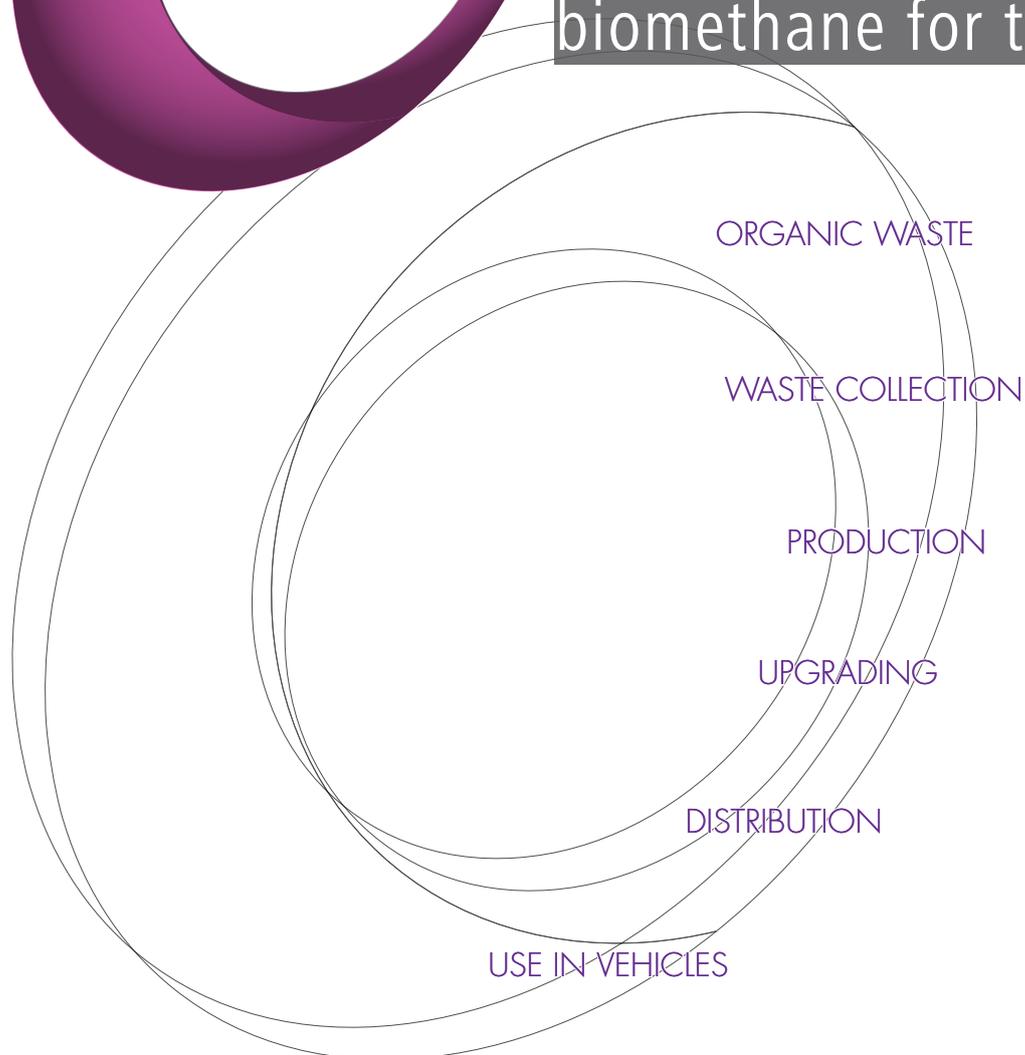




MASTER

biomethane for transport



»»»»»»»» BIOMASTER, A EUROPEAN PROJECT FOR RENEWABLE ENERGY, HELPS TO MEET EU'S 2020 STRATEGY ««««««««

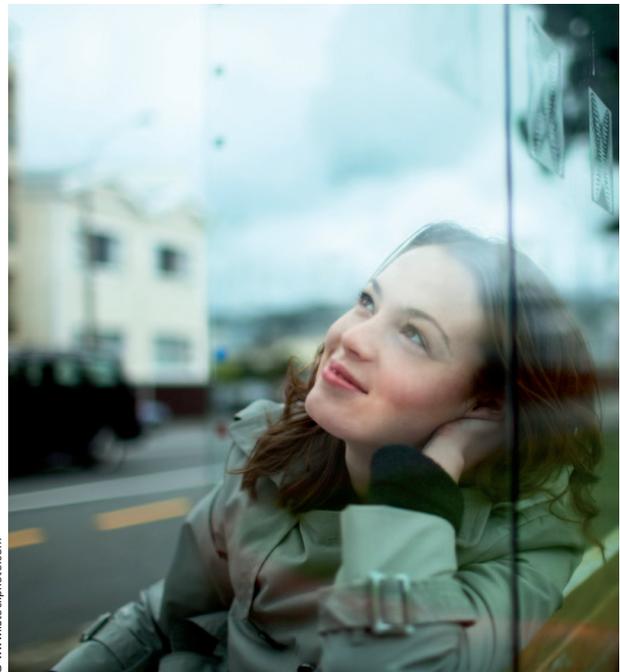
Between 118 and 138 million tonnes of bio-waste are produced every year in the European Union, of which about 88 million tonnes is municipal waste. This number is projected to increase by about 10% by 2020. The European Union presently has one of the strictest standards of legislation regarding waste management and landfill sites. The European Union's overall aim is "to prevent or reduce as far as possible negative effects on the environment, in particular the pollution of surface water, groundwater, soil and air, and on the global environment, including the greenhouse effect, as well as any resulting risk to human health, from the landfilling of waste, during the whole life-cycle of the landfill" ¹. About one-third of the European Union's 2020 10% target for renewable energy in transport could be met by using biomethane produced from bio-waste, while around 2% of the European Union's overall renewable energy target could be met if all bio-waste was turned into energy.



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BIOMASTER intends to address several challenges and targets of Renewable Energies for Europe towards 2020 ² as biomethane offers, among all biofuels, the best results in terms of energy and environmental performance, and it is also the only biofuel efficiently produced from several different sources. Additionally, it should be

