

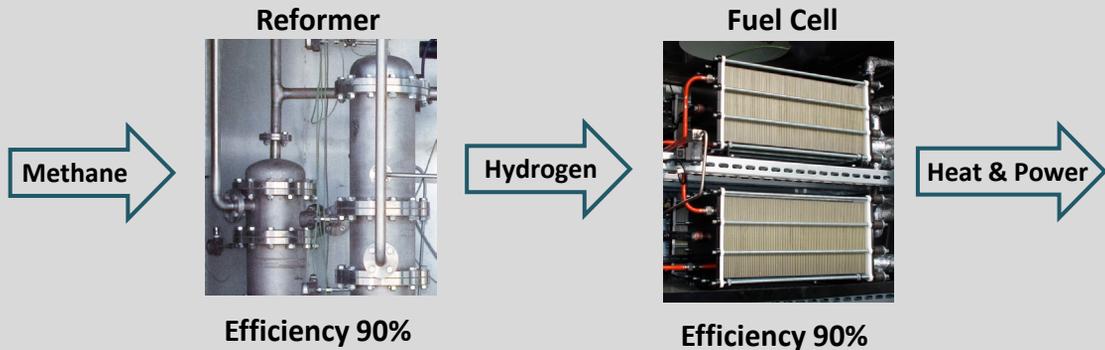
metaconTM

CLEAN ENERGY FOR INDEPENDENCE

**Technology for pure hydrogen, electricity
and high value heat from biomethane**



Our technology is ready to use for a cost efficient power production



Converting biogas or natural gas into hydrogen

A clean stream of biogas or natural gas is mixed with water and fed to the reforming reactor to produce hydrogen. Since a large portion of the hydrogen comes from water, water acts as a fuel in this process. Our combination of patented reactor design and catalysts gives a unique so called Heat Integrated Wall Reactors (HIWAR) which functions simultaneously as highly efficient reactors and heat exchangers. The heat required for the process is produced by catalytic combustion of a fraction of the fuel, eliminating open flames and increasing process safety. Additional hydrogen is produced by the Water-Gas- Shift reaction which eliminates most of the CO by reacting it with water.

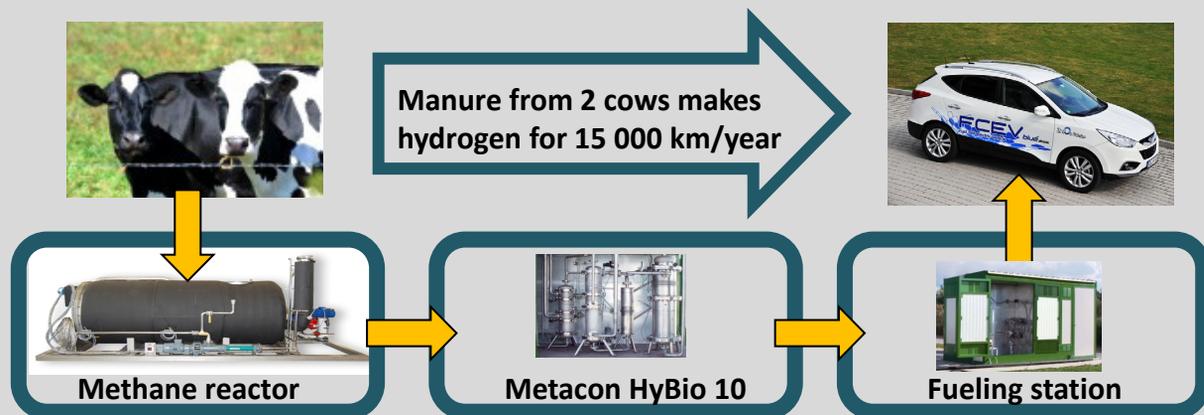
Converting hydrogen into clean electricity and heat

The hydrogen from the reformer is fed to a high temperature polymer (HT PEM) fuel cell, where pure electricity and heat are produced through an electrochemical process. The fuel cell is liquid cooled and operates at 160 to 200 deg C, and the output hot water can be used for house or district heating and for sanitary hot water. The only waste product is clean water.

Highly effective combination of heat and power

The high heat integration of the unit allows it to operate in CHP mode. While reforming requires a heat input, several other processes produce heat. All the heat can be made available for the biogas digester or it can be used for heating and/or hot water production, etc. Power electronics which condition the electrical current to grid quality is included, and the system can also be operated in Island mode.

We offer complete hydrogen fueling stations and CHP systems



Waste to clean energy

Enormous amounts of energy in the form of methane produced by all the organic break-down processes in nature and in our ineffective waste management systems, while we are burning enormous amounts of fossil fuels. Both these processes are producing harmful greenhouse gases into the atmosphere. This pure stupidity must come to an end.

Metacon has developed the complete chain of high- tech systems that makes it possible to produce pure hydrogen locally from organic waste and methane produced by anaerobic digestion. Our Heat Integrated Wall Reactor (HIWAR) in combination with a modern, compact and fast methane reactor makes it possible to produce your own hydrogen fuel on the farm or by the supermarket or hotel, and to use that hydrogen for All your energy needs, And it improves the climate, provided that you use hydrogen produced locally, from methane that should, partly or in whole, have been evaporated into the atmosphere. Our system makes it possible to produce compact, modular reformer systems from 300 W up to MW size. For Combined Heat and Power fuel cells has integrated efficiently, both regarding heat management and water management, to give the highest total efficiency possible.

About Metacon

Metacon develops and markets energy systems for electrochemical conversion of biogas and natural gas to clean hydrogen, electricity and heat. Our systems are delivered turn- key for hydrogen production and with integrated fuel cell, for local heat and power production or for commercial energy supply through connection to electrical grid and district heating net. Technology and products are based on proprietary, patented reactor-catalyst configurations for fuel reformation processes.



Hydrogen from biomethane by small scale catalytic reactors is the road to our future

**Metacon AB (publ)
Hyttåsvägen 10
SE 691 50 Karlskoga Sweden
www.metacon.se
info@metacon.se**