

# GENERON<sup>®</sup> MEMBRANE TECHNOLOGY

## CO<sub>2</sub> Separation Systems



CO<sub>2</sub> is commonly found in natural gas. In order to meet pipeline specifications or other application specific requirements, the CO<sub>2</sub> has to be removed. In addition, there may also be H<sub>2</sub>S and H<sub>2</sub>O present that needs to be removed. Membranes have been widely used for CO<sub>2</sub> removal applications and come with the added benefit of removing H<sub>2</sub>S and H<sub>2</sub>O as well.

**GENERON**'s CO<sub>2</sub> removal membrane systems offer some of the highest hydrocarbon recoveries achievable (with membranes) due to our high (CO<sub>2</sub> / CH<sub>4</sub>) selectivity membrane. The customized CO<sub>2</sub> removal membrane systems are fabricated at our Houston, Texas facility while the membranes are fabricated at our Pittsburg, California facility. **GENERON** works directly with the client to provide the most efficient and most cost effective solution.

### The GENERON<sup>®</sup> Advantage

- **Extensive Experience** - custom designed skids
- **State-of-the-art Membrane** - high recoveries
- **Simple Solution** - no moving parts, minimal maintenance
- **Remote Operation** - Minimal attention required, fully automated systems
- **Minimal Losses** - low HC losses
- **No Chemicals** - environmentally friendly
- **Small Footprint** - easily meet footprint

### APPLICATIONS:

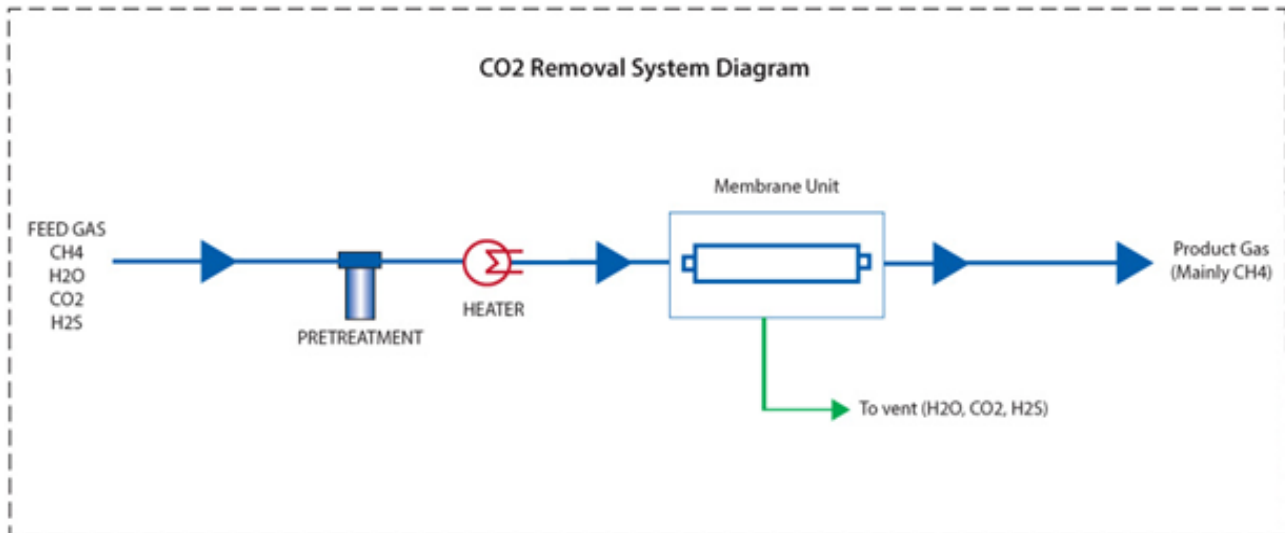
- Pipeline gas applications
- Biogas or digester gas
- Enhanced oil recovery (EOR)
- CO<sub>2</sub> capture from stack / flue gas
- Fuel gas conditioning
- Syngas from steam-reforming of natural or biogas
- Methanol cracking
- H<sub>2</sub>-PSA purge gas
- Methanol Production
- Gasification plants (IGCC)



# Nitrogen Membrane® Systems

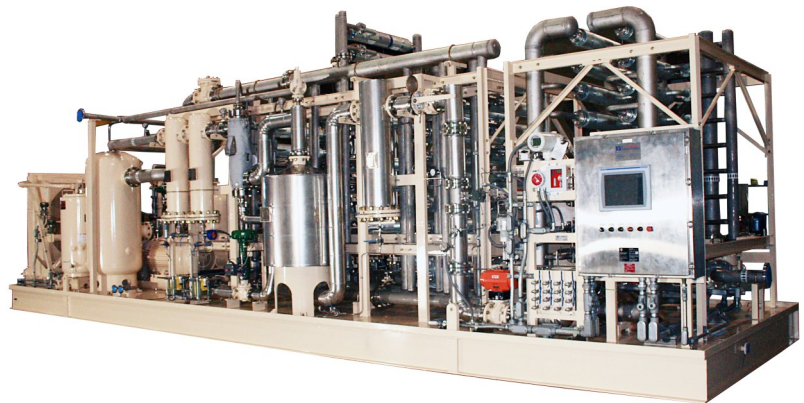
## CO<sub>2</sub> Removal

In a typical **GENERON**® CO<sub>2</sub> removal membrane system, the feed gas is first filtered to remove any entrained liquids and aerosols. The gas then enters the **GENERON**® membrane modules. The CO<sub>2</sub> as well as the H<sub>2</sub>S and H<sub>2</sub>O permeate preferably through the membrane. The non-permeated gas, mainly CH<sub>4</sub>, remains at pressure and is the product gas.



### SYSTEM PERFORMANCE:

- Feed gas pressures up to 1,000 psi (69 bar)
- > 60 vol % CO<sub>2</sub> in feed
- < 2% CO<sub>2</sub> content in product>
- >98% recovery of hydrocarbon gas
- > 90% removal of CO<sub>2</sub>
- Flow rates from 0.01 to 100 MMscfd



### GENERON

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