. However, we encourage all interested persons to register to obtain maximum access to the information, tools and services.

Openly accessible sections:

- '**Newsroom**': This offers the latest information on biofuel applications in Europe. Here you also have the opportunity to subscribe to the Biofuel Cities Update e-newsletter as well as to the print newsletter Biofuel Cities Quarterly. Submissions in English are invited and can be sent to the Biofuels Secretariat.
- '**Events**': Details on important biofuel events in Europe are provided, including workshops organised by the Biofuel Cities European Partnership. External events are also published (in English - with a link to more information in other languages, if relevant).
- **'Projects and Activities Directory'**: This is an interactive directory of projects and activities related to the application of biofuels in Europe. Search for projects, through online maps or database searches.

- '**About**': Information about the Biofuel Cities project and the project partners available in English, French, German and Polish.
- '**Feedback**': This option can be used to provide the project partners with information, ideas and points of view that can be considered within the European Partnership.

Restricted access includes tailor-made services and tools, such as:

- **Online services** offering city twinning facilitation and partnerships, project co-operation and networking opportunities
- **Expert workshops and study tours** demonstrating practical examples of biofuel applications (including a series of 4 workshops and 3 study tours for biofuel end-users)
- **Tools:** Good practice cases, guidebooks, and reports, biofuel monitoring, standardisation, application, etc.
- **Newsletters and an interactive mailing list**

2. Identifying end-users and their interests

2.1 What are end-users?

This diverse group can potentially use biofuels in their own vehicles or encourage a switch to biofuels in their areas of direct influence, ranging from large-scale fleet owners to private car owners.

The following groups fall in this category:

- General public (vehicle owner), incl. pressure groups such as the Automobile Association and media that guide or influence public opinion
- Industrial & commercial end-user (fleet owners, e.g. transport and delivery companies such as postal services, removal companies, taxis)
- Local, regional & national governments (as fleet owners, e.g. fire-brigade, police, waste collectors, bus or car fleets)
- Agricultural end-user (e.g. tractors, harvesters, etc – in this group farming associations that represent agricultural end-users are included)
- Public transport organisations
- Automotive industry & supplier

2.2 Why focus on end-users?

'End-users' has been identified as a category within the European Partnership, grouping a diverse range of actors together that are essential for the widespread use of biofuels. To identify different types of end-users, determine their interests and issues, that will encourage their involvement in the European biofuels arena, this group is directly addressed - through workshops and other means of contact.

The first of several planned end-user workshops was held in Stockholm in May 2007 to refine the term "end-user", and to determine specific needs, perceptions, barriers, challenges and opportunities from different types of end-users that are already familiar with biofuels for transport.

It was also important to bring together a number of end-users that are already familiar with biofuels. These experts could provide an input to develop a solid foundation that can be used to determine

specific end-user issues, and to highlight aspects they find of particular importance. It also provided an opportunity of exchanging good practices.

2.3 Introducing specific interests of end-users participating in Workshop 2

The participating end-users in Sofia represented regional governments, local authorities (policy, traffic, environment, engineering, waste), regional transport companies, as well as research - either using biofuels, interested in expanding the use thereof, or supporting other end-users in some capacity, mostly from Eastern/Central and Southern European Countries. In particular, 35 participants attended the event, coming from 13 different countries (more details can be found on the attached participant list).

Identifying their interests helped to guide discussions and consider further relevant issues, as a starting point in determining potential services and tools that could be useful for the European Platform.

3. Three biofuel examples presented to kick-start discussions

Three practical experiences with biofuels for transport were presented at the workshop, addressing aspects such as the motivation for implementation, operational experiences, and benefits gained.

3.1 Agri-industrial production and end-use: The cycle of production, distribution and use of biofuels

Presenter: Karel Hendrych, PREOL a.s. (Agrofert Holding a.s.), Czech Republic

Agrofert holding a.s. is a company conjugating more than 140 significant subjects from the sector of chemistry, agriculture, food industry and ground machinery. Accent on environmental programmes is put in all activity areas. It consists of a chemical part, an agricultural part and a food-processing part, processing high-quality raw materials in modern plants, which are the prerequisite for a production of quality products. Agrotec is also one of the most significant sellers of ground machinery in the Czech Republic (both passenger cars and lorries and agricultural and building machinery).

