Hydrocarbon Recovery Unit
A new technology for cryogenic gas terminals
When to apply it: Commissioning of a cryogenic gas tank

During the gassing-up process of a cryogenic gas tank, hydrocarbon vapor is introduced into the tank to displace the nitrogen applied for tank-purging. The target is to build up an oxygen- and nitrogen-free atmosphere to enable subsequent introduction of liquified hydrocarbons (Ethylene, Propylene, etc.).

Product changeover for Gas Carriers, if moored at terminal.
How does it work: The Technology

- The Hydrocarbon Recovery Unit is a portable device that TGE designed for the recovery of hydrocarbons (HC) which become mixed with nitrogen (N₂) during tank commissioning.
- Currently, this N₂-HC-mixture is usually flared.
- Using the Hydrocarbon Recovery Unit, this gas can be reused for the start-up process. For this reason, the hydrocarbons are condensed, collected and reintroduced into the cryogenic plant.
- The Hydrocarbon Recovery Unit can be customized to satisfy your specific requirements.

![Fig. 1: Process and Instrumentation Diagram](image)

How you benefit from the technology: The Advantages

- The Hydrocarbon Recovery Unit is mounted on a skid (standard 20 ft container frame) to allow easy transportation and shipping.
- As Ethylene tank-volumes can reach up to 80,000 m³, the amount of gas recovered is considerable, with associated economic and environmental benefits.
- The reduction in CO₂-emissions improves the overall cost-efficiency of the cryogenic gas plant.
- This technology fits with your company’s sustainability targets.
- The example below highlights the advantages during commissioning of a 50,000 m³ ethylene tank*

<table>
<thead>
<tr>
<th>Use of a Hydrocarbon Recovery Unit during commissioning</th>
<th>No Hydrocarbon Recovery Unit</th>
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</thead>
<tbody>
<tr>
<td>Savings of product</td>
<td>Loss of 1.5 – 2 tank fillings of hydrocarbons during start-up, corresponding to 170 t and 156,000 Euro</td>
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<tr>
<td>Environmental impact</td>
<td>Release of 555 t CO₂ to surrounding area</td>
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<tr>
<td>Cost savings</td>
<td>No savings, loss of high-quality product</td>
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</tbody>
</table>

* Considering a 50,000 m³ Ethylene tank with an average price of 920 Euro/t (2012)
The Hydrocarbon Recovery Unit...

- reduces the carbon footprint of your plant
- allows the recovery of 95% of flare-gas during start-up, maintenance or product changeover
- creates significant cost savings
- is ready to use as an easy plug and play solution

It is developed by TGE, your competent and flexible partner. Right at your service.