

Regional Markets of RES-fuel cell systems for households

Abstract

The scope of the proposed action is to make a contribution for changing the development of renewable energy sources (RES) fuel cell household systems (FCHS) from solely R&D to include also market development and in this way accelerate the development of the technology and its economic performance.

The specific goal is to describe in a "catalogue" >20 regional markets for RES-FCHS with an aggregated market of >3,000 RES-FCHS units to be realized in 2006-07 or in the near future after. By cooperation between the regional RES-FCHS markets, the regional markets shall be used for driving down the costs of RES-FCHS to a level <5,000 EURO/kWe, e.g. By "pooling" of the regional markets to have a positive effect of scale. Lessons from the successful European technology and market development of wind turbines will be transferred into the RES-FCHS sector, making EU a driver of the global RES-FCHS development.

Objectives:

- Promote the development of the prime regional early niche markets for RES-FCHS;
- Establishment of new and additional regional early niche markets for RES-FCHS;
- Promote an EU market for RES-FCHS using the regional markets as a driving force for developing an EU market based on a trans-regional cooperation with more regions involved;
- Cost reductions of RES-FCHS of expected to reach a cost price of max. 5,000 EURO/kWe;
- Realize a market of RES-FCHS of expected minimum 3,000 RES-FCHS units, based on 10 regional markets;
- Establish an EU platform for further market development of regional early nich RES-FCHS markets
- Contribute to move RES-FCHS from R&D to market

Major barriers for the RES-FCHS Market

- No Legislation for H₂ use in households
- Cost of FC micro-CHP
- No subsidy for FC electricity
- H₂ for transport
- Competing technologies
 - Solar in Spain and Portugal
 - Geothermal in Iceland
 - MCFC (Biogas)
 - Stirling (on NG)
- Low heat consumption in Spain/Portugal
- Interest of stakeholders
- Diversity of the markets

Technology, geographic area and partners:

The main objectives are to develop market development plans for the 10 potential regional RES-FCHS markets for the 3 RES-FCHS solutions in the 5 involved countries:

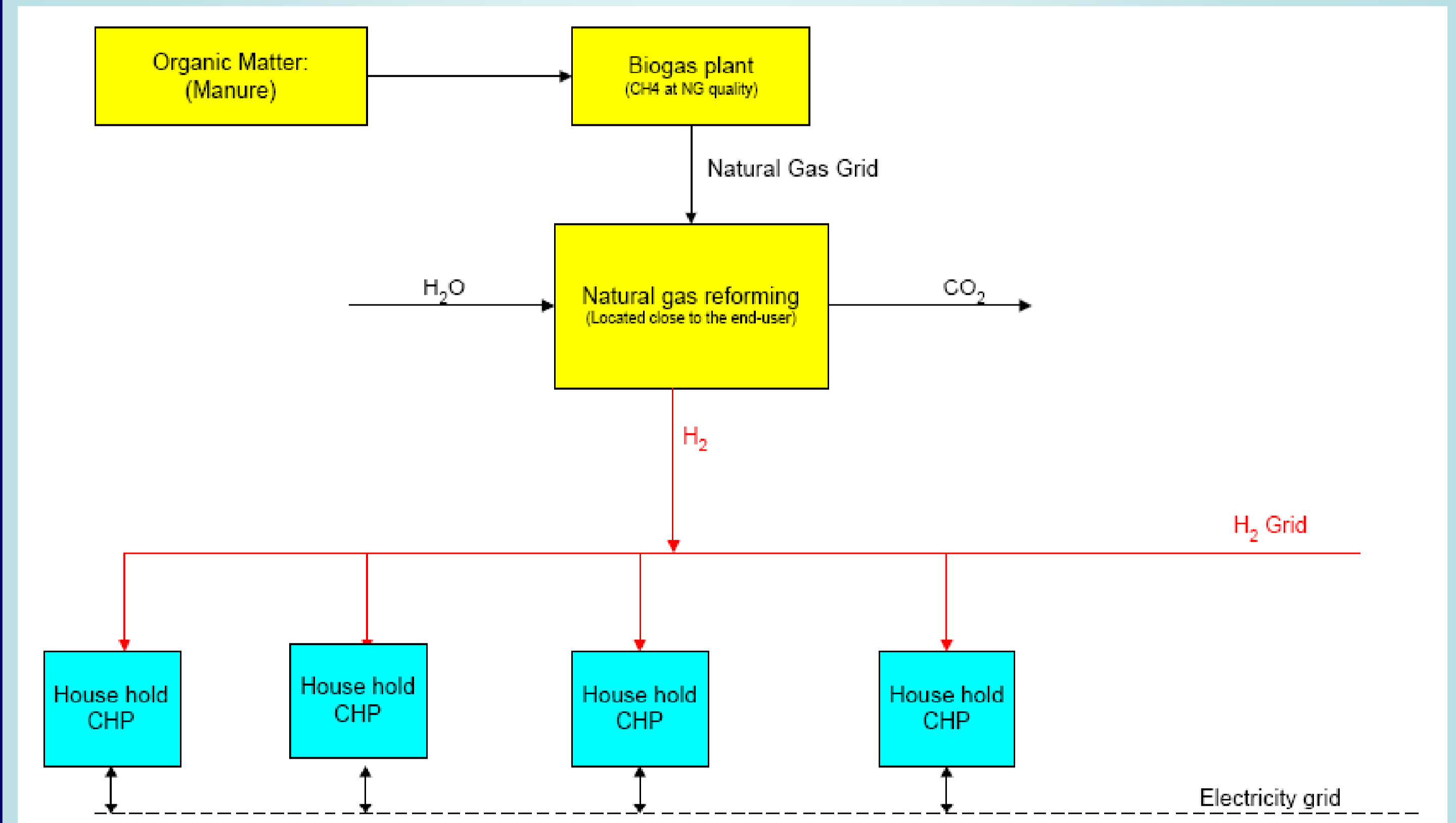
Technology and geographic area	Partner
•Biogas – possibly mixed with natural gas	
o Jutland, Denmark	AAU Esberj
o Baden-Württemberg, Germany	IBBK
•Ethanol/Methanol from bio-resources	
o Jutland, Denmark	Elsam
o Baden-Württemberg, Germany	KIBZ
o Reykjavik, Iceland	University of Iceland
•Low cost excess wind electricity/Hydrogen	
o Jutland, Denmark	HIRC
o Schleswig-Holstein, Germany	KBIZ
o North Friesland, The Netherlands	ECN
o Navarra & the Basque Country, Spain	CENNER
o Coimbra, Portugal	ISR-UC