Actions:

<u>Project PREOL Lovosice – production of rape oil methyl ester</u>

Project Location:

- In existing industrial area of Lovocise
- Optimal logistic accessibility for all kinds of transport without any appropriation of arable land
- Accessibility of own storage capacities for rape seed

Synergetic effects within Agrofert group:

- Existing utility networks and engineering services
- An own production and distribution of electricity and heat
- Experienced and qualified human resources
- Common cost effective transport of fertilisers, raw materials and products
- Deliveries of fertilisers and pesticides to the rape growers
- Deliveries of rape meal to the producers of animal feed mixtures
- New alternative for rape seed growers

In addition, modern technologies with minimal impacts on the environment and construction/operation of the unit will create up to 70 new jobs.

Status of the project schedules & project financing

At the moment, the project is in a stage of basic design approval, and site preparation. Full capacity operation is planned by harvest of rape seed 2009. The project is financed by a consortium (ABN AMRO Bank & Commerzbank AG) for USD 88 million, including surrounding investments and a reserve.

Estimation of development of the biofuel market in the Czech Republic

The development considers the following:

- By 2009, the prescribed share of fuel substitute by diesel is 4,5 % v.v. that is approximately 200,000 MT.
- A fulfilment of the target 5,75 % (energy content) substitute prescribed by EU for 2010 is presumed. That is approximately 300,000 MT.
- Enough space for 2 high-capacity biodiesel plants in Czech Republic.
- With reference to the market forecast for 2020 there is a space for a new production capacity PREOL, a.s. in addition to the existing big producers in Czech Republic.
- A long-term guarantee of stable purchase for the agricultural sector.
- The key factor of the market volume is the enforcement of the so-called high-percentage biofuels (B100/B30/E85).
- From 2008, the State will cancel the support of these fuels unlike the support of LPG, CNG stated until 2020.
- According to current legislation, government subsidies for fossil fuels until 2020 will reach 4.4 billion USD and no subsidies for biofuels at present.

Experience

The experience shows that success of high percentage biofuels is unfeasible without long term strategy, taking into account biofuels positioning on whole motor fuels market (CNG, LPG versus biofuels). In addition, decreasing consumption of gasoline, influence of alternative fossil fuels and refineries contradiction, reduce enforcement of bioethanol in the Czech Republic. Finally, high raw material prices for production of biofuels combined with low price of crude oil strike the position of

small and medium scale biofuel producers. Only integrated projects can avoid the fluctuation of the markets.

Project B100 – Utilisation of biofuels within the group Agrofert

Goals of the B100 project

- To create a net of distribution point B30, B100 and AdBlue in own petrol stations
- To create conditions for replacing significant parts of own consumption of mineral diesel with biodiesel
- To offer the products and services to other fleet operators and general public

Potentials for archiving the goals of B100 project

The company Agrofert is operator of 100 fuel distributing points in 78 centres within 70 subsidiary companies in both Czech and Slovak Republic. In addition, Agrofert is an important dealer in fuels, the sales account 130,000 MT fuels yearly and about half of the distribution points has public access. The group runs approximately 1800 lorries, with consumption of approximately 16 mil. litres of diesel per year. In 2006, it became a significant seller of agricultural transport machinery.

Status of the B100 project

The pilot project consists of operating a distribution point for B100 with potential to offer B30 on selected petrol stations. Based on fleet analysis, pilot project of running selected vehicles on B100 is under way, with the aim to gain more knowledge on technical aspects of using pure biofuels and its effects on engines. At present, the idea is to look for solution(s) to serve other vehicle fleet operations (growing coverage of filling stations across country, card system etc.) through potential partnerships.

The main challenges for success of the B100 project

- The sustainability of use of high percentage biofuels beyond pilot projects is unfeasible without legislative support
- Technical issues – co-operation and support from car (engine) makers would be welcome

3.2 Commercial production of biogas and end-use in Kristianstad, Sweden

Presenter: Patrik Lindblom, Kristianstad, Sweden

Kristianstad, Sweden

76 500 inhabitants
South of Sweden (Skåne)
Agriculture
Food industry
Absolute Vodka

The city has a special relation to climate change protection due to flooding. In 2007 there were 2 floods (Feb, June).

Waste as energy

- Reuse of products – saves energy
- Recycle material – saves energy
- Recover energy and nutrients
  - Digestion to biogas and fertiliser
  - Incineration gives heat and electricity
- Landfill

Why biogas in Kristianstad?