recognised that the composition of biomethane is very similar to that of fossil gas, so biomethane can be readily substituted in vehicle engines designed to run on natural gas.



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BIOMASTER aims to bridge the operational gaps of the biomethane chain and to establish local groups of stakeholders to have open discussions and to create a mutual understanding which will boost the biomethane market.

¹ Communication COM(2010) 235 of 18 May 2010 on *Future steps in bio-waste management in the European Union*

² Communication COM(2011) 0031 of 31 January 2011 on *Renewable Energy: Progressing towards the 2020 target*

»»»»»»»» BIOMASTER ENGAGES WITH PEOPLE AND PROCESSES TO ENABLE A SIGNIFICANT BREAKTHROUGH IN THE UPTAKE OF BIOMETHANE FOR TRANSPORT ««««««««

By creating a project that links several members of the European Union, BIOMASTER makes it possible to address a wide variety of different situations, and to tackle the barriers to the use of biomethane for transport, in a way that would not be possible within one country alone. In Italy and Sweden, for example, there are significant numbers of vehicles, powered by CNG (Compressed Natural Gas), but only in Sweden has biomethane been widely introduced for transport, followed by Austria, Switzerland and Germany. In The Netherlands and the United Kingdom there is significant production of biogas at landfill sites or anaerobic digestion plants but little development of gas-powered transport. In other countries such as the Baltic States, Poland and Hungary there is great potential for biomethane but a need to increase the knowledge level and develop expertise.

