

# Process Gas CO2 Removal GENERON® Membrane Technology

### **Typical Applications**

- CO2 capture from stack / flue gas
- CO<sub>2</sub> removal from bio gas or digester gas
- Enhanced oil recovery (EOR)
- Fuel gas conditioning
- Syn gas from steam-reforming of natural or bio gas
- Methanol cracking
- H2-PSA purge gas
- Methanol production
- gasification plants (IGCC)
- Amine plant feed gas purification



# The GENERON<sup>®</sup> Advantage

- Skid mounted process units are easy to connect and commission
- Built to your specifications and convenience
- Remote control operation
- Operation flexibility with automated part-load
- Engineering support from concept to completion

CO<sub>2</sub> is found in natural gas from many sources. In order to meet pipeline or application specifications the CO<sub>2</sub> and other contaminants, e.g.H<sub>2</sub>O and H<sub>2</sub>S, must be removed before the methane gas can be used. The GENERON Membrane System is of simple process technology and utilizes patented GENERON<sup>®</sup> Membrane Technology.

Membrane Technology is competing against Amine systems which are used frequently but are complex and have high capital, operating, and installation costs, a relatively high fuel cost and potential environmental issues.



# CO2 Removal GENERON® Membrane Technology

In a typical GENERON<sup>®</sup> membrane system for CO<sub>2</sub> removal the feed gas is filtered to remove particles and liquid condensate. The feed gas is then heated to an optimum operation temperature and ready to enter the GENERON<sup>®</sup> membrane modules. CO<sub>2</sub> gas permeates preferred through the membrane walls. The non-permeated gas remains at pressure and is the high heating value product. The "faster" permeating gases, e.g. CO<sub>2</sub>, H<sub>2</sub>O, H<sub>2</sub>S, are collected in the permeate.



#### Advantages of MEMBRANE Systems:

- no moving parts, and designed for remote unmanned operation
- Efficient packaging minimizes space and weight --- ideal for offshore applications
- · Optimized process design to maximize total hydrocarbon recovery
- CO2 content can be adjusted to desired specifications
- · Easy installation: skidded system can be installed in hours



#### The System Performance:

- Feed gas pressures up to 2,000 psi (138 bar)
- > 60 vol% CO2 in feed
- < 2% CO2 content in product

- > 95% recovery of hydro carbon gas
- > 90% removal of CO<sub>2</sub>
- Flow rates of 10 to 350,000 SCFM

#### GENERON

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