Making the Green Deal real: The Bio-FlexGen technology

The Bio-FlexGen final event will highlight the development and integration of the efficient and flexible bioenergy power plant, the Biomass-Fired Top Cycle, or BTC. The BTC can produce electricity and heat, or hydrogen and biogenic CO2. Furthermore, the BTC can quickly start using hydrogen when additional electricity is needed. These attributes will be an important complement in the future energy system with fluctuating supply of renewable energy from solar and wind power plants.
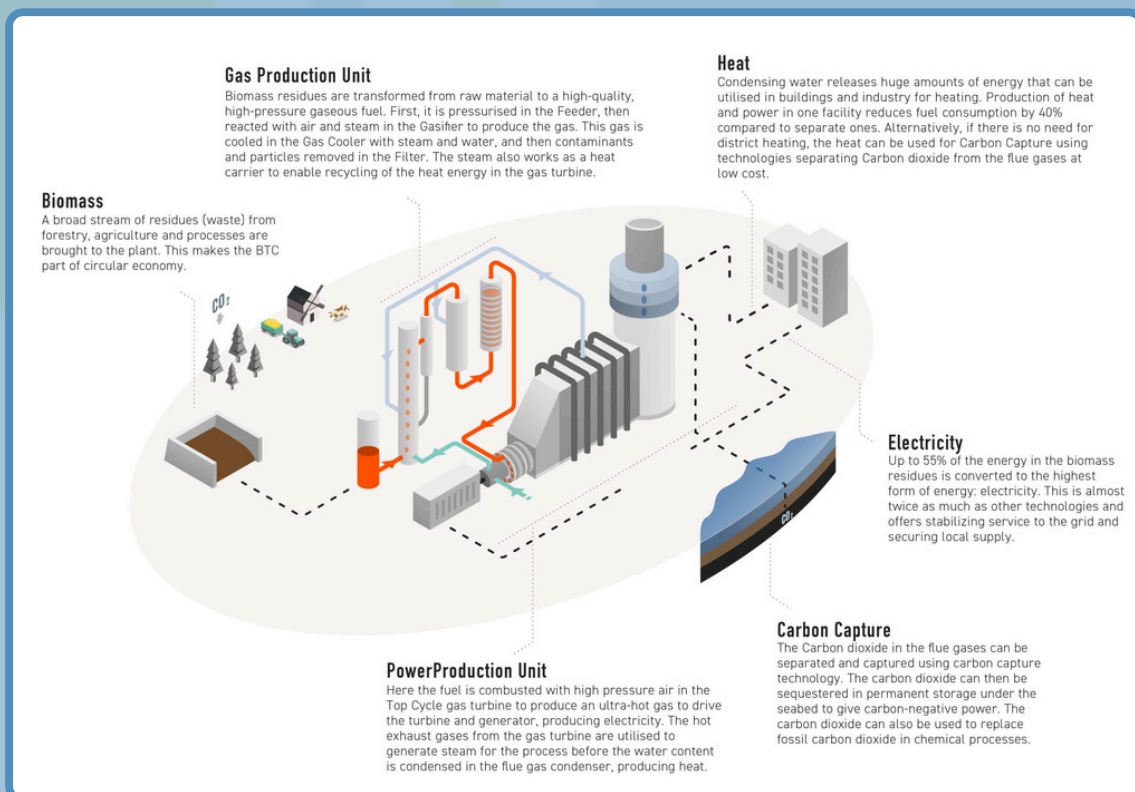
Bio-FlexGen in a nutshell

* Why Bio-FlexGen?

Speaker: Susanne Paulrud, senior researcher at RISE (Research Institute of Sweden), Bio-FlexGen coordinator

Introducing the novel BTC concept and the required gasification and combustion technologies

* High efficiency biopower, green hydrogen and fast response H2-power
* Unique combination of gasification and gas turbines
* Flexibility across feedstocks, fuels and products

Speaker: Michael Bartlett, CTO and co-founder of Phoenix BioPower

Hybrid Fluidised Bed gasifier validated for pressurised operations

* Novel two-component bed particles system
* Unique hydrodynamic testing rig
* Measurement and diagnostic tools

Speaker: Chunguang Zhou, Chief Engineer at Phoenix BioPower

Fuel switching capabilities of the novel combustion system between biomass syngas and hydrogen

* Combustion rig and technology validation
* Ignition and fuel switching tests

Speaker: Felix Güthe, head of combustion at Phoenix BioPower

BTC integration in the Swedish Energy System

*The performance of the BTC plant:
* Business use case level
* System level

Speaker: Yelena Vardanyan, senior researcher at RISE (Research Institute of Sweden).

BTC integration in the Spanish Energy System

*The performance of the BTC plant:
* Business use case level
* System level

Speaker: José Pablo Chaves Ávila, researcher at the Institute for Research in Technology (IIT) at Comillas Pontifical University in Madrid.