NEWSLETTER

July 2006, No 1

Alternative Fuels and Alternative Propulsion

Think about alternative propulsion - think about a clean and prospering environment!

The project SU:GRE-sustainable green fleets will support the take up of efficient ultra low emission cars.

Economic as well as ecologic aspects are covered.

We will show the way to sucessful operational expertise and provide best cases at **www.greenfleet.info**

SU:GRE Sustainable Green Fleets

Editorial

This Newsletter is one element of the broad general dissemination tasks under the SU:GRE – Sustainable Green Fleets project. General dissemination tasks in the form of presentations, flyers, folders, newsletters, networking and internet platform present and evaluate technological and economic aspects concerning experiences and good practices for alternative fuels and alternatively propelled vehicles, that can be used as an example for wide public interested in the area.

Dissemination materials will not only contain all the practical aspects and collect the best cases, but also analyse existing campaigns and their effects. They should be treated as a ground for preparing training materials for campaigns and assistance activities for interested parties.

The dissemination procedures will ensure that the materials and methods used in the dissemination process are high quality and relevant to the practical problems that may arise in the procurement of new vehicles.

The Newsletter is prepared in printed and electronic versions in 12 languages, and shall be sent to more than 3000 recipients. SU:GRE Newsletter is updated every six months, together with the information placed on the website: www.greenfleet.info/newsletter

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THE PROJECT BEHIND GREENFLEET.INFO

SU:GRE (Sustainable Green Fleets) is an accompanying measure that promotes alternative propulsion and mainly focuses on fleets, but not only with regards to land transport. The main objective is to promote and support the conversion of fleets to alternative propulsion (ranging from bio-fuels, methane as fuel to hybrid systems comprised of combustion engines and electric propulsion systems) and the energy efficient usage of them.

Budget
Total budget for all tasks planned to be realized in the SU:GRE Project counts for more than 2,580,000 Euro.

SU:GRE will foster a positive attitude towards alternative fuels and new power train concepts using captive fleets as forerunners and proof for the viability of alternative propulsion.

Site co-ordinators will organise the validation of the training/briefing materials, support the training/briefing and organise site visits for other fleet owners. We assume that two-way communication with fleet owners will greatly improve the efficacy of dissemination, due to the higher quality of the materials and the possibility of face to face communication. As we deal with fleet owners, the impact with regard to the vehicles to be converted is adequate to the effort. By using the results from fleet owners who have changed to alternative propulsion systems, we will also gain good arguments for convincing individual car buyers. For air and water transport fleets are dominating over individual vehicles, so addressing fleets owners is the right way.

A knowledge hub, implemented as an internet based communication and information platform, tools supporting the procurement and localisation of refuelling sites (mobile phone based), and a support desk will be implemented.

www.greenfleet.info

WORK DESCRIPTION

SU:GRE comprises 6 work packages:

WP1 project management will be responsible for the management of the coordination of the dissemination actions, communication and contingency management, quality assurance procedures and financial administration.

In **WP2**, an in-depth **baseline analysis** will ensure that the dissemination materials will not only contain/treat all the practical aspects and collect the best cases/show cases, but also analyse existing campaigns and their effects.

WP3 will synthesise the research into an **implementation plan** for the dissemination of the experiences and good practices and define the content for the three target groups (captive fleets, driving schools, teachers and other fleets).

WP4 will validate the concept and produce and assess the **training materials** with the help of the members who are fleet owners.

WP5 will provide **training/assistance and networking** amongst captive and other fleet owners and will also address individuals via supporting driving schools and teachers with materials. For the show cases, real and virtual site visits will be organised/offered. The partners' many years of experience in networking and dissemination projects for DG TREN and others will help to offer both innovative dissemination approaches and high quality dissemination products.

WP6 will cover the general dissemination tasks (presentations, flyers, folders, newsletters, networking, internet platform) and evaluate the content and the procedures based on a discussion of the experience of the workshops with regard to technological and economical aspects. A concise report will reveal preconditions for new alternative propulsion concepts and future campaigns. The material will also be updated continuously in the course of the project. Impacts can be described as follows:

- saturation of the knowledge of stakeholders about alternative fuels and alternative propulsion to support the directive 2003/30/EC
- improved inclination of staff involved in the procurement of vehicles towards alternative fuels or propulsion
- satisfied customers acting as multipliers

The number of alternatively fuelled/propelled vehicles will increase in the long term on account of follower sites in the projects. We expect 75% of captive fleets to be converted and a reduction of 25% of fossil fuels for transportation, provided that local governments can be convinced and the fiscal regimes changed.

