Biomass gasification and natural gas grid injection – GDF SUEZ

Biomass gasification is a promising way to make renewable energy. It produces syngas which can be turned into different kinds of energies: CHP (Combined Heat Power), bio-fuel or combined SNG (Substitute natural gas) and heat. EU Regulations are very high and target 20% renewable energy by 2020. Combined SNG/heat is environment-friendly (high energetic and chemical yields, local heat valorisation, reasonable biomass supply and valorisation). The objective is to reach a SNG that would satisfy the requirements for grid injection.

The VeGaz project studies the combined SNG/heat process, in the case of gasified biomass. It is part of an industrial project made of a demonstration operation and an R&D platform on biomass gasification and its different valorisation.

A usual process to make SNG and heat from biomass is made of 4 blocks: gasification, syngas conditioning, methanation, SNG conditioning for natural gas grid injection or for NGV.

One important part of the SNG conditioning is the CO2-CH4 split. Among all processes, PSA (Pressure Swing Adsorption) seems interesting in terms of efficiency, costs, and environmental impacts. But it still needs R&D to determine the best adsorbent, the number of reactors and the operating conditions. An important work on those technologies is done in partnership with a French laboratory on process engineering.