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Dear readers of the 3<sup>rd</sup> MADEGASCAR e-letter!

This time we would like to present you some regional best practice examples for market implementation of CNG to fuel vehicles as well as various marketing activities in the partner countries to increase the share of natural gas vehicles. Bulgaria will give us an overview of their latest statistics that show a continuing growth trend of the number of NGVs in use and the UK talks about the challenge of "changing a nation's mindset".

## Regional best practises for market implementation (in alphabetical order)

### Eastern Bulgaria (Bulgaria)

#### *Positive stats for Bulgarian CNG sector*

By the end of 2008, the CNG related statistics of the Bulgarian transport sector proved once again the persistent growth trend since previous years: Currently 60.000 NGV's are in use – which implies an increase of 50% compared to 2007.

With this significant increase of NGVs Bulgaria could advance its position in the world list of CNG countries, from rank 20 to rank 18. With the number of NGVs in use, the number of the Bulgarian CNG stations increased as well. During the last year Bulgaria broadened the gas station grid from 59 to 74 operating gas stations – reaching rank 29. (est. REMIX Bulgaria OOD).

With 8,3 NGVs per 1000 people, Bulgaria takes the 7<sup>th</sup> place in the world list (the average is 1.73 for all NGV countries). The major drive behind this dynamic development of the CNG market here remains the Taxi's sector, where more than 73% of the yellow cars are already running on CNG. This tendency keeps prices of taxi services comparatively low (16<sup>th</sup> position in Europe for prices of CNG per liter gasoline and 22<sup>nd</sup> as net CNG price), making them more popular and of a wider use, thus making a living for more taxi drivers' families possible in return.



### Vilnius (Lithuania)

The Czech bus TEDOM now operates in Vilnius. It is running in Vilnius Kaunas and Klaipeda to raise public awareness of ecological features in public transport. To be silhouetted against the conventional

buses operating in public transport, the TEDOM buses have eye-catching features, e.g. orange colour and „CNG” as a big advertisement on the board.



The private owned company UAB „Autoideja” represents the Czech bus company TEDOM in Lithuania. Furthermore the first CNG filling station is being tested in Klaipeda which is run by the private owned company UAB „SG dujos”, the Municipality of Klaipeda Town as well as the gas supply and distribution company in Lithuania.

The Municipality of Klaipeda Town, the NG supply and distribution company AB „Lietuvos dujos”, private company UAB „SG dujos”, are the main partners for the NGV project in Klaipeda region.

### **Mälardalen (Sweden)**

Mälardalen Energy Agency (Biogas East) arranged a Madagascar workshop involving presentations about LBG – Liquefied Biogas. In the Mälardalen and Stockholm region of Sweden there is no existing gas grid, and bio-methane used for filling stations is mainly transported within compressed cans by heavy trucks. This transport process counteracts some against the overall environmental benefit associated with use of alternative fuels, and it is not always cost effective. By cooling and upgrading the biogas with a cryogenic technique, the bio-methane becomes liquefied and consumes six hundred times less volume.

As a byproduct, liquid carbon dioxide is obtained, which is a product sought after by cooling transports for instance. In addition, the cryogenic technique is a superior way to purify landfill gas. The introduction of the new LBG technique will therefore become a major breakthrough in the bio-methane sector, not only due to it's upgrading capabilities, but also in achieving greater convenience and cost-effectiveness in the storage and transportation of large quantities of bio-methane. Throughout the workshop, several renowned companies confirmed, that this technique is already well proven, from production and distribution to the end user. The moderator of the day summarized the workshop by saying that LBG must mean – A Little Better Gas! The workshop was fully booked, and over sixty people traveled from all over the country to hear Scandinavian Biogas, Scandinavian GtS, AGA Gas AB, Ageratec and Clean Air Power present their work in the field.



#### *Brochure with case studies of bio-methane filling stations*

Within the Madagascar project, Mälardalen Energy Agency has produced a brochure with case studies of five existing bio-methane filling stations in Sweden. In the booklet you can read about good examples of how filling stations can be constructed, owned and operated. Download it at the Madagascar webpage – *Bio-methane filling stations – five Swedish cases.*

### **Prague (Czech Republic)**

Prague Zoo may „run” on bio-methane from their bio waste. The zoological garden in the capital city of Czech Republic decided to organize a tender for the construction of a centre for bio waste produced

by local fauna and flora. The centre shall include a small biogas plant and composting facility and its goal is to demonstrate the visitors the lifecycle of organic materials which may find its use as both a source of energy and fertilizer. The aim is to make use of the produced biogas as a source of energy (motor fuel) to fuel all Zoo vehicles including the fleet of several passenger cars, VANS, tractors, buses and small-scale electric rovers.

Applications for the tender can be submitted from March till June 2009 and the best filed in project will be announced by the end of the year. The whole project coordination including the tender is coordinated by SEVEN, the Czech partner to MADEGASCAR project.