FIRST RESULTS OF THE PROJECT – WP2 BASELINE ANALYSIS

A baseline analysis was carried out by the SU:GRE consortium as the first phase of this project. Below we present some findings.

The EU currently meets 4% of its energy needs from biomass, the biomass used could be more than double if the complete EU potential will be used. To promote the production and use of bio-fuels many member states are relying on ***fuel tax exemptions***, facilitated by the Energy Taxation Directive. Member States could/should take coordinated measures ***to create a stable investment climate***, in particular by making full use of the allowed six year period for tax exemption. Some countries for example Austria, the Czech Republic and France have recently turned to ***biofuel obligations***, requiring fuel supply companies to incorporate a given percentage of biofuels on the national market.

Some countries (e.g Germany,the UK, the Netherlands and Slovenia) will probably introduce biofuel obligations in the near future. ***Costs of bio fuels*** has been reduced last years and their strategic importance augmented due to the hikes in the price of oil. In the near future biofuels will probably play a bigger role with oil prices increasing further, a reformed agricultural policy and new technological breakthroughs.

Refuelling logistic of the biofuels is one of the most important, and at the same time hardest issue. More fuel points are needed to support the bio fuel development. For fleet-owners with a large share of 'home based' vehicles it is in many cases feasible to purchase an own refilling point for alternative fuel. For smaller fleets there are possibilities in joint purchase and use of a filing point. Although there is still a gap in certain segments, there was a huge progress in the last years regarding the development of ***alternative fuelled vehicles***.

Some countries (e.g. Sweden, Germany, Czech Republic, Bulgaria, Belgium) already have set measures, on state or local level, promoting the use of alternative fuels and efficient propulsion systems to their fleets which include tax exemptions and reductions, funding parts of the investment and the operational cost and obligations and other special advantages. Many countries are examining the conversion of fleets in pilot projects (e.g. Portugal, Slovenia and Greece).

It is expected that soon the conditions will be created for much more 'fleet conversion projects'.

Partner's description: ALIANTA LTD.

Alianta ltd. is a young enterprise (established in 2003) based in Ljubljana, Slovenia. It is a private company mainly specialized in project consulting.

Activities of Alianta ltd. are:

- project counselling (developing ideas, partner search, elaboration of the project, project management, evaluation, dissemination of project results);
- preparation of project documentation for national ministries and agencies
- counselling on applying for EU grants and grants offered by Slovenian ministries
- organisation and implementation of educational seminars about EU funds for students, enterprises, local communities
- elaboration of specific and feasibility studies

Alianta offers its services to ministries, agencies, enterprises, municipalities, consortiums, NGOs etc. in different areas: entrepreneurship, environmental protection, agriculture, social responsibility, culture, transport, tourism, strategic planning etc. Alianta employs 10 to 15 persons and hires professionals in specific fields when necessary. In the domains of transport and environment protection we prepared applications to different European tenders (IEE 2004 – Sava d.d., Interreg IIIA Slovenia-Croatia – Municipality of Celje) and to tenders of the 6th Framework Programme - 6th priority field (sustainable development, global changes and ecosystems - Slovenian Railway Company d.d.).

Tasks to be completed by Alianta under SU:GRE project:

- attendance at steering committee meetings and local coordination,
- assistance in Baseline Analysis,
- assistance in creation of best cases directory,
- assistance in specification of implementation plan of dissemination phase,
- assistance in validation and printing/publishing of the materials for the dissemination,
- assistance in organising a network of proud fleet owners with alternative propulsion,
- assistance in evaluation.

ALIANTA, project consulting, d.o.o.
C. Ljubljanske brigade 5, SI-1000 Ljubljana, SLOVENIA
t: +386 (0)1 583 01 20, f: +386 (0)1 583 01 30
www.alianta.si

Contact persons for SU:GRE:
Eva Stare, sugre@alianta.si
t: +386 (0)1 583 01 22

Partner's description: Faculty of Materials Science and Engineering Warsaw University of Technology (WUT)

Faculty of Materials Science and Engineering of Warsaw University of Technology is the leading HE institution in Poland. It is engaged in both applied and fundamental research.
The main research fields include:

- quantitative structure and microstructure characterisation,
- properties of grain boundaries and mechanical properties of polycrystalline materials,
- nanocrystalline materials, composites and amorphous materials,
- microstructure degradation, corrosion and wear,

The Faculty has a significant experience in caring out of European RTD projects. It has participated in a variety of projects of 5th and 6th EC Framework Programs namely: Hit-Force (FP5-GROWTH), UNIVERSAL (FP5-IST), KniWood (FP5-CRAFT), RIMAP-NAS (FP5-GROWTH), STEPS (FP6-NMP-IP), ExtreMat (FP6-NMP-IP), KMM-NoE (FP6-NMP-NoE), NENAMAT (FP6-MAT-SSA) and CellForce (FP6-IST&NMP-STREP). It also participates in several COST actions e.g. COST 535, COST 537 and COST 533.