- Important for local waste treatment
- Local production gives secure supply
- Fulfil the European Union directive on renewable fuels: 5,75 % (2010) and 8 % (2020)
- Reduces Green House Gases; less CO_2 and less methane leakage (Swedish objective 50 % reduction to 2050)

Biogas in Kristianstad comes from three "installations":

Karpalund production plant 40 000 MWh
Co-digestion of:

- Waste from food Industry (60 %)
- Organic Waste from Households (6 %)
- Manure from farms (34 %)
- Digestion 70 000 ton
- Gas production 40 000 MWh
- Digestate 63 000 ton

Waste water treatment plant –
Digestion of sludge (degradation without oxygen) - 7 000 MWh;
Landfill 16000 MWh
The landfill is now closed and the production is therefore expected to decrease.

Biogases only till DHP

Biogas capacity
Total vehicle fuel capacity 2006: 44 000 MWh
Corresponding to:
- 4,4 million litres petrol/diesel
- CO_2-reduction 11 000 tons/year (6-7 %)
- 22 city buses (380 MWh/bus)
- 2 500 cars (16 MWh/car)

Biogas utilisation
Biogas from Karpalund and the wastewater treatment plant is purified and used as fuel for buses and other vehicles (25 %).
Biogas, presently not needed as vehicle fuel, is used as fuel in the district heating system (75 %).

Gas vehicles
All 24 city buses run on biogas and approximately 250 vehicles are currently running on biogas.

Actors
The actors involved are the following:
- Municipality co-ordinator (Waste Water Treatment Plant, upgrading plants, the city is forerunner with biogas cars, study visits, takes part in conferences)
- Municipal Waste Management Company (Biogas Plant, collects household refuse)
- Municipal Energy Company – uses surplus biogas in CHP plant
- Food industry (waste ”production”)
- Farmers (manure to the plant and digestate fertiliser back)
- Households (source separation of organic waste)
- E.ON (filling stations, marketing)

The important issue is that the production is depending on “local resources”, which is coherent with sustainability principles.

Incentives
The *Swedish Initiative Climate Investment Programs* supports production, upgrading, fuelling stations and biogas vehicles with grants. There is the possibility of local grants for gas vehicles (1000 € for companies) and other incentives, such as: governmental grants for environmental friendly vehicles (1100 €), free parking for clean vehicles (electric, hybrid, gas included), procurement stimulating renewable fuel, lower prices compared to petrol: gas 0,90 €, petrol 1,27 € (Dec 2007), and tax subsidies (40 % lower tax for employer-provided cars).

The Hen-or-egg dilemma of what comes first, the filling stations or the vehicles, is solved by highlighting that they come together. In addition, there is the need for trustworthy long term decisions by the politicians (local/govt.) and investments.

3.3 Ternative fuels for public transport sector in Romania

Presenter: Doina Anastase, Romanian Union of Public Transport (URTP), Romania

Context of URTP

Established in 1990, URTP is a professional association of the Romanian public transport operators, an independent, non-governmental and apolitical organisation, developing non-profit activities. URTP mission is to assist and encourage its members initiatives in order to both improve the quality of their services, meeting travellers' demands, and environmental impacts of this sector as well.

The main objectives and tools are the following:

- to organise professional debates, conferences, seminars, for a comprehensive exchange of knowledge, experience and information, both for technical and economical topics
- to encourage training courses and workshops in order to improve the administrative, technical and management skills of members' staff
- to initiate and stimulate the process of adapting the European legislation and standards to the specific conditions of our country

- to promote the national industry of public transport to disseminate any useful information on PT issues/events in Europe and world-wide
- to make lobby and advocacy, at local and central authorities levels, regarding public transport operators protection, road safety and security, environmental protection, specific legislation and standards governing operational activities, co-ordination between urban and transport planning

Public Transport System in Romania

In 2006, more than five million passengers were daily carried by urban PT means in Romania:

- TRAMS - there are 15 Romanian cities with tram network. In 2006, there were more than 1,300 trams running 600 km double track. Bucharest is the only Romanian city with a light rail network of three lines so far.
- TROLLEY BUSES - there are 14 Romanian cities with an active trolley bus network and more 4 cities with a network under conservation. In 2006 there were more than 740 trolley buses, running about 470 km double line.
- BUSES - 40 municipalities were registering in 2006 a whole fleet of about 3,800 buses running almost 3200 km. Their wear rate is quite high and they are endowed with less than Euro 3 engines (except Bucharest). Less than 1% of the current bus fleet is running on GPL, including taxi fleet.
- MINI BUSES - almost each town had mini buses operating in 2006 mostly by SMEs. Many of these operators have a very small fleet (1 or 2 new vehicles).

