



Biomass gasification for SNG production

SNG stands for Substitute Natural Gas and is made from biogenic residues. SNG is also referred to as Green Gas or Renewable Natural Gas (RNG). SNG is a gas comprised mainly of methane. Depending on the region, the SNG quality varies with respect to H₂, CO, CO₂ and N₂ content. Besides the production through gasification, there are routes available through digestion (smaller scale) and routes under development for e-Methane. The producer gas can, after conventional gas cleaning and conditioning steps, be upgraded to SNG. For every ton of dry biomass gasified, about 0.3 ton of SNG can be produced together with about 0.6 ton of CO₂ of high quality.



The key benefits for SNG are

Product does not require new infrastructure and makes use of a world-wide commodity market.

It allows the usage in existing boilers or other NG applications.

Through valorization of local residues, countries can become less energy dependent.

In the process of making SNG, CO₂ becomes available and can be used for negative emissions.

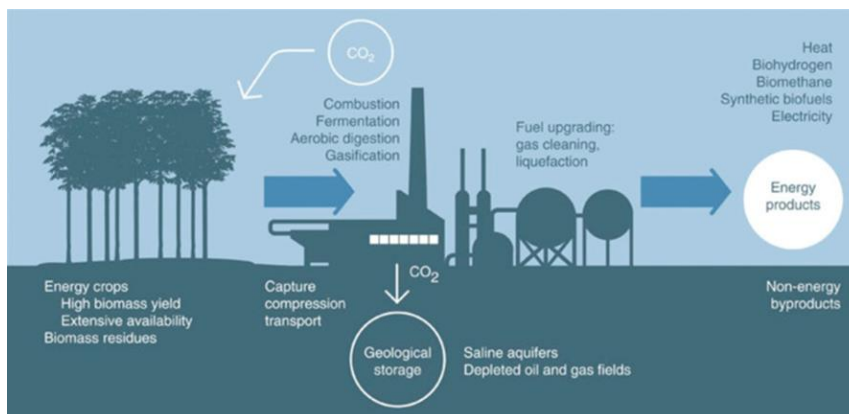
The SNG process also allows the utilization of hydrogen from renewables.

SNG considerations

Feedstocks that can be utilized are quite broad, from agro-residues, wood residues to derivatives of MSW. Each feedstock will impact the gasification technology.

Gasification technologies can be divided into direct and indirect approaches. The indirect approach in principle will result in the highest overall efficiency to methane.

Combining CCS with SNG production, provides many benefits to the energy system.



Concept of Bio-CCS (Sanchez et al., 2015, courtesy of Nature)

[Position paper on SNG 2022](#)

[SNG production combined with PtX](#)

[SNG production and CCS 2018](#)