The Faculty shows expertise in investigation, characterization, and development of a wide range of materials types i.e. metals, polymers, ceramics and composites, as well as, experience in area of computational materials science addressing properties and phenomena that span multiple time and length scales and require multiscale modeling, including the related model validation.
The Faculty is working in close collaboration with industry since 1980. In the scope of this cooperation the following targeted research projects, related to the alternative fuels have been recently conducted:

- KBN 6T 08163 2001 c/5709 „Opracowanie systemu komponowania biopaliw w Polskim Koncernie Naftowym ORLEN S.A. w celu ograniczenia degradacji materiałów konstrukcyjnych silników wysokoprężnych", Centralne Laboratorium Naftowe
- KBN 6T08 2003 C/06196 „Opracowanie systemu komponowania olejów napędowych na bazie estrów oleju rzepakowego w GRUPA LOTOS S.A. spełniających warunki trwałości eksploatacyjnej infrastruktury maszyn górniczych, pojazdów i ciągników" WUT
- KBN 4T08E 019 23 pt. „Wpływ biokomponentów na strukturę i właściwości materiałów polimerowych stosowanych w systemie dystrybucji i użytkowania paliw", Centralne Laboratorium Naftowe.

Faculty of Materials Science and Engineering
Warsaw University of Technology (WUT)

Project Manager: Łukasz Ciupiński, Izabela Kijeńska
Woloska 141, 02-507 Warsaw, POLAND
Tel.:+48 22 660 8735
Fax.:+48 22 660 87 50
E-mail: lukas@inmat.pw.edu.pl, kijenska@inmat.pw.edu.pl
Website: www.materials.pl

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Partner's description: FGM-AMOR

FGM-AMOR (Forschungsgesellschaft Mobilität Austrian Mobility Research gemeinnützige GmbH FGM-AMOR), Austria

FGM-AMOR, a scientific private non-profit company based in Graz Austria, works in the spirit of sustainable developments in mobility and has more than ten years experience in EU-research focused on sustainable transport. The range of FGM-AMOR's activities includes research, consulting, training and project implementation in the fields of mobility management, alternative transport systems, and mobility telematics. FGM-AMOR is a multidisciplinary company with about 40 employees with very diverse backgrounds. The company employs eight experts in mobility management, three experts in transport planning, four experts in transport telematics and four experts in dissemination/layout and information design.
FGM-AMOR has already co-ordinated several European R&D projects of large scale like MOST (with more than 30 partners in 13 countries) and PORTAL (with 65 partners in 21 countries), FGM-AMOR provides reliable qualification for co-ordinating a project like SUGRE.
FGM-AMOR has a lot of experience in the research field of alternative fuelled vehicles. Through its participation in several national and international projects, FGM-AMOR has acquired profound knowledge in state-of-the-art vehicle technologies on the one hand, and on the other hand has gained comprehensive insight in market aspects as well as in user-needs and user-requirements regarding alternative fuels and alternative fuelled vehicles.|

Relevant experience and digest of reference projects:

- Within the European projects CIVITAS-TRENDSETTER and CENTAUR FGM-AMOR was and is responsible for the overall co-ordination, the monitoring, and the evaluation of the Bus and Taxi Biodiesel programme in the City of Graz, and the development of the integrated waste cooking oil collection schemes. Additionally, within the European project CENTAUR, FGM-AMOR has been co-ordinating the implementation of CNG-buses in public transport in Graz.
- Within the European project MATADOR (Management Tool for the Assessment of Drive line Technologies and Research) FGM-AMOR has conducted a survey amongst European fleet managers, investigating their strategies and demands in relation with the deployment of alternative drive line systems and alternative motor fuels.
- Within the International Energy Agency's joint Annex 8/21 of the 'Implementing Agreement for electric and hybrid vehicles' and the 'Implementing Agreement for alternative motor fuels' FGM-AMOR has been the leader of the subtask 'Market introduction strategies and programmes for alternative vehicles and fuels'. FGM-AMOR has assessed market introduction programmes for alternative fuels and alternative fuelled vehicles all over the world, and has developed 'best practice' guidelines for the market introduction of alternative fuelled vehicles.
- FGM-AMOR participated in the European project UTOPIA (Urban transport option for propulsion systems and instruments for analysis), where state-of-the-art technologies for alternative propulsion systems and their worldwide application in urban transport have been analysed, and guidelines for introduction of such alternative technologies in urban transport have been developed.
- FGM-AMOR conducted the national project 'Abgasfrei Mobil 2002', where innovative drive-drains for electric vehicles have been developed and deployed for passenger transport in sensitive alpine valleys in the Austrian province of Salzburg.