Legislative framework in Romania

HG 1844/22 December 2005 – is transposing 2003/30/EC Directive in order to promote biofuels and other renewable sources of energy in transport sector.
Target for 2010 – up to 5,75% use of biofuels on the internal market, calculated based on energy content of all types of fossil fuels (oil & diesel) consumption in transport sector.
Biofuels consumption in 2010 – estimated at ~ 300,000 tonnes, which is less than Romania potential to assure the requested raw material needed in order to produce ~ 500,000 tonnes biodiesel, corresponding to our target for 2020 – 10% use of biofuels in transport sector.
OG 123 – financial support for agricultural producers, approved in May 2007 by Law 123.
MEF organised three round tables addressing different Romanian stakeholders (agriculture, producers, researchers, NGOs, local & central authorities, etc), invited to express the view point/opinion of the sector they represented on the next steps to be done and packages of action, supporting different initiatives for promoting biofuels use mainly in transport sector.
Fiscal Code amended by Law 343/2006 – granting excise duties exceptions for energetic products such as biofuels and renewable energies, plus its norms of application
In 2007 (HG 456/16 May) there was a gradual introduction of a minimum rate of biofuel blending:
- biodiesel blending, starting with:
01 July 2007 2% in volume at all refuelling stations (as additives)
01 January 2008 3% in volume
01 January 2009 4% in volume
01 January 2010 5% in volume

- Bioethanol blending, starting with:
01 July 2009 4% in volume
European standards were adopted such as SR EN 14214/2004 (Fuels for cars; FAME for Diesel engines; requisites and trial methods), SR EN 228/2004 (Fuels for cars; Gasoline; requisites and trial methods) SR EN 590/2004 (fuels for cars; fuels for Diesel engines; requisites and trial methods).

Producers and refuelling stations

The first important biodiesel plant in Romania is operational starting with autumn of 2007, having an installed capacity of about 50,000 tonnes/year.

Estimations are showing that starting with 2008, the internal production of biodiesel would be of about 300,000 tonnes/year, when more than 25 producers will support biodiesel production. As for the Romanian public transport sector, the registered results of some studies deployed in Constanta and Cluj Napoca cities, funded from national resources, are showing that tested buses, with a high wear rate and endowed with non euro or euro 1 engines, are not offering a considerable reduction of CO or NOx emissions levels.
In 2008, other six buses, with an acceptable wear rate and endowed with Euro 2 and 3 engines, will be tested for blendings of 30% to 40%.

End users - Show case in Baia Mare

The producer of Baia Mare city, SC AUTOELITE SRL, is declaring that with the price of 2,7ron/l (about 0.82euro/l) for B70, comparing with the price of 3,1ron/l (0.94euro/l) for conventional fuels and a consumption of 7l/100kms, the 20 taxi of their own fleet are annually saving about 10,000 euro.
Concerning biodiesel use, there are some small private producers of biodiesel on the internal market (using rapeseed, sunflower and less soybean or corn as raw material), in different regions of the

country where they are testing biodiesel on agricultural vehicles and cars (taxi), using blendings up to 80% (B80).

Dissemination activities
Knowledge campaigns were undertaken in Romania, based on different national and European sources of information:

- ASSISTANCE project (2006 – 2007) - the implementation of biofuels directive in Romania (ECOFYS and SenterNovem from Netherlands & Ministry of Economy and Finances) - Experience shared by different advanced European cities
- SUGRE project (2006 – 2008) www.sugre.info and/or www.greenfleet.info (Lessons learned about all the alternative fuels approached –strong/weak points-; Progress in Europe and worldwide on promoting alternative propulsion, Perspectives, giving the opportunity to think about future implementations
- BIOFUELS CITIES project (2006 – 2009) www.biofuel-cities.eu