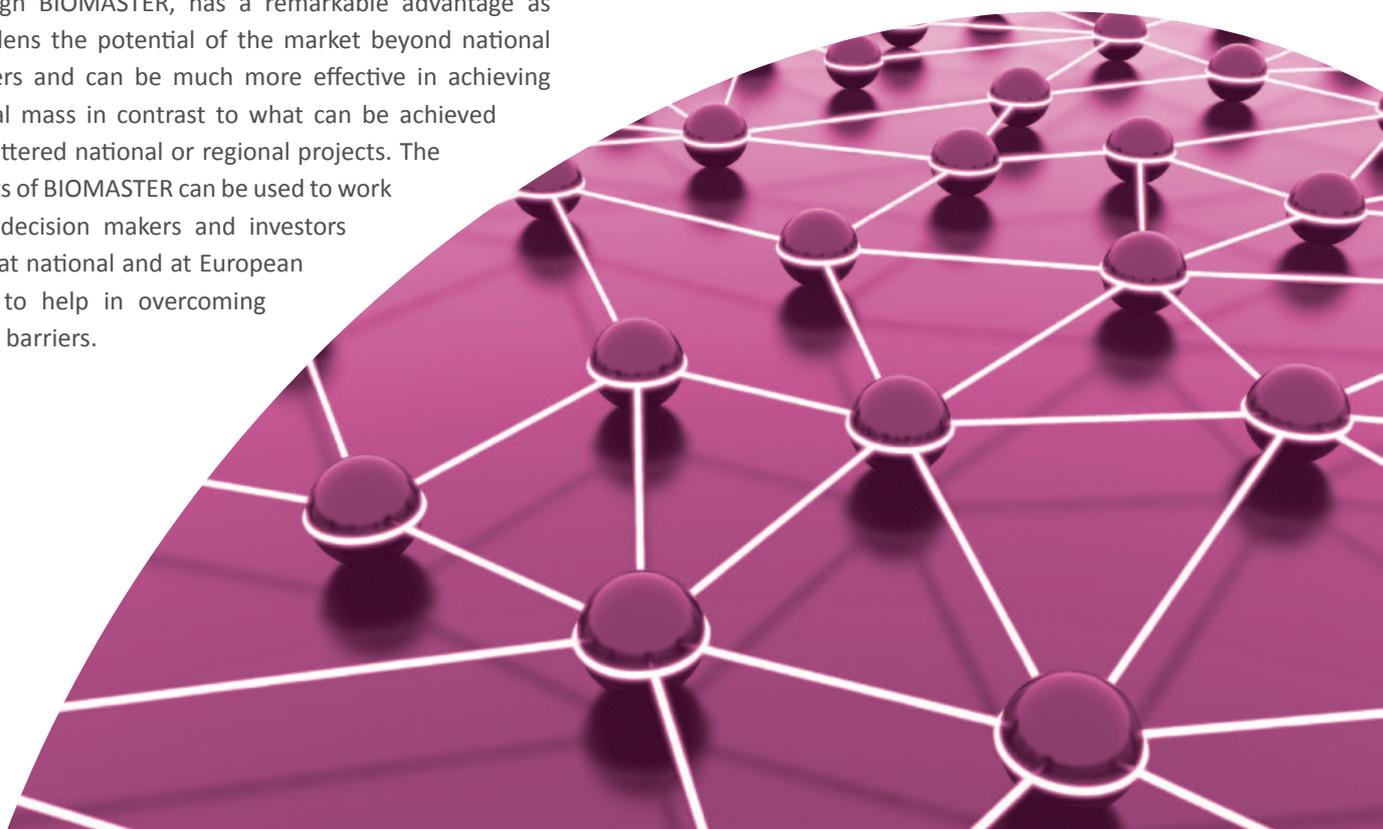
»Common solutions to similar problems can represent an important enabler of biomethane development.«

Promoting the biomethane economy at European level, through BIOMASTER, has a remarkable advantage as it widens the potential of the market beyond national borders and can be much more effective in achieving critical mass in contrast to what can be achieved in scattered national or regional projects. The results of BIOMASTER can be used to work with decision makers and investors both at national and at European level to help in overcoming those barriers.

Build relationships and just connect

by joining the BIOMASTER Network to participate in the discussion and share your point of view with others. Participate, disagree and learn with colleagues from the whole of Europe to:

- **bring biomethane to the centre of public policy debate**
- **interact with the business community and other institutions**
- **focus on the overarching benefits created by biomethane**
- **address the persisting legal, fiscal and organisational obstacles to market break-through**
- **attract interest on biomethane on not just a regional, but also on a national level**



