



NEWSLETTER SUM № 3

Sustainable Urban Mobility

Introduction

SUM Project welcome

SUM Project would like to welcome all our followers and readers in this third edition of the projects' Newsletter. For us, it is a pleasure to continue with this work in order to inform you about the project progress, main inputs and news of interest in the framework of the topic our project is about. We hope you enjoy the reading and please, contact us to know more about SUM Project and the urban mobility!

SUM Project events

The Interregional Visit on Sustainable Electric Mobility



On the 12th–13th of December 2012, Riga held the first of a series of interregional visits organized jointly by the technical team of the SUM Project. The Interregional Visit was hosted and organized by the Riga Municipal Agency “Riga Energy Agency”, which acts on behalf of Riga Municipality in the SUM Project. The event was structured in two parts:

The first day was dedicated to the site visits to places directly related to sustainable electric mobility: the 1st tram depot in the city centre, the Emission-free Mobility Centre and the Motorsport Technology Service “Ogres Servisa centrs”.

On the second day, the Interregional seminar was organized about “Practical steps towards the establishment of emission-free mobility”, and it was open to local and foreign stakeholders.

This first two-day Interregional Visit was attended by 93 persons both from the partner entities of the project as well as by other stakeholders and representatives from different types of institutions and organizations in Latvia in the field of sustainable electric mobility.

The objectives of the first Interregional Visit have been fulfilled – the knowledge of the SUM Project partners about the possibilities to promote emission-free mobility in sustainable urban development has been improved based on the Riga's practice demonstrated by the examples of implemented measures, as well as the information on five good practices, chosen in Vigo, has been disseminated through the Interregional seminar to a wide audience of experts and stakeholders.

More information on the event:
http://www.rea.riga.lv/files/Report_Interregional_visit_Riga_December_2012_EN.pdf

The Interregional Visits of the SUM Project aim to identify the most effective and transferable policies and practices and learn

from them, in order to acquire firsthand knowledge of those policies and practices that are being developed, which can lead to acquisition of interesting ideas by the partners related to sustainable mobility.

As a whole, there are three interregional visits, and the following two will be arranged in Malmo (Sweden) and Vratsa (Bulgaria) in the second part of 2013.

The Third Meeting of the Steering Committee



Last 10th & 11th April 2013, Amiens hosted the 3rd steering committee of the SUM project and its 2nd workshop related on biofuels.

The third Steering Committee of this Interreg IVC project was attended by 32 people of the partners' entities. The meeting took place at the city hall of Amiens (France) on 10th April 2013 and administrative work was developed. Some of the subjects dealt with were the progress of the project components, the next tasks to be done and problems encountered in the second reporting period. The scheduling for the 2nd Interregional Visit program in Malmo, the 4th Steering Committee, the 3rd workshop and the 3rd Interregional Visit program in Sofia and Vratsa were also discussed.

The Second Thematic Workshop



The second workshop related to biofuels was organised on 11th April 2013. First, a conference was held by local representatives and experts of the biofuel field to present the issues that Amiens is facing and its objectives on this subject. Different points of view were expressed as the participants represented different organisations: an association promoting the use of Diester fuel, another organisation "ADEME" qualified these remarks and a last one, Amiens Métropole, showing applied results. The partners of the SUM project also presented their projects on a voluntary basis.

The aim of the workshop was the exchange around this topic and to identify 5 best practices on partner territories. The objective was to learn from each other, to raise awareness on projects running abroad and to create bonds between local experts, decision makers and the project partners.

The 5 best practices were selected in the afternoon (each entity already had read the 30 biofuels studies produced by the partners). After 1 round, a majority designated the first 4 projects but a second round enabled to identify the fifth best practice among 4 projects. The five best practices of the 2nd workshop based on biofuels are:

"EnerBioAlgae: Boost energy efficiency across the territory to solve environmental issues linked to degraded water resources" (Municipality of Vigo).

“Management system for used cooking oils in the Algarve Region” and “Collect the cooking oil”: Merging of 2 projects of Municipality of Vigo and AREAL (Energy Agency of Algarve – Portugal).

