Description of the infrastructure

<table>
<thead>
<tr>
<th>Name(s) of the infrastructure(s)*:</th>
<th>TA2.4 HIGH PRESSURE ABSORPTION AND DESORPTION PILOT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location (town, country):</td>
<td>Netherlands</td>
</tr>
<tr>
<td>Website:</td>
<td><a href="http://www.tno.nl">www.tno.nl</a></td>
</tr>
<tr>
<td>Legal name of organisation operating the infrastructure:</td>
<td>TNO</td>
</tr>
<tr>
<td>Location of organisation (town, country):</td>
<td>Delft, Netherlands</td>
</tr>
<tr>
<td>Infrastructure Contact</td>
<td>Peter van Os</td>
</tr>
<tr>
<td>(i.e. name, email of primary contact)</td>
<td><a href="mailto:peter.vanos@tno.nl">peter.vanos@tno.nl</a></td>
</tr>
<tr>
<td>RICC Contact</td>
<td>Annemieke van de Runstraat</td>
</tr>
<tr>
<td>(i.e. name, email of secondary contact)</td>
<td><a href="mailto:annemiekevanderunstraat@tno.nl">annemiekevanderunstraat@tno.nl</a></td>
</tr>
</tbody>
</table>

*Infrastructure(s): means a facility, a resource (or a coherent set of them) together with the related services that are used by the scientific community to conduct research.
**Installation: is a part of an infrastructure that could be used independently from the rest.

Description of the facilities

TA2.4 HIGH PRESSURE ABSORPTION AND DESORPTION PILOT

Purpose and brief technical description, including figures as appropriate

The pilot plant consists of an absorber, a conventional desorber and a membrane gas desorption unit (MGD), which can be operated in continuous cycle mode. The pilot test is skid mounted and can be relocated, due to its compact design. The gas supply setup is flexible and easy to adjust to specific needs. The desorber can be equipped with commercial structured packing material.

With the high pressure absorber and desorber pilot plant it is possible to demonstrate new solvents and their stability at different process conditions. The high pressure absorber and desorber pilot plant is equipped with the latest technologies regarding process monitoring and process measurement. Furthermore, the pilot plant offers good accessibility, user friendly operations and a very user friendly process data collection system.

Gas flow rate: 0-5 Nm³/h; Liquid flow rate: 0-25 kg/h liquid circulation. Pressure up to 50 bar; temperature stripper up to 140°C; temperature range absorber 15-80°C.

State of the Art, uniqueness (if applicable), and any specific advantages (e.g. technical, economic etc)

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Scientific environment (related and potentially available scientific and technical services at RI's location e.g. analysis, material preparation etc.)

A variety of analytical equipment is available to determine gas and liquid composition. Modelling tools are available to perform simulations of the underlying separation principles (thermodynamics, kinetics). Software tools are available to perform process design and development (flow sheeting and scale-up) as well as to perform technical and economic evaluations.
### CCS PROJECTS:

**EU-funded CCS projects:**
- Cesar
- Decarbit
- HiPerCap
- iCAP
- OCTAVIUS

**Other CCS projects:**
- Dutch National Program CATO-2 ‘CO₂ Afvang, Transport en Opslag’ (= CO₂ capture, transport and storage)

**Main/major non-CCS projects:**

### Patents:

### Selected publications:
- METHOD AND APPARATUS FOR SEPARATING MIXED GAS FEED; Broeke, Peter van den; Runstraat, Annemieke van de; Sanchez Fernandez, Eva; Volkov, Alexey; Khotimsky, Valery; Volkov, Vladimir; 11/20/2013, EP2663385 (A1).

### FACILITY AVAILABILITY:

**Unit of access:**
- Week

**Availability per year:**
- Min 4 weeks

**Expected duration of single experiment:**
- 4 weeks

### OPERATIONAL OR OTHER CONSTRAINTS:

**Operational constraints:**
- Gas flow rate: 0-5 Nm³/h; Liquid flow rate: 0-25 kg/h liquid circulation. Pressure up to 50 bar; temperature stripper up to 140°C; temperature range absorber 15-80°C.

**Specific risks:**

**Legal issues:**