

GENERON[®] MEMBRANE TECHNOLOGY

CO₂ Separation Systems



CO₂ is commonly found in natural gas. In order to meet pipeline specifications or other application specific requirements, the CO₂ has to be removed. In addition, there may also be H₂S and H₂O present that needs to be removed. Membranes have been widely used for CO₂ removal applications and come with the added benefit of removing H₂S and H₂O as well.

GENERON's CO₂ removal membrane systems offer some of the highest hydrocarbon recoveries achievable (with membranes) due to our high (CO₂ / CH₄) selectivity membrane. The customized CO₂ 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[®] 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:

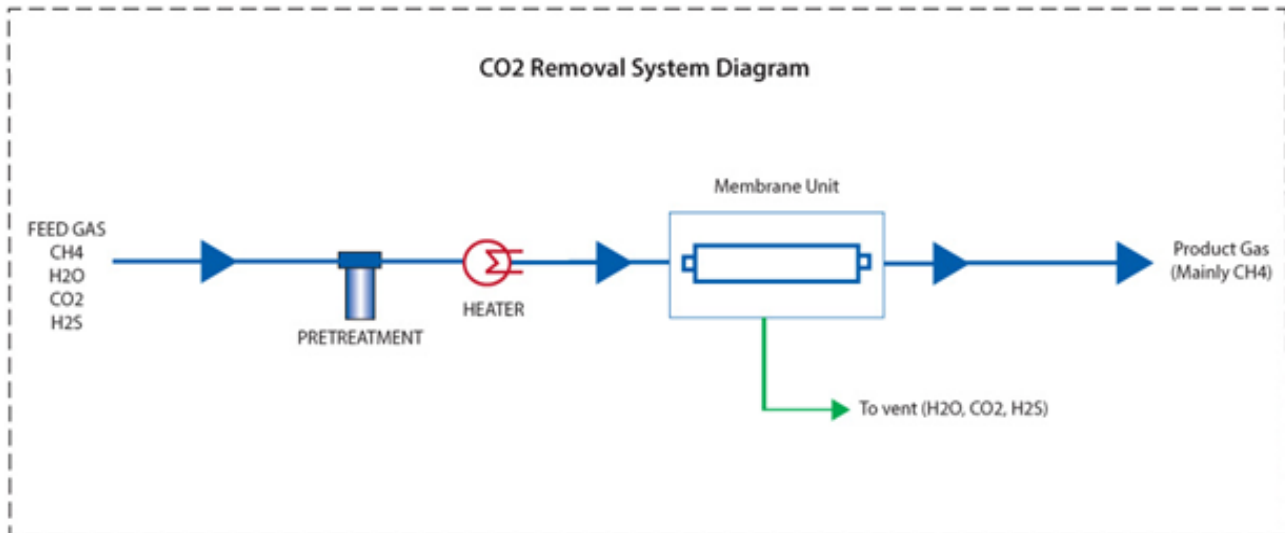
- Pipeline gas applications
- Biogas or digester gas
- Enhanced oil recovery (EOR)
- CO₂ capture from stack / flue gas
- Fuel gas conditioning
- Syngas from steam-reforming of natural or biogas
- Methanol cracking
- H₂-PSA purge gas
- Methanol Production
- Gasification plants (IGCC)



Nitrogen Membrane® Systems

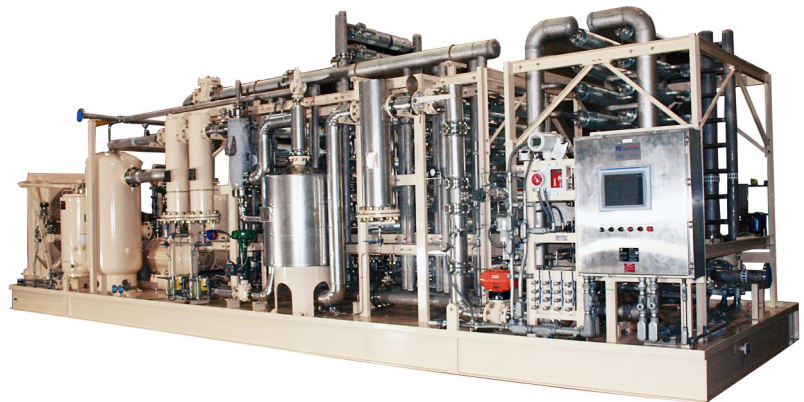
CO₂ Removal

In a typical **GENERON®** CO₂ 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 CO₂ as well as the H₂S and H₂O permeate preferably through the membrane. The non-permeated gas, mainly CH₄, remains at pressure and is the product gas.



SYSTEM PERFORMANCE:

- Feed gas pressures up to 1,000 psi (69 bar)
- > 60 vol % CO₂ in feed
- < 2% CO₂ content in product>
- >98% recovery of hydrocarbon gas
- > 90% removal of CO₂
- Flow rates from 0.01 to 100 MMscfd



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