“AMEB Project: Biogas as Automotive Fuel at Murcia-Este wastewater treatment plant” by ARGEM (Energy Agency of Murcia – Spain).

“Introducing of Brown gas technology in vehicles with combustion engines” by REAP (Energy Agency of Pazardjik – Bulgaria).

“CNG (biomethane) as a fuel for sustainable city distribution” by Skåne (Association of local authorities – Sweden).

The workshop was attended by special guests such as Gilles Demailly, Mayor of Amiens, who underlined the necessity of European cooperation, the need of research and innovation on this field and praised the quality of the collaboration within the SUM project.

Thierry Bonté, Deputy mayor for transportation services, took part in all meetings and played an important role, in particular as moderator of the workshop.

To sum up, these two days enabled European cooperation and exchange of experience on biofuel thematic but it was also an opportunity to involve the partners of the project with local decision makers, to exchange on their experience and to give a chance for future cooperation between the participants of the meetings. Lastly, such experience is also an occasion for cultural exchange and to discover local heritage.

Best practices in the field of biofuels in the partner's regions

These are the 5 practices that were selected under the Thematic Workshop on Biofuels:

1. EnerBioAlgae

EnerBioAlgae responds to one of the major challenges facing society: the economic, ecological and energy crisis. This initiative is the result of a serious reflection on the imperative need to move towards the research and development of new forms of clean energy that will minimize the environmental impact and will ensure a genuinely sustainable development.

The overall objective of EnerBioAlgae is the Energy use of Biomass in degraded water resources rich in microalgae. Boost energy efficiency across the territory of Spain, Portugal and France to solve environmental issues linked to degraded water resources.

The specific objectives of EnerBioAlgae are:

- Refine algal biomass production system for energy purposes to improve the efficiency of the algal cultures productivity.
- Development of methodological, technical, economic and environmental aspects, to advance in the energy potential of microalgae.
- Identify and exploit degraded water resources with high inorganic load and energy potential.
- Develop instrumentation technologies for monitoring and on-line control of energy cultures using a system based on the use of LIDAR technologies with pattern recognition algorithms that would enable to know the state of the cultures at all times.
- Optimize the quality of biodiesel based on microalgae (complying European regulation)) to stimulate public and private investment.
- Assess and demonstrate the technical, economic and environmental feasibility of

the developed technologies and the commissioning process.

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2. Collect the cooking oil

The aim of the good practice is to promote the recycling and the valorisation of used cooking oil into biodiesel in the territories of two participant partners: the Algarve Region and the Municipality of Vigo.

The project provides a good example of how local authorities can combine better waste separation, production of renewable fuel and positive contributions to the regional waste management system.

The municipalities and private companies have an agreement to install and explore several recovering oil units in order to be recycled to biodiesel.



In the case of Vigo, neighbourhood associations are collaborating with the public administration and some private enterprises. Through the PMA and Nutrigas, private organizations,

and with the support of the Vigo Municipality, a campaign of collection of domestic cooking oils was launched. The specific objectives of the practice were:

- Reduction of the pouring of cooking oils through the sanitation systems, since it damages the plumbing, pollutes the rivers and hinders the operations of water treatment plants.

- Promotion of the culture of recycling in the citizenship of Vigo.
- Compliance with environmental legislation, in particular with the Waste Framework Directive 2008/98/CE
- Energetic evaluation of the cooking oils and processing of all oils that could be used as biodiesel.
- Creation of jobs in the management area of oil cooking waste.
- Improvements in the development of new technologies for the recycling of waste in Galicia.
- To promote the use of biodiesel as a fuel due to its low emission of sulphide and its faster degradation.

In the case of the region of Algarve, it is to underline that actually there are more than 220 recovering units in the region that have collected more than 35 tons of cooking oil per year.

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3. AMEB Project: Biogas as Automotive Fuel

The aim of the AMEB project was to obtain an automotive, called BIOEDAR (WWTP Biogas), from a renewable energy as it is a biogas generated at an urban wastewater treatment plant, in the Region of Murcia.

