Optimal Liquefaction Cycle
Small-scale LNG plant
Solution for your small scale LNG plant to ensure sound project economics and optimal operation

Small-scale LNG plants applications
- Peak shaving plants
- Satellite LNG plants for gas transport where pipeline is nonexistent
- On-board ship liquefaction
- Coal bed methane recovery
- Bio-gas
- Landfill-gas
- Shale gas liquefaction

Features and benefits
Small and mid-scale liquefaction plants, up to 1 MTPA capacity, (around 10% of base load liquefaction plant) focus upon standardizing compact, preassembled modular designs that can be deployed quickly with minimizing design and construction costs.

GEA bottom-up support and customized approach
- Process design with HYSYS simulator
- GEA oil flooded screw compressors for NG compression & for mixed refrigerant compression
- Only 0.2 ppm of oil carry over due to process expertise and correct oil selection
- Best compressor technology selection in case of higher capacity or different customer’s needs
- Partnership with compact and light weight brazed aluminum heat exchanger manufacturer
- Partnership with pretreatment unit supplier for the complete liquefaction plant
- High reliability/availability/maintainability

Design Objectives
- Process simplicity
- Safety
- Easy operation
- Low cost
- Plant reliability

THE SMALL-SCALE LNG JOURNEY

Gas Reserves → Gas Pretreatment → Small-scale LNG Plant → LNG transport → Fueling vehicles
Industrial users
Residential users

Gas Reserves
Gas Pretreatment
Small-scale LNG Plant
LNG transport
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**GEA Scope of supply**

**LNG Process production diagram: NG liquefaction with Single Mixed Refrigerant**

**GAS TREATMENT Section**
- Dew point control
- CO₂, H₂S Sweetening AGRU (H₂S 4 ppm & CO₂ 50 ppm)
- Dehydration (0.1 ppm)
- Hg Removal (0.01µg/Hm³)

![Diagram of LNG process](image)

**GEA MODULS OF LNG TRAINS**

<table>
<thead>
<tr>
<th>GAS Processing M Nm³/y*</th>
<th>Nominal capacity</th>
<th>Liquefaction line number</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>t/h</td>
<td>t/y</td>
</tr>
<tr>
<td><strong>Centrifugal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GEA LNG 160-2</td>
<td>340</td>
<td>290.000</td>
</tr>
<tr>
<td>GEA LNG 160-1</td>
<td>170</td>
<td>145.000</td>
</tr>
<tr>
<td>GEA LNG 80-2</td>
<td>140</td>
<td>120.000</td>
</tr>
<tr>
<td>GEA LNG 80-1</td>
<td>70</td>
<td>60.000</td>
</tr>
<tr>
<td>GEA LNG 40-2</td>
<td>70 (2x35)</td>
<td>60.000</td>
</tr>
<tr>
<td>GEA LNG 40-1</td>
<td>35</td>
<td>30.000</td>
</tr>
<tr>
<td>GEA LNG 4,5-1</td>
<td>4,5</td>
<td>3.500</td>
</tr>
<tr>
<td><strong>Oil flooded screw</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Based on 8000 h/y*

**Nominal capacity**

- GEA LNG 160-2: 34 t/h, 290.000 t/y
- GEA LNG 160-1: 17 t/h, 145.000 t/y
- GEA LNG 80-2: 14 t/h, 120.000 t/y
- GEA LNG 80-1: 7 t/h, 60.000 t/y
- GEA LNG 40-2: 7 t/h, 60.000 t/y
- GEA LNG 40-1: 3,5 t/h, 30.000 t/y
- GEA LNG 4,5-1: 0,4 t/h, 3.500 t/y

**LNG Storage**

- -170°C, P atm.
- or different storage conditions
We live our values.

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