



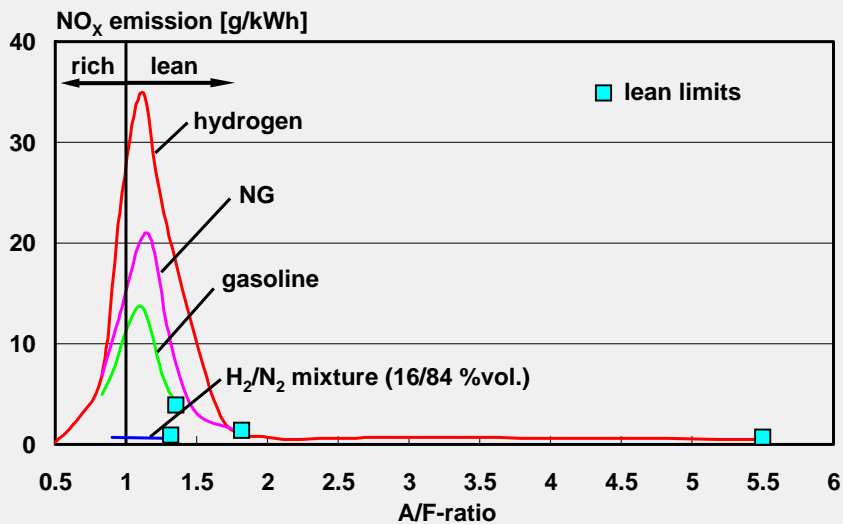
GE Jenbacher

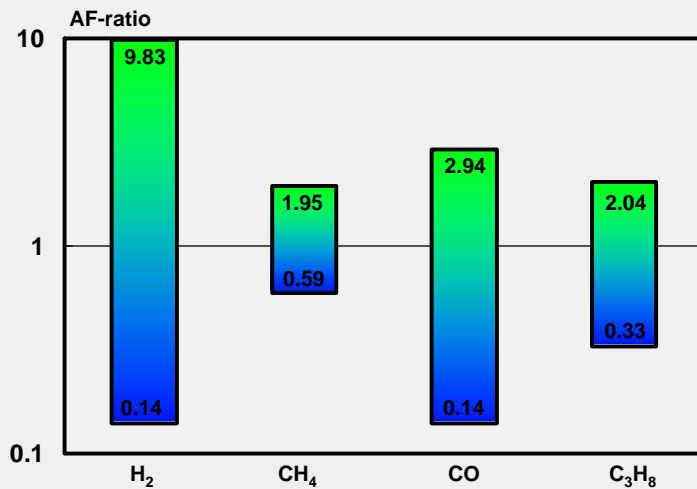
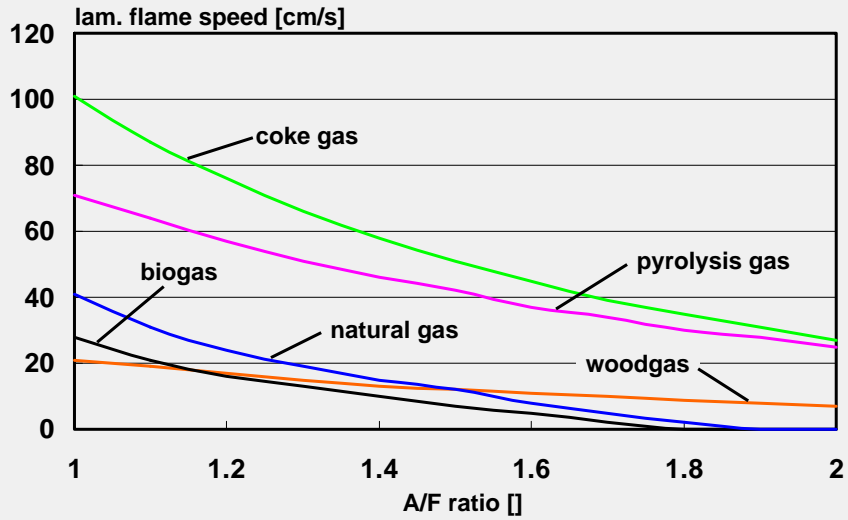
Stationary Gas Engines with H₂ as Fuel
or as Fuel Component