AMEB allows, besides reducing pollutants gas emission to the atmosphere, to take advantage of methane and carbon dioxide by an ecological and environmental friendly use.

This project develops an integrated process to get the sustainable biogas use by the

selective elimination of undesired compounds that could difficult its later use.

The main objectives of the introduction of biogas as automotive fuel are: reducing fuel costs, dependency on energy imports emissions, noise and increasing energy security. At citizenship level, the environmental possibilities of managing the city's sewage and the use of technologies for transport as an alternative to fossil fuels as well as improving technical/organizational capacities of institutions and experts.

The Murcia Municipal Authorities in 1989 looked for a solvent partner, professional and technologically efficient to manage the local public services covering the integral water management (potable water supply and WWT).

Aguas de Murcia (EMUASA) was born as a joint venture between Murcia's Council (51%) and Aquagest Región de Murcia (49%), a private company belonging to Agbar Group. EMUASA manages the integral water cycle of Murcia municipality. More than 439.000 citizens living in the city centre and the surrounding villages and garden areas (890 km) receive the company services.

The results were that biogas from anaerobic digestion in wastewater treatment plants can be now sufficiently purified so that it can be used as biofuel for vehicles. One way of purifying biogas is chemical desulphurization in gas scrubbing towers, followed by removal of carbon dioxide by means of absorption with MEA (monoethanol-amine). When the process was optimized, the outflowing biogas had a mean CO₂ concentration of 0,1%. By this project a new technology will be developed that will suppose a revolution in WWT by reusing products since it takes advantages of a renewable energy, biogas, from raw biogas (in pressure, temperature,

relative humidity and high impurities level conditions). A fuel ready for use is obtained by the stages of the project.

The prototype car has been operating in experimental phase since 2007 and can run for about 400 km, on a single tank of biogas (164 kilos of capacity).

The EMUASA personnel uses this car as a transport medium into the Murcia-Este WWTP and to manage paperwork in Murcia.

In 2010, EMUASA had two vehicles running on bioedar. The main future objectives are to increase the number of cars running on biogas into the fleet of vehicles and to carry out other investigations about harnessing the biogas.

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4. Introducing of brown gas technology in vehicles with combustion engines

The good practice proposed by REAP includes introduction of Brown gas technology (oxyhydrogen) into engines with internal combustion. This practice is already implemented in hundreds of vehicles in Bulgaria. It can be applied in cars, trucks, and buses running on petrol, diesel and LPG.

The major advantages in this technology are:

- Fuel economy up to 40 %.
- Increase in performance. Regarding vehicles with diesel engines, the torque can increase up to 25%.
- Decrease of CO₂ emissions by 80%

- Decrease of engine wear
- Decrease in amount of carbon deposits and soot formation inside the engine.

The creation of generators of Brown gas is based on a scientific development of the famous Bulgarian scientist Iliya Valkov. In the late 50's for political reasons he is forced to emigrate in Australia where he took the name Yull Brown. There he created the first oxyhydrogen generator (HHO). Later in his honour, HHO is called Brown gas. At present days, generators of Brown gas are manufactured not only in Bulgaria but also in South Korea, China, USA and many other countries. Brown gas technology has a lot of successful applications in different industrial areas, but the current practice examines only its utilization in engines with internal combustion.

Brown gas is generated by water; the gas is not toxic or explosive and is emission free. The gas is injected into the engine through an air-filter box. Brown gas in this case can be identified as a highly efficient fuel additive, which is totally renewable, and it is generated by a generator which is mounted additionally inside the vehicle, and the gas is immediately used. It is also possible (demonstrated already by Mr. Yull Brown) to use that gas directly as a fuel, but it is needed a certain modification of the engine as well as the generator. We can say Brown gas is an important step towards „Hydrogen” Energetics, which can provide endless energy without the use of fossil fuels, petrol and natural gas.

The main objectives of that practice are its main advantages, and these are: significant savings in commonly used fuels and significant decrease in harmful emissions as well as decrease of engine wear.

