

Attachment B

**Technical Manual Storage
dated 01.12.2020**

Introduction

The *Technical Manual Storage* defines key technical data relating to *Storengy's storage products*.

This *Technical Manual Storage* forms part of the "General Terms and Conditions for the Storage of Gas" ("*GTC*") of Storengy Deutschland GmbH ("*Storengy*").

1 Storage Delivery Point and Storage Off-take Point

The *storage delivery points* and *storage off-take points* are, with the exception of the (*partly*-) *virtual storage products*, the transfer points defined in this *Technical Manual Storage* between the *storages* and the *adjacent network operators*.

1.1 Uelsen

The *storage delivery point* and *storage off-take point* is the storage-side welding seam on the last storage-side flange (viewed from the storage) upstream of valve 142 S1.

1.2 Harsefeld

The *storage delivery point* and *storage off-take point* is the welding seam on the last storage-side flange (viewed from the storage) upstream of valve 124 S1.

1.3 Peckensen

The *storage delivery point* and *storage off-take point* for connection pipeline I is the storage-side welding seam on the last insulation piece (viewed from the storage) upstream of valve 302.06.01-2 and for connection pipeline II the storage-side welding seam on the last insulation piece (viewed from the storage) upstream of valve POV 6501.

1.4 Lesum

The *storage delivery point* and *storage off-take point* is the welding seam on the storage-side flange (viewed from the storage) upstream of valve KV 8090.

1.5 Schmidhausen

The *storage delivery point* and *storage off-take point* is the storage-side flange (viewed from the storage) downstream of shut-off valve HOV 0101.

2 Restrictions

Owing to the technical and/or operating conditions of the *storages*, all *storage products* are subject to restrictions. *Storengy* will use its best efforts to overcome these restrictions and allow *nominations* which fall short of the minimum flow requirements or take place during changeover and start-up periods by means of *deferred injection* and/or *deferred withdrawal* as specified in Section 6.4 of the *GTCs*. In the case of (*partly-*) *virtual storage products*, this is accomplished as part of *discretionary use* in accordance with Section 6.4 of the *GTCs*. If this is not possible, *Storengy* reserves the right to reject or reduce the respective *nominations*.

2.1 Minimum injection and withdrawal rates

As the *storages* and their metering devices are designed for large *working gas volumes* and *storage rates*, a *minimum storage rate* is required to use the *storage products*.

The following *minimum storage rates* currently apply:

- Uelsen

(i) Min. injection rate	(ii) Min. withdrawal rate
1,140,000 kWh/h	798,000 kWh/h

Gross calorific value used as a basis for determining the a.m. rates: 11.4 kWh/m³_n

- Harsefeld

(i) Min. injection rate	(ii) Min. withdrawal rate
227,000 