Main barriers and opportunities
- In March 2007, a survey was deployed among the 70 participants, representing about 50 Romanian institutions, of which PT operators from 17 cities, 8 governmental and local authorities, 12 research and producer institutions and other 13 URTP partners from PT sector; one of the five questions:
  What are the main barriers and opportunities concerning alternative propulsion implementation in your fleet registered the following answers:
  - 30% considered the current legislation as a barrier, being not too clear and quite rigid, while 10% are considering it as an opportunity (60% didn't answer)
  - 3% considered that technical aspects are still a barrier in implementation, being the lack of information on adapting or changes to be done on the current engines for higher blendings, and lack of refueling stations network as well
  - 37% considered the current financial incentives as a barrier, motivated by the lack of local and state budget supporting the needed investments, and low UE financial funds as well, while 7% are considering all these as an opportunity
  - 33% were considering the wear rate of the current fleet [PT vehicles] a huge barrier, while 3% as an opportunity to renew their old fleet on the occasion of implementing alternative propulsion

  The event ended optimistically, hoping that future investments will offer soon a new and solid market of biofuels in Romania, thus being able to reach the target of 5,75% biodiesel use in 2010.

- Workshop November 2007: A survey was carried out among the 60 participants, representing about 50 Romanian institutions, of which PT operators from 23 cities, 5 governmental and local authorities, and other 22 URTP partners from PT sector. The information offered to the participants is showing the following results which are reflecting a good impact:
  - 20% are very interested to convert their fleet to alternative propulsion, starting with 2008, while 47% later on (2010)
  - 40% considered that the most viable alternative fuels for their city are equally biofuels and CNGV, while 20% would choose hybrids
  - 80% considered that the main financial source which should support investments in alternative fuels are European funds and Bank credits, followed by local budget
  - Among the 5 benefits described (environmental, curiosity for new technologies, independence of conventional fuels, lower exploitation costs and legislation) the first one was by far the most appreciated (cleaner PT fleet and company image)

Participants were also informed about the Technological Platform from Romania (BIOCARO) constituted on 09 November 2007 in Cluj Napoca and some WGs for launching a national strategy thus accelerating CNGV promotion process in Romania.

BIOCARO - Technological Platform for Biofuels in Romania
The Research Institute for Analytical Instrumentation, Cluj Napoca - 41 founding members (universities, research institutions and SMEs)

MEF will be supported by this Platform in order to elaborate:
- the National Strategy for implementing biofuels in Romania
- the National Action Plan for Biomass (deadline – April 2008)
- encourage the Romanian industry to adapt its profile to the high European technologies to the specific conditions of our country

Among BIOCARO major activities:
- co-ordination of national/regional Programs promoting biofuels
- consultancy and expertise services for achieving studies, analyses, evaluations
- short and medium trainings
- proposals for improving the current legislative and fiscal framework
- dissemination of the results in order to support the objectives of its mission

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After the presentations of good practices, participants shared and discussed their experiences related to the problem of lobby power to biodiesel and the needs of companies to link to local governments. Jonas Ericson, BEST assistant coordinator of the City of Stockholm, presented the idea behind the CIVITAS Catalist project. Mr Ericson was also attending Workshop 1 and during that event, he introduced the BEST project, Bioethanol for Sustainable Transport. BEST is dealing with the introduction and market penetration of bioethanol as a vehicle fuel, and the introduction and wider use of flexible fuel vehicles and ethanol cars.

The aim of CIVITAS Catalist is instead to deal with a mix of different measures to improve traffic chaos:
- Car pools / new ways of owning cars
- Making people choose other than car
- Collective passenger transport
- Transport management
- Goods transport
- Road pricing / access restriction
- Clean vehicles and fuels

More information can be found on: www.civitas-initiative.org

CIVITAS Catalist can be seen as a synergy to Biofuel Cities.
In addition, the CIVITAS Catalist is to get more cities / local governments involved with a specific focus on new member states but open to all European countries. The following 14 are at present the experienced ambassador cities: Berlin, Bremen, Bristol, Bucharest, Geneva, Göteborg, Graz, Kaunas, Krakow, Nantes, Rotterdam, Stockholm, Toulouse, Rome and networks.
CIVITAS Catalist could support partial funding of study visits, workshops, “politicians meet politicians” events, journalists’ visits, training of personnel etc..

The above aims at iterated, in-depth exchange of experience at political and technical level and clarifies how to work with legislation, public acceptance, importance of journalists, etc.
The strategy related to "Clean vehicles in Stockholm" aims at getting cities implement a clean vehicle strategy with a specific focus on action in the cities. This strategy consists of 7 steps: Identify motivated cities (Step 1), Lighthouse tours with politicians and high level policy-makers invited to a city with applicable biofuel implemented in large scale (Step 2), Involve producers (Step 3), Involve users (Step 4), Local strategy (Identify obstacles and how to solve them at local/regional/national level. Present a timeplan for implementation of local incentives, Set up goals for the project (Step 5), Local kick-off (Step 6), Action in Co-operation "Stockholm & Catalist cities will support the work – together to gain experience from all fuels" (Step 7). The wish is to get more cities on board: e.g. 10 cities in 4 years to implement in order to push national governments.