### **Somerset (UK)**

Changing the mindset of a nation's way of thinking is a challenge, but in any organisation there will nearly always be that one special person who acts as a 'missionary' to take on this challenge. We feel that at Organic Power we have acted as 'missionaries' for many years promoting anaerobic digestion to produce bio-methane as a vehicle fuel.

The task for many members of Madegascar has been to identify this person within the relevant organisations to be the 'missionary' with whom they can work. In Somerset we have been very lucky in that Keith Wheaton-Green, the Climate Change officer of South Somerset District Council, has had an interest in biogas plants and bio-methane as a vehicle fuel for many years, and organised a conference „Biogas - Exploding the Myths“ in 2006.

Largely thanks to Keith's work and his support of Madegascar from its inception, both South Somerset District Council and Somerset County Council are fully supportive of the aims of Madegascar and have agreed to act as network partners. Keith hosted the first of our Regional Network meetings, attended one of the Study Days run under the auspices of Madegascar, and most importantly has encouraged members of both councils to visit Organic Power to learn more about Madegascar and the work we are doing. Following meetings both councils are now fully supportive of biogas plants as a means of treating organic waste and of bio-methane and natural gas as a clean and efficient vehicle fuel.

Only today we had a visit from officers of Somerset County Council asking 'what more can we do to help?'. What a change! We believe that this has come about largely as a result of the enthusiasm of Keith Wheaton-Green and Organic Power as 'missionaries' for bio-methane, which is quietly being accepted as the world's most environmentally friendly fuel.

### **Styria (Austria)**

In a big test running over three month with the Mercedes-Benz NGT-Sprinter (natural gas technology) the logistic center Karlsdorf DPD with support from the car dealer Konrad Wittwar Ges.m.b.H. and the Steirischen Gas-Wärme GmbH was testing the practical suitability of these vehicles.

With three different operators in the operational area „short way in the city“, „mixed mode short and long way“ as well as only „long way“ all possible ranges of the operational area with a transporter were covered. In total 10.918 km were driven and 8.427 parcels at 4.418 stops delivered. As Mr.

Christian Pabst of DPD-Kalsdorf, who is also the environment issue manager of DPD-Austria states, the natural gas Sprinter could not at all be distinguished in the daily operation of the parcel service



from a conventional diesel fuelled vehicle. A special advantage in the long way operation is the range of the vehicle of up to 1.000 km, as two fuel systems are practically in operation at the same time (bivalent). The economic benefit in the „natural gas operation“ especially on short ways is also given, as natural gas as a fuel is still cheaper than diesel or petrol. The handling and the fuelling of the vehicles proved to be simple and particularly cleaner than with diesel.

The supply with natural gas in the practical experience was never a problem, as already now an area wide natural gas (CNG) network is available. As Mr. Heimo T. Blattner of the Steirischen Gas-Wärme GmbH points out, the Styrian filling station network will be extended further to increase the security of supply. The efficiency is clearly visible. The real savings regarding fuelling costs in the city operation amounts to considerable 15 %. Also the environmental balance is enjoyable as no soot or particulate matters in comparison to diesel are accrued. A further positive aspect is the fact, that natural gas vehicles can also be operated with compressed bio-methane, whereby the CO<sub>2</sub>-balance of natural gas vehicles can clearly be improved.

### Warsaw (Poland)



So far the WAWA Taxi corporation is the single CNG taxi fleet in Poland, operating only in Warsaw. Founded 15 years ago, it started using CNG vehicles – Seat Altea and Seat Toledo – 4 years ago. Due to close cooperation with SEAT all CNG cabs are provided and serviced by this company. The „WAWA TAXI“ fleet consists of 500 vehicles whereof about 160 of them are fuelled with CNG and this number is continuously growing. SEAT assembles all CNG installations and provides the „WAWA Taxi“ company with brand new cars. All CNG fuelled cabs are equipped with 3 steel containers located in luggage compartment. Total weight of containers is about 100kg (3 x 33kg) and Their total capacity is about 18m<sup>3</sup>. Cruising range of such vehicles vary from 150 to 200 km which is enough for one day of driving.

Following the company representative's opinion WAWA Taxi buys 3-4 CNG taxi cars every 2 weeks and then leases them to drivers. Another option for taxi drivers is to buy their own vehicle instead of leasing them from Wawa Taxi. Future plan of the company is to buy CNG fuelled cars solely. All SEATs are dual-fuel cars: CNG and petrol. Cars are also equipped with a special CNG logo to promote the idea of using ecological fuel. The Institute for Renewable Energy points out the taxi company as a brilliant example of implementation CNG in car fleets.

Hopefully other companies will follow this way. Besides environmental advantages economical aspects are significant as well. Savings from the use of CNG fuelled cabs are enough to buy a new car after 5 years of operation! (in comparison to the use of a similar, petrol fuelled cab).

### Website

We have now uploaded first results of our work within the project and interesting marketing materials from the partners regions. So, please have a look at our MADEGASCAR project website [www.madegascar.eu](http://www.madegascar.eu) frequently.