Partner's description: Icelandic New Energy, Ltd.

Icelandic New Energy is the promoter for using hydrogen as a fuel in the transportation sector in Iceland, thereby making it possible to head for an economy which is only run on renewable, local energy sources. The company's vision is to see the total conversion to hydrogen take place within 2050. INE works as a consultant in the cross-disciplinary approach that is needed to integrate hydrogen into today's society. The tasks consist of research, installation and operation of hydrogen equipment.
INE owns the 3 hydrogen buses in use in Reykjavik as part of the HyFleet:CUTE project. A hydrogen refilling station (the first commercial H2 station in the world when it opened in 2003) with an on-site electrolyser for H2 production is also owned and operated by INE, and one stationary fuel cell is being tested in Keflavik in cooperation with the US Army. Within SUGRE INE takes part in market analysis (WP2), creation of promotional and training materials (WPs 4 and 5), and dissemination (WP6).

Icelandic New Energy, Ltd.

Contact information: Website: http://www.newenergy.is, Tel. (+354) 588-0310

SUGRE contact: Jón Björn Skúlason, general manager. (skulason@newenergy.is)

Partner's description: BESEL

BESEL is a private company (SME) established in 1983 and devoted to engineering and consultancy. In 2006 the staff is 95 people. The turnover in 2004 amounted 4.9 Million Euro. Activity scope covers energy production and use (RUE & RES), environment, innovation management, financial engineering and research and development of energy technologies. Within the Mobility and Transport Area, main activities are focused on promoting alternative transports (infrastructures and services improvement, promotion campaigns, etc.) and measures addressed to diversification and energy saving (alternative fuels implementation, improvement of vehicles' maintenance, etc). Furthermore, awareness campaigns' role is becoming more significant into the mobility management.

Responsible person: Guillermo J. Escobar, Director of Dpt. Energy, Environment & Transport, guillermo.escobar@besel.es Tel +34 91 4445900, www.besel.es

Technical staff: Rocío Arias r.arias@besel.es, Darío Arias d.arias@besel.es

Energy, Environment & Transport Dpt.: Tel +34 983 457995

Main tasks: Leader of task 3.1 Bridging the Gaps – Enabling Factors; Leader of task 5.1 Adapting info packages for fleet managers; Other technical assistance and co-ordination tasks

EUROPEAN UNION POLICY FOR BIOFUELS

European Commission issued recently document "An EU Strategy for Biofuels" COM(2006)34. The document presents three key areas in which the European Commission should act and aim at:

- Promotion of biofuels usage, not only in the European Union, but also in developing countries,
- Preparation for biofuels mass production trough uprising biofuel cost competitiveness and intensification of R&D activities on second generation of fuels,
- Support for developing countries in which biofuels production may act as a stimuli for sustainable economic development.

Mrs. Mariann Fischer Boel, EU Commissioner for Agriculture and Rural Development claims that high prices of crude oil, needs to meet Kyoto Protocol requirements and recently occurred problems with gas import from Russia, make a fuel independence a key issue for the European Union. The new strategy for biofuels is based on seven axes:

1. Development of industrial technology platform for biofuels, which is be responsible for preparing recommendations for future research in this area.
2. Research on bio-refineries is planned to be a priority subject in the 7th Framework Programme. This research should aimed at reduction of the production costs of biofuels by 30% up to 2010 and technologies for second generation on biofuels.
3. Development of biofuels sector in the European Union by promoting usage of public and private transport based on alternative fuels (bio-oil) which is easy to adopt in most types of vehicles.
4. Support for creating biofuels demand.
5. Promoting biofuels as environmentally friendly fuels.
6. Development of production and distribution opportunities for biofuels
7. Development of supply side for biofuels production.