4. Summary of end-user views on challenges and opportunities

The participants were then split into 4 different working groups, which were set up on the basis of geographical and professional diversities. The groups worked with coloured cards identifying the main challenges/barriers and opportunities according to the following topics of discussion:

a. Legal framework conditions at national and regional level
b. Market conditions / how to influence the vehicles market
c. Awareness at local level, both for operators and the public, and communication on good practice
d. Spatial planning, land use and agriculture
e. Links to environment, health, air quality, local impacts

The main challenges and opportunities were collected on flip charts and presented in a plenary session by the group work leaders. The participants then discussed and shared their experiences. The identified challenges and opportunities are listed below.

a. Legal framework conditions at national and regional level

For the widespread use of biofuels for transport, legislation and regulations need to be in place to support the initial transition period, by providing a stable platform that encourages investment and large-scale interest from the different actors – from producers to users. Different levels of government have a role to play – from the EC with directives, to national governments, as well as regional and local governments. These roles need to be clarified. A concerted European wide approach would be useful and effective in harmonising the playing field. Diversity in local incentives has shown that there is tremendous scope for voluntary local incentives decided on by local governments and companies. These can encourage a transition to biofuels in communities. There is no need to involve the national government or the EC for local incentives. There is a local independence / local power not obligation to follow government even if country has legislation. Despite this local government, often rather resorts to local legislation that considering behaviour changes through incentives. Quite often the barrier is a political issue, rather than a technological one. Political will must therefore include political statement(s). Participants ask for a trend to emphasise advanced city as "Reference City" for promotion and as successful examples (details on how it worked, showcasing company), by showing successes that could invite a growing interest in biofuels.

In Bulgaria, there is a need to start from small municipalities. It is easier for politics (production is a problem, biogas in Sofia is just for heating). In the Ukraine it is too expensive to produce biodiesel.

b. Market conditions/how to influence the vehicles market

A chicken-and-egg dilemma is that of infrastructure. If more fuelling stations were available, more fuel users would most likely switch to biofuels, which are seen as being more environmentally friendly than burning fossil fuels. However, users need to be in place before distributors/producers will set up adequate infrastructure. Joint lobbying options for different end-users (public, farmers, local governments, etc): bring together different lobby groups in a place where matchmaking can strengthen pressure for specific action or achieve results. This will help to convince producers/manufacturers/national governments, etc. that there is a real interest. The groups' influence will be stronger when they have the opportunity to stand together as a group.

Companies are interested in positioning themselves in an area where they see a benefit. They like to be seen as front-runners, or a place other companies go for advice. Therefore, it is very important to have a "green image".

There is still a lack of trust for biofuels. This is linked to public perceptions and fears and it has been highlighted as a key issue. In addition, there is a lack of single/obvious definition of what are clean vehicles. Probably the European Commission should come up with a definition, not necessarily a single, unique definition but concerning "fields" or "ranges".

On the other hand, small measures that cities can take are beneficial, e.g. free parking for clean vehicles or other incentives can represent an opportunity.

c. Awareness at local level, both for operators and the public, and communication on good practice

The barriers are represented by lack of awareness and bad advertisements. Good practices are a good mean to share knowledge and experiences. The opportunity is also given by the big focus that is given by media on the debated related to climate change. Awareness is very important to educate opinions.

d. Spatial planning, land use and agriculture

There should be more scientific – high level studies on biofuels and their links to spatial planning, land use and agriculture.

Diversification of raw materials is needed, with local production for local use regarded as a potential solution. Agriculture can play an important role, in the use of all the biomass to produce gas, clean it, and add to the natural gas system (for heating, cooking & transport). This is an easy approach, with step-by-step change that has little risk and no real challenges.

An opportunity could be the increase of agriculture development (instead of making food overproduction) with more profitable crops, which is better for regions.

e. Links to environment, health, air quality, local impacts

This is also very much linked to the issue of sustainability, to the health of all for this and next generation. In addition, the integration and synergy effects of biofuels are very important: energy should be used on different levels: ethanol, fertilisation, recycling of the rest, etc..