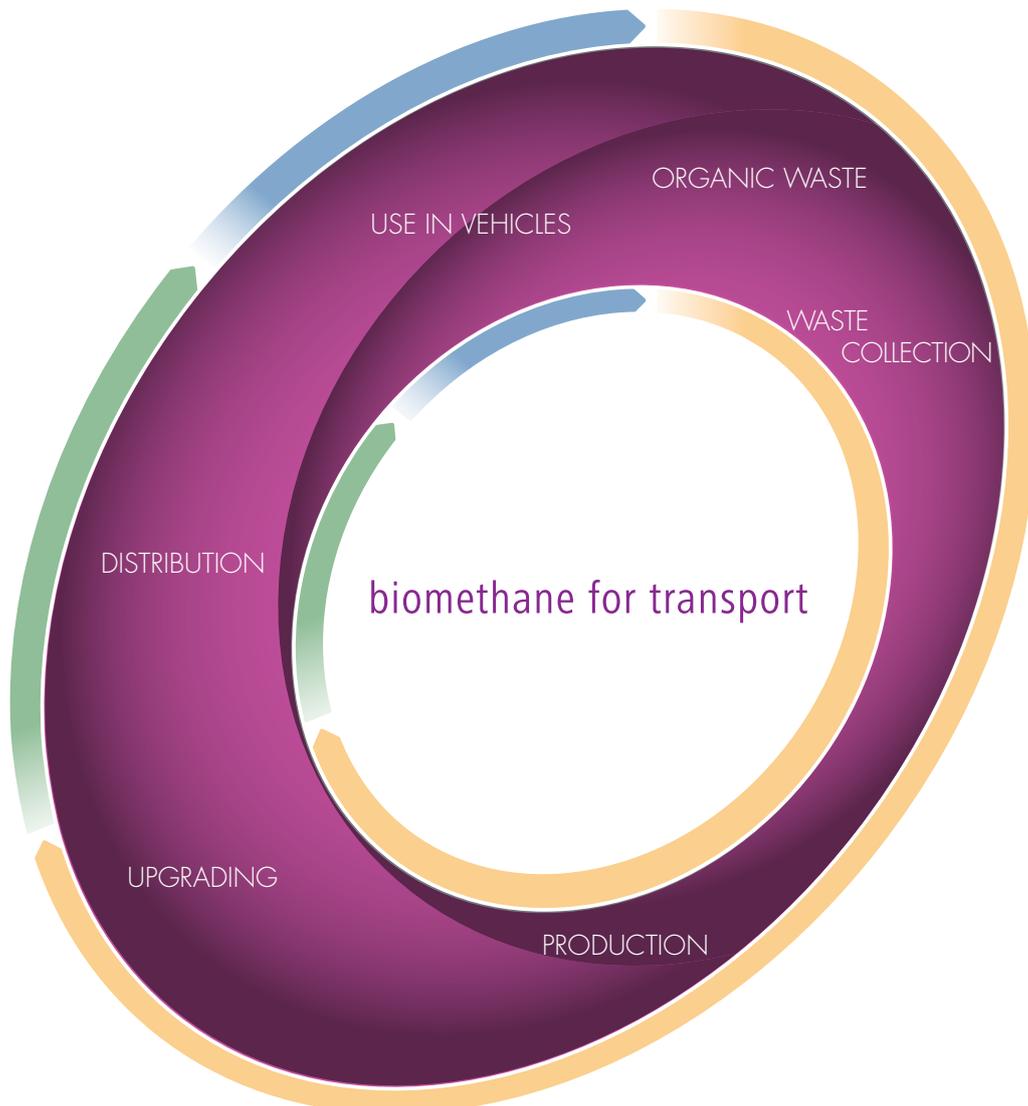
BIOMASTER IS READY TO EXPLOIT THE POTENTIAL OF BIOMETHANE WITH THE COMMITMENT OF A ›WASTE-TO-WHEEL‹ PARTNERSHIP

There are significant barriers to the use of biomethane for transport that have prevented uptake almost everywhere across the European Union. In several countries biogas exists almost exclusively for power generation, supported by financial incentive systems, while similar schemes do not exist for biomethane for transport, so hindering the growth of that market.

The four participating regions in BIOMASTER, Małopolska Region (Poland), Norfolk County (United Kingdom), Skåne Region (Sweden) and Trentino Province (Italy), are work-

ing together to promote biomethane production and use for transport. They are undertaking a joint initiative involving all the key components of the biomethane chain, stimulating investment, lobbying to remove non-technological barriers and mobilising action for uptake.

Through BIOMASTER each partner region will expand the use of biomethane in vehicles with a view to sharing this information more broadly across Europe.





At the top of the biomethane chain, BIOMASTER addresses all stages of biogas production and upgrading, from feedstock, through production to upgrading to the appropriate quality for distribution; it also considers use of by-products and residuals that result from the production process.

With the intent of proving the potential for biomethane production, each participating region assesses innovative feedstock collection and treatment systems, investigates the optimum way to combine diverse feedstock and biogas streams, assesses the technical and economic viability of upgrading technologies, investigate the issue of security of sustainable feedstock supply and the relevance of public procurement contracts, and develops methods for proper management of waste.



A core part of BIOMASTER is dealing with grid injection of biomethane and other distribution options. Biomethane can be distributed by injection into the natural gas grid or transported in either compressed or liquefied form.

BIOMASTER encourages biomethane injection into natural gas grid, including streamlining procedures for grid connection, compares the effects of the quality standards of natural gas versus biomethane used for different markets, assesses the practical, financial and environmental effectiveness of grid injection as a method of distribution as compared to physical transport in compressed or liquefied form, and finally enhances knowledge about the requirements for fuelling stations.



BIOMASTER aims to expand the use of biomethane as a renewable fuel in vehicles with a view to sharing this information more broadly in Europe.

BIOMASTER has the ambition of closing the biomethane loop by attracting the interest of fleet managers, purchasers and vehicle dealers to significantly increase the number of biomethane powered vehicles in the BIOMASTER sites and beyond them. This will be done by addressing issues such as biomethane and engine performance for use in vehicles, innovative technologies to improve storage in vehicles, use in different typologies of fleets, and last but not least policies to boost the vehicle market, including vehicle procurement, duties, taxes and charges reduction.



BIOMASTER is a project, co-funded by the Intelligent Energy Europe-Programme and is composed of 17 partners, coming from Austria, Italy, Poland, Sweden and the United Kingdom. It runs from 01 May 2011 until 30 April 2014.

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