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5. CNG (biomethane) as a fuel for sustainable city distribution

The main objective has been to reduce carbon dioxide emissions and other emissions with negative local impact, such as particles and NOx and also to increase the share of renewable energy used in transport sector by using CNG/biomethane as a vehicle fuel.

In 1996 Skånemejerier (a dairy company from Skåne) participated in a project called LB30 where they bought their first CNG/biomethane trucks. This was the company's first step at their journey towards replacing diesel with CNG in heavy vehicles used in city distribution. In 1996 there were no factory built trucks for CNG, no filling stations for gas as a vehicle fuel CNG in the Skåne region. Building filling stations for CNG and testing and evaluating gas driven heavy vehicles were therefore the objectives for the project.

Since the first trucks were taken into operation in 1996 Skånemejerier, who got positive experiences from the use of CNG trucks, has continued to replace older diesel trucks in their fleet with CNG/biomethane driven trucks for in-city distribution. In 2012 Skånemejerier had 22 CNG trucks running in their distribution fleet in 7 cities in Skåne. 8 of the trucks are being run on 100 % biomethane and 14 on a mixture of biomethane/CNG where the proportion is 50% biomethane and 50% natural gas. At the dairy in Malmö Skånemejerier has got their own fuel depot/slow filling station for their CNG trucks situated at their facilities.

The outcomes are that Skånemejerier has so far purchased 22 heavy distribution trucks

running in 7 cities in the Skåne region. In four cities, the gas driven trucks are filled up with 100 % biomethane and in three cities with a mixture of 50% biomethane and 50% natural gas. Calculation of yearly reduced emissions because of the switch to CNG in the vehicle fleet has been SO2 160 kg.

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The Study visit: Biogas and biomethane in Skåne/Malmö

A Study visit is foreseen on the 4th of June in Sweden within SUM Project. There would be a series of lectures on the biogas system in



Skåne, from waste to clean energy and useful fertiliser, “the Swedish model”, the work with collecting organic household waste in Malmö and finally the pre-treatment of organic waste from household and food industry or biogas production at waste water treatment plant, including biogas upgrading (biomethane) and grid injection. The study visit will deal with the last topic and the different types of CNG/biogas filling stations; slow filling station/depot for buses and public fast filling station for personal cars, light duty vehicles and trucks.

SUM Project presentation in Greater Essex INTERREG event

The event was attended by Cllr Kevin Bentley and showcased the



best of Essex involvement in INTERREG projects in 2007 - 2013. The event held on 27th November last year at Anglia Ruskin University, was a great opportunity to celebrate projects such as SUM Project and Floodcom.

The Greater Essex INTERREG event has also examined the progress on the development of the next round of INTERREG programmes for the 2014- 2020 period. It has also explored Essex priorities, project ideas and potential partnership for the next round of European funding.

EUROPEAN NEWS, EVENTS & CALLS

The Sustainable Urban Mobility in the Covenant of Mayors

The Covenant of Mayors supports urban sustainable mobility campaigns by the co-funding of campaigns taking place between 01/07/13 and 30/06/14 by a maximum grant of € 7.000. The applications should be submitted by the deadline set on the 31st of May, 2013 at 12:00 (CET).

For further information please visit:

http://www.covenantofmayors.eu/news_en.html?id_news=452

The European Mobility Week is on its way!



European Mobility Week is an annual campaign on sustainable urban mobility organised with the political and financial support of the General Directorate for the Environment and Transport of the European Commission. The aim of the campaign, which runs from 16th to 22nd September every year, is to encourage European local authorities to introduce and

promote sustainable transport measures and to invite their citizens to try out alternatives to car use.

For further information please visit:
<http://www.mobilityweek.eu/home/>

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This project is co-financed by the ERDF and made possible by the INTERREG IVC programme.

The newsletter was prepared by ARGEM-Regional Management Agency of Energy, Region of Murcia and Municipality of Vratsa in the first quarter of 2013. Responsibility for the information and views set out in this lies entirely with the authors.