The participants then evaluated individually main challenges and opportunities with the use of coloured dots. In particular, the issue, which was considered as the most important, was: sharing good practices (9 dots). Moreover, the awareness raising (7 dots) and the political will (5 dots) were

evaluated as fundamental together with the need for synergies/integration measures (4 dots). These might have an impact on different sectors - ranging from social, economical, political, to technological/technical - and a more detailed breakdown is provided in the attached spreadsheet, to determine relevance to different end-user groups and sectors.

5. End-user requirements to be met by the European Platform

End-users had then a plenary brainstorming session and a wish list for consideration the Biofuel Cities European Partnership is presented below.

Links between car producers and Local Governments

Car producers should enable all their vehicles to use biogas (e.g. Toyota has forbidden using biogas). This can be possible through a motivation process of car producers, e.g. agreements with local governments, which will guarantee that citizens will buy them.

Another way of forcing could be to have more specific EU legislation and have more ambitious targets of fuel consumption, especially beyond 2020.

The effective use of resources is also linked to fuel availability. In some cases, local waste is collected and used as a resource (e.g. waste from slaughter houses, restaurants, etc.), with local fuel produced, thereby providing a solution to two potential problems: waste management and lack of fuel.

Moreover, investments could be made more efficient through partnerships between the companies and the local authorities.

Improve awareness raising

Many study visits opportunities are important to raise awareness especially in East Europe. Communication on education purposes/educational challenges them that they are actually doing good, educational purpose make each individual feeling better, educational challenge, positive feeling.

Clean vehicle companies can be a mean to raise awareness. The study tours are fundamental with definition of clear actors, politicians involved, translation provided (as language is often a barrier), and city-to-city partnerships opportunities.

Cities, interested in biofuels, may be uncertain on how to approach the issues, and interested in peer-to-peer contact. They need a place where they can establish contact and present their interests to find a match.

Improve political involvement and simplification of procedures

Quite often the barrier is a political issue. There is a need for strong political will. Moreover, information is needed, from basic informative data to presentation of opportunities for different actors. The issue is: How to convince politicians? Make a joint venture between businesses and politicians, show them that it works and have a more scientific/systematic approach through study tours. Probably cross-sectoral “Think tank” groups could be useful, in order show good examples.

In Greece there is a “Common Technological Platform” with all relevant stakeholders involved to communicate and inform legislators and politicians through a systematic approach.

The local impact of biofuels (emissions, NOx, particles, environment, health) is of great interests, as this motivates politicians and the public to action.

Standardisation and monitoring

Quality and standards of fuels are essential in this new field. A certification scheme that also supports fair trade is required.

The lack of clear, easily understandable information for lay-people as potential biofuel users is needed. A harmonisation of standards across countries could help to develop uniform technologies. There are numerous examples where the media has provided factually wrong and even biased information, e.g. regarding ethanol production. In some case, NGOs can be reluctant to use biofuels. This negatively influences potential users. More responsible information dissemination is needed, targeting different audiences with useful data. Important is the monitoring of quality. But there is an open question: Who is monitoring the quality? An institution/organisation? Or is it an expansion of the existing? There is a need for tax authorities controlling (refinery check) to avoid fraught.

Sustainability criteria

The development of biofuel technology will rapidly present environmental and social challenges. Creating and implementing sustainability criteria system, could play an important role in addressing these challenges and ensuring that biofuel are produced in a responsible manner.

This of the introduction of sustainability is rather a difficult debate. The European Commission wants to bring up a biofuels directive with introduction of sustainable criteria. This could enable end users to discriminate among fuels that respect sustainability criteria.

Incentives and Tax relief

There is a discrepancy between marketing and political agenda, which creates many obstacles in Europe. There are examples where incentives worked well, e.g. in Graz there was a political decision to change to environmentally friendly cars for the council, in Stockholm the incentives were related to free parking.

But best incentives are necessary for good prices, For example, biodiesel is too expensive in Poland, where they had a long 15 years-experience in biofuels. Then the Polish government changed tax system, which basically 'killed' the use of biofuels. There is a need to re-start the process and in particular to build stable tax incentives for long-term commitment. In Ukraine there is a need for cheap feedstocks.

6. Contact

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Biofuel Cities: European Partnership and the role of end-users

Workshop 3-4 December 2007 in Sofia, Bulgaria

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