More info on that subject is available on the webpage:
http://ec.europa.eu/agriculture/biomass/biofuel/index_en.htm

ALTERNATIVE FUELS IN SWEDEN

Sweden is planning to be the first country in the world independent from crude oil fuels and relying on alternative fuels. Which should lead to strengthening Swedish competitiveness and fostering economic growth and technology development.
In Sweden there is a social movement aiming at making country independent from petrol and petroleum products. There has been recently established consortium of industrial, academia and agriculture representatives, together with motor industry companies and civil service workers, that aims at withdrawing crude oil imports up to year 2020. This consortium is preparing special report for Swedish parliament.
Swedish Minister for sustainable development, Mrs. Mona Sahlin, declared, that government is going to pass fax incentives, in the form of a tax reduction, for conversion from fuels based on crude oil to alternative fuels. She also claimed greatest investments in "renewable society" and providing further financial resources for regional heating sources (e.g. geothermic or based on biomass).
Island and Brazil are two other countries which withdraw from economy based on crude oil fuels. Island has significant geothermal resources and plans to develop alternative propulsions based on hydrogen in its vehicles by the year 2050. Brazil develops its ethanol production extracted from sugar cane crops.
Sweden has heterogeneous energetic profile which can be helpful in withdrawing from crude oil fuels market. At present 26% of energy supply is produced from renewable energy resources. Sweden is based to significant level on nuclear energy, hydroelectric and other renewable resources. Although in 1980 government made a decision to reduce share of the nuclear energy supply, it still have number of working reactors.
More info on that subject is available on the webpage:
http://www.sweden.gov.se/sb/d/3212/a/51058

BIOFUELS REGULATIONS IN POLAND

Polish government accepted, on 20th June 2006, a project of the act on bio-components and liquid fuels. The project provides that by the year 2010 share of bio-components in fuels will reach the level of 5,75%, according to the requirements of the European Union policy. Application of this provision will incur annual costs of 1,67 millions PLN (ca € 420.000). The Prime Minister, Mr. Kazimierz Marcinkiewicz, claimed also that new regulation will also include special provisions concerning production of biofuels for ones own usage.

Polish Information Agency, 20th June 2006.

Rape fields in Poland

"THE BEST WE DRINK, THE REST WE BURN" – ALTERNATIVE FUELS SUCCESS IN BRAZIL

INTRODUCTION

Brazil represents one of the best known success stories highlighting the development of alternative fuels. In order to promote ethanol as a fuel across the world, representatives of Brazilian government have been travelling abroad to present Brazilian experience.

INTERNATIONAL INTEREST

International attention is attracted to ethanol as it is a cleaner burning fuel, which can help to meet emissions targets required by the Kyoto Protocol. At the same time, industrial ethanol production may lead to reduction of the state's dependency on petrol. Energy issues have became a vital issue, throughout Europe, the USA and Asia.

CASE STUDY

The story began in 1970s and1980s when Brazilian scientists started to develop a technology to use ethanol as a substitute fuel for oil based products. In 2003 an affordable technology for fuel mixtures made from sugar cane crops was ready for adapting for industrial production.

Currently Brazil has six million hectares of sugar cane plantations devoted to ethanol production. According to the Brazilian State's Agriculture Research Corporation (Embrapa), there is potential for plantations of up to 90 million hectares in Brazil as at present there are plantation only in southern Brazil. The typical, size of a sugar cane plantation is about 20 thousands hectares, which produce around 1.5 million tones of sugar cane annually. There are about 100,000 independent sugar cane producers in Brazil, butt they differ in size and production output.

However, almost 185,000 vehicles, working on flexi-fuel propulsion were sold in December 2005 in Brazil amounting to 70% of all cars sold in Brazil in this period.

One of the key factors promoting the development of alternative fuel production is cost. The price of ethanol fuel produced from sugar cane is 40% cheaper than the price of petrol.

Luiz Custodio Martins, president of the Sugar and Alcohol Union in Minas Gerais, Brazil's second largest sugar-production state, claims the if the price relationship remains at the same level, in 2006, 95% of vehicles produced will be designed for flexi fuel operation.

It should be noted, that ethanol production is a labour-intensive activity. This leads to an increase in the number of employment opportunities, which encourages the development of the production of the alternative fuel in the poorest regions of Brazil, which, being tropical, are also the best regions for the growth of sugar cane.

At the moment more than one million people are employed in the sugar cane industry. The development of the industry may have created an additional one million jobs directly and 1.5 million indirectly.

THREATS AND OBSTACLES

The ethanol industry is a promising economic opportunity, not only for Brazil, but also for other countries in the region,

however it is underdeveloped due to the problems and difficulties related to distribution.