In the development of the MDP plans, three issues are adressed:

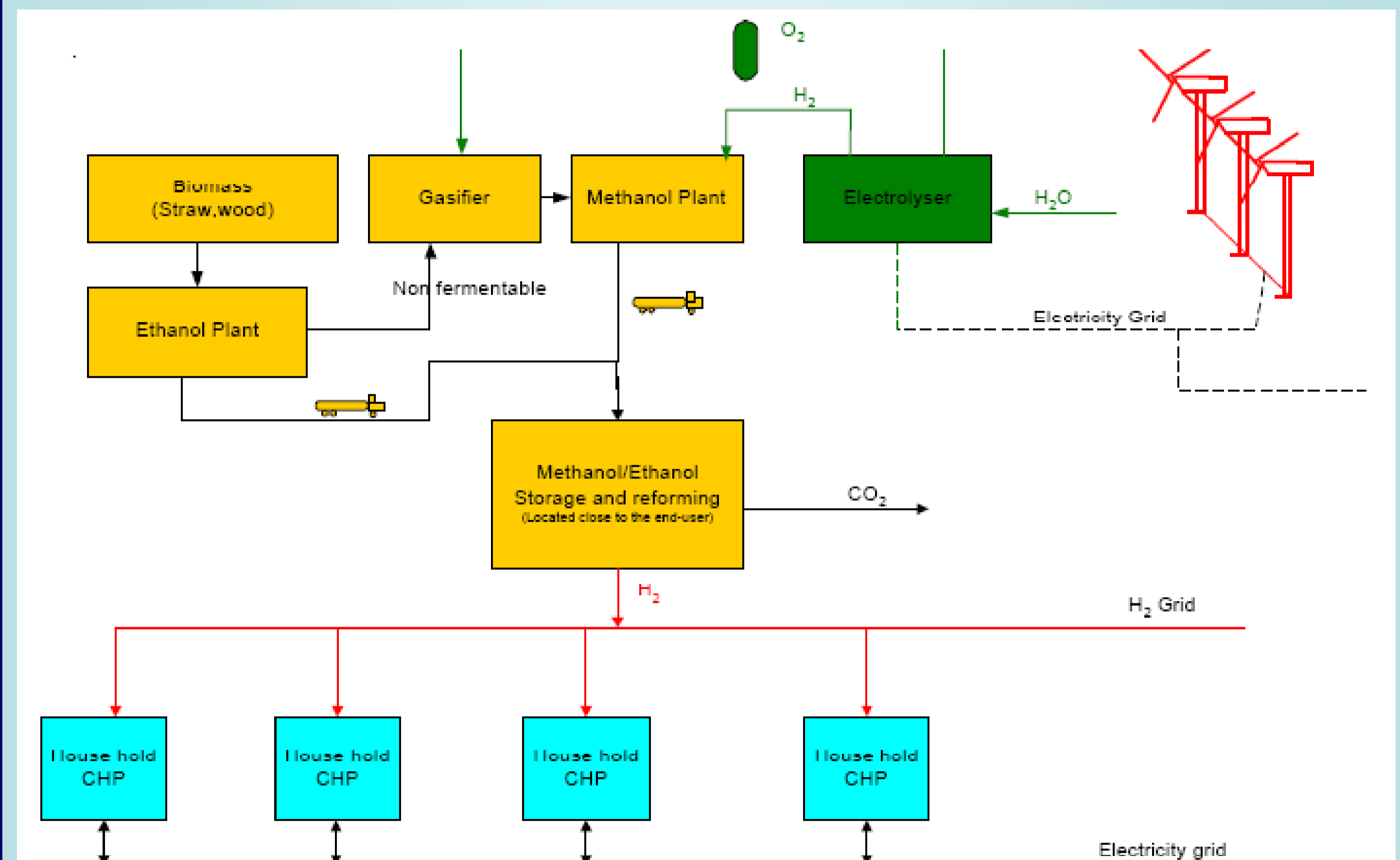
- The core of the MDP is an economic assessment of the use of the technology, demonstrating the technologies' economic feasibility;
- Organizational conditions are adressed with a basis in the actor analysis;
- Regulatory changes (if any) are outlined

Optimally, the MDP includes actual agreements with relevant partners on establishing the required pre-conditions to make the regional market for the technology in question viable.

Biogas to CHP



Biomass and wind to CHP



Only wind to CHP