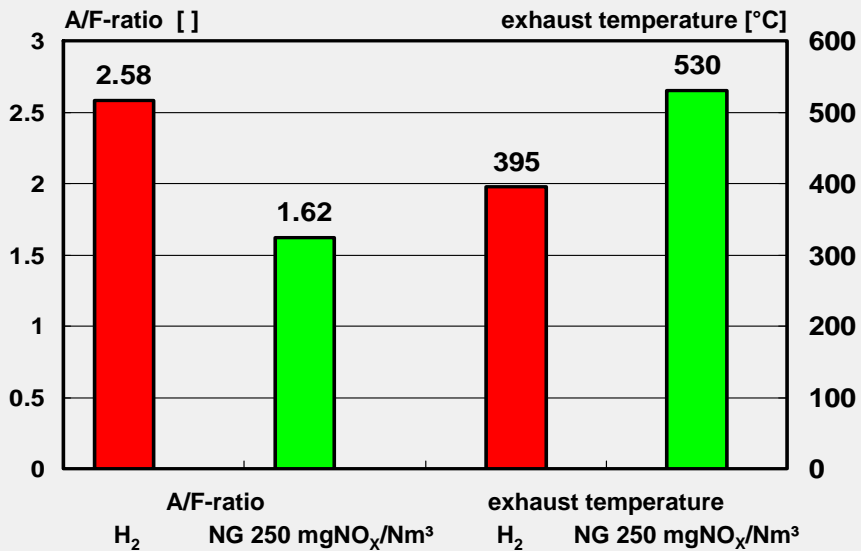
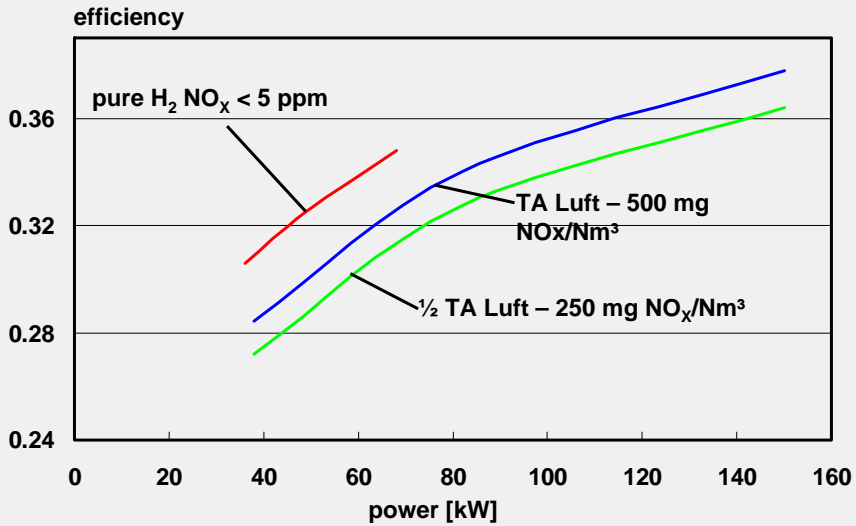
Dr. Guenther Herdin
CTO GE Jenbacher

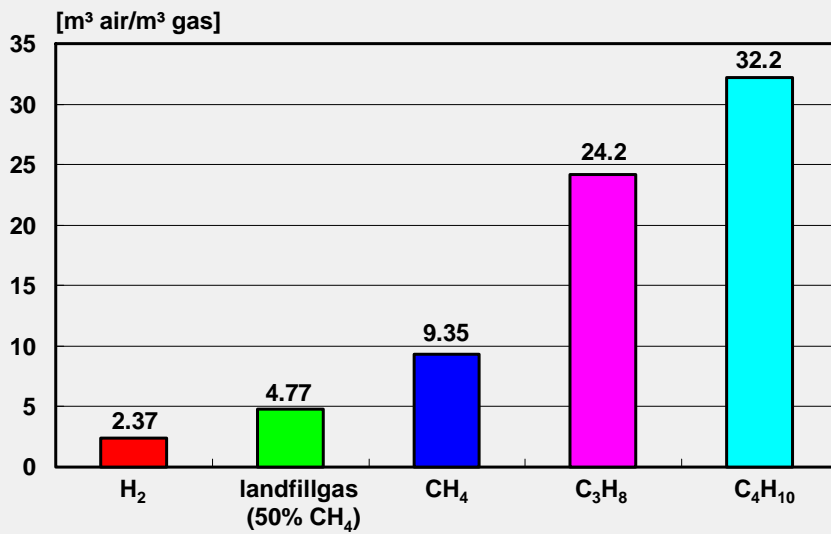


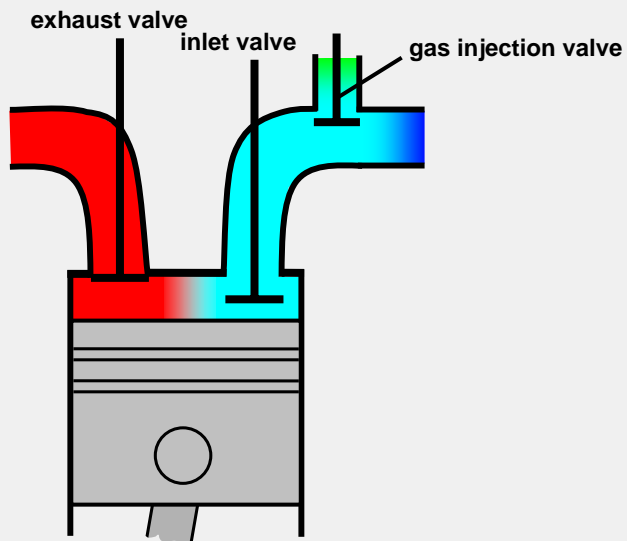
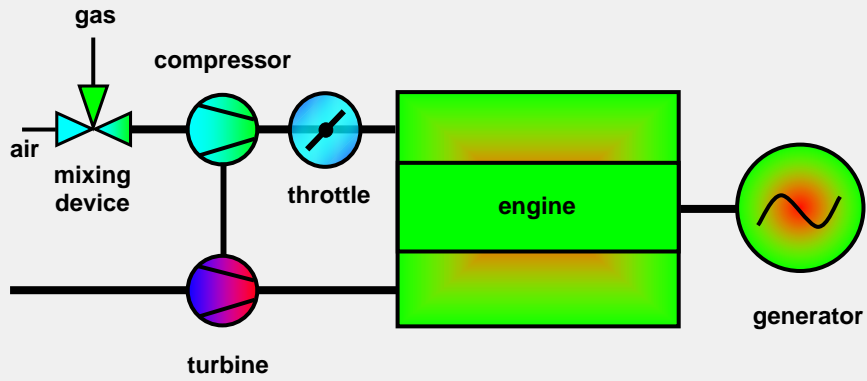
NO_x Generation Different Fuels

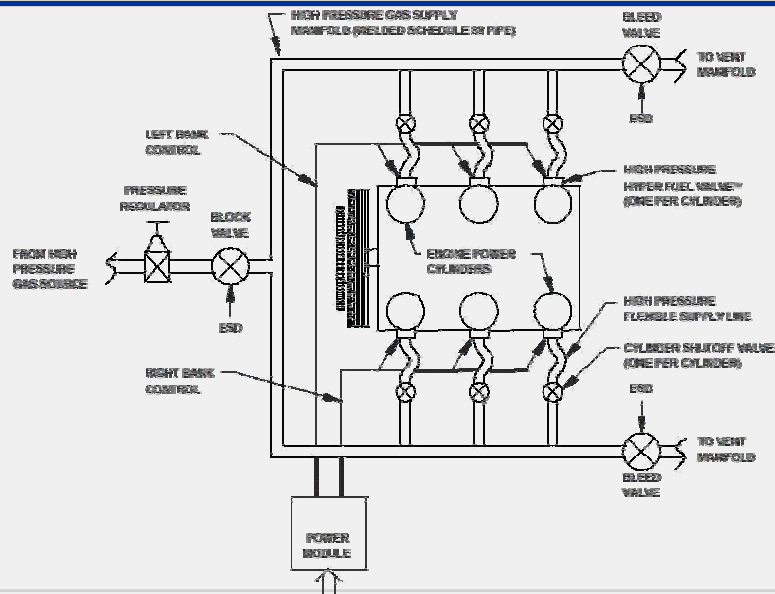
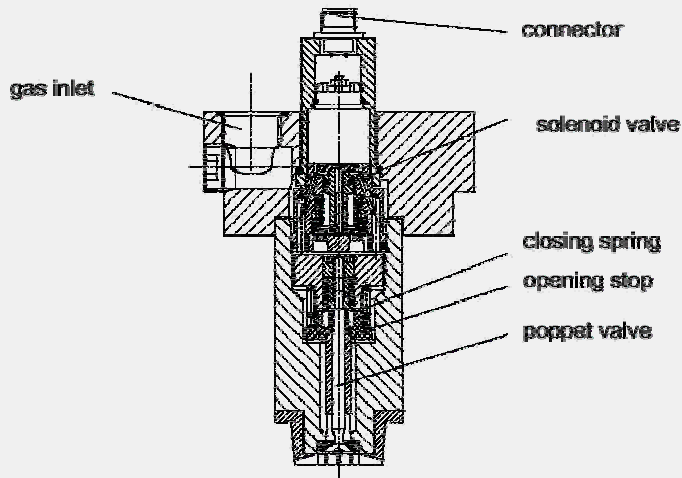




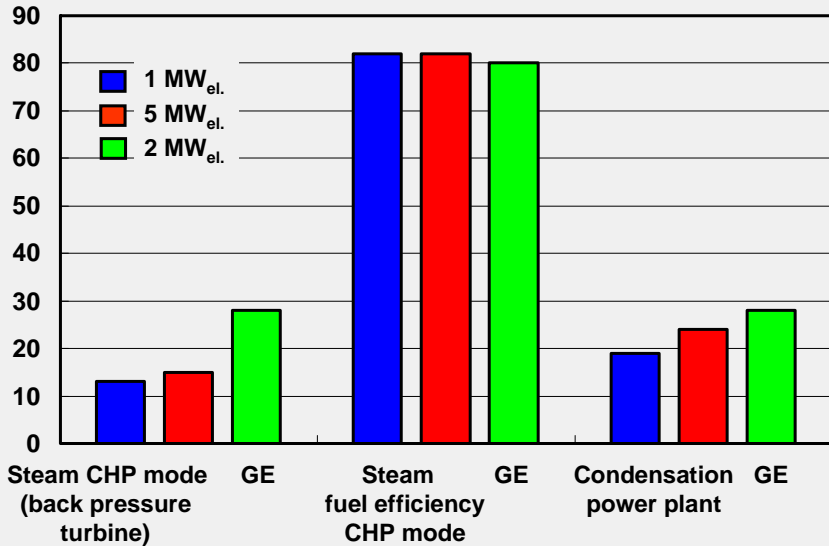






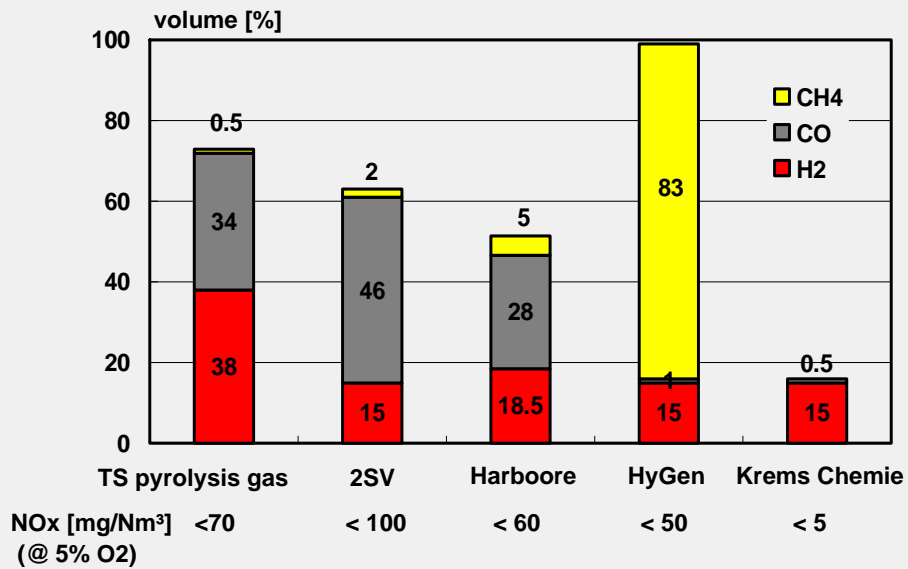


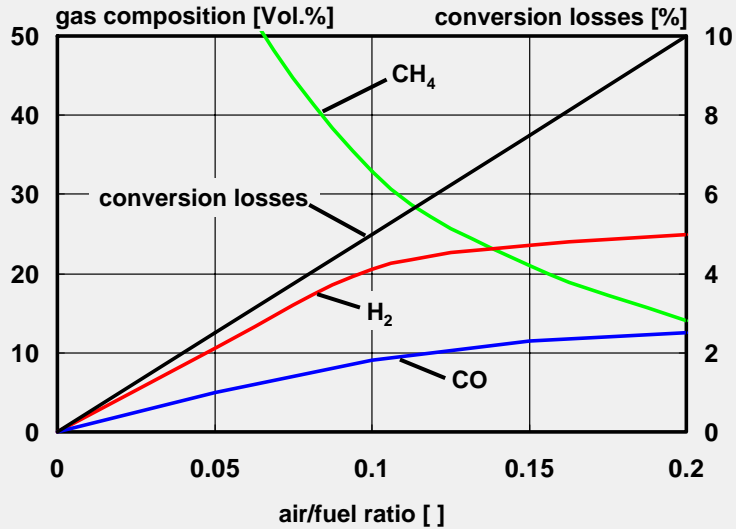
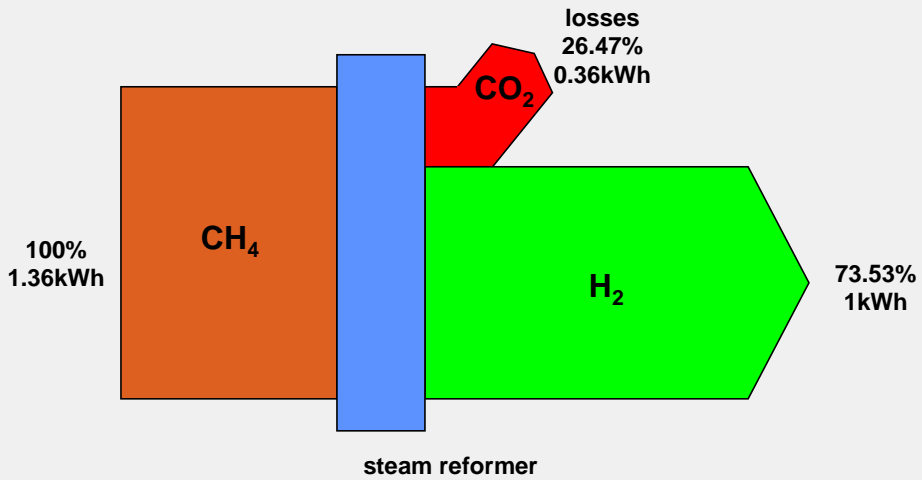
Efficiency Biomass Steam Power Plant/Gasification + Gas Engine



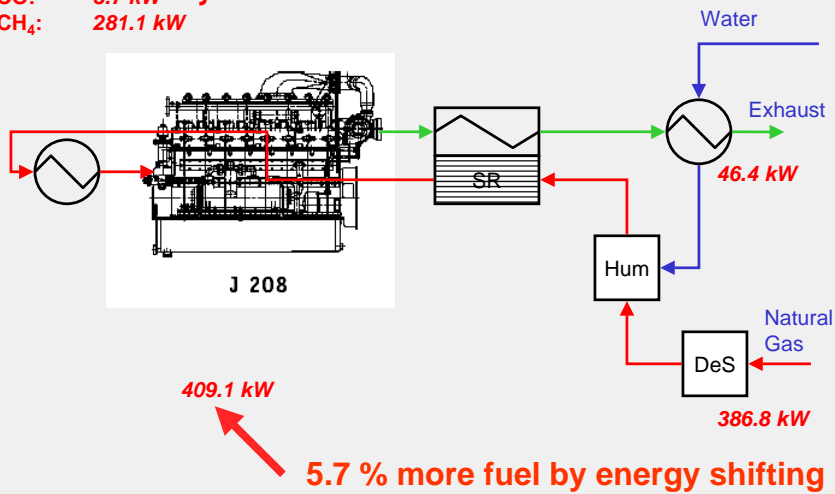
source: Fichtner Studie 4/2002

Different Gas Compositions Possible NOx Levels





H₂: 124.1 kW } 127.8 kW
 CO: 3.7 kW }
 CH₄: 281.1 kW



- Hydrogen and gas mixtures containing hydrogen are an excellent fuel for the gas engine
- With hydrogen gas mixtures it is possible to reduce the NOx emissions close to the zero level (like fuel cells)
- With the use of hydrogen the efficiency is enhanced in the range of 2 % points
- In the future, gas engines can be improved by energy shifting to zero emission levels and up to nearly 3 % better efficiency
- For GE as a technology leader hydrogen is a very important fuel