There are 30 000 ethanol outlets in Brazil, which meet the existing demand in the country.

The problem arises from the low number of vehicles adopted for using flexible fuels based on the ethanol mixtures.

There is also a question can the Brazilian production of ethanol meet foreign demand for this alternative fuel, which is required by China and the African states. According to the Sao Paulo's sugar cane agro-industry union (Unica), the production of ethanol in Brazil should increase by 10 billion litres by 2010 to meet overseas demand. The largest producers of sugar cane believe in Brazil's potential and are confident that production will reach this level.

ANECDOTE

The crops produced on sugar cane plantations are used, not only for the ethanol industry, but also for extracting Cachaça, the Brazilian national drink, a type of rum. According to Brazilian proverb "The best we drink, the rest we burn".

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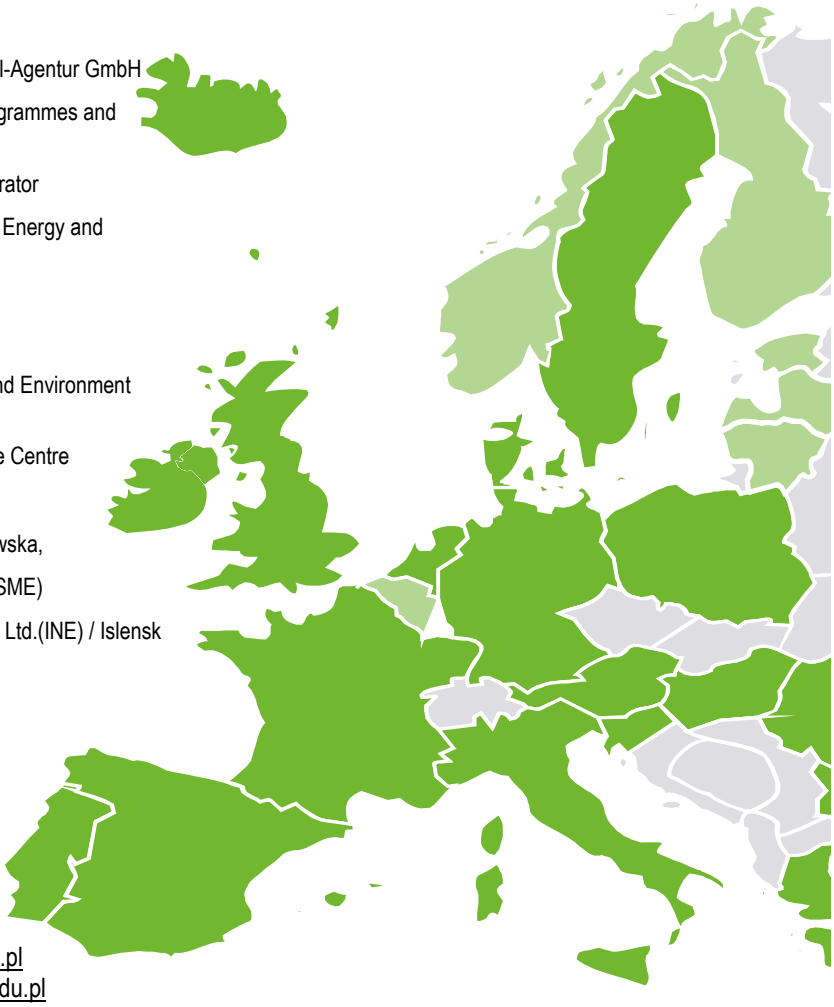
- Wydzial Inzynierii Materialowej (WUT-FSME)
- Iceland Reykjavik Icelandic New Energy Ltd.(INE) / Islensk NyOrka ehf.
- Germany Bremen BrEK

REVIEW TEAM

- Belgium Brussels AVERE, c/o VUB-TW-ETEC
- Finland Espoo IEA-AMF(IMPLEMENTING AGREEMENT on ADVANCED MOTOR FUELS), VTT PROCESSES
- Ireland Dublin UCD Richview, Planning and Envionmental Policy
- Slovenia Ljubljana Laboratory of Catalysis and Chemical Reaction Engineering, National Institue of Chemistry (KI)

SU:GRE
Sustainable Green Fleets



Warsaw University of Technology
Faculty of Materials Science
and Engineering (WUT-FSME)

Newsletter Contact Person:
Lukasz Ciupinski lukas@inmat.pw.edu.pl
Izabela Kijenska kijenska@inmat.pw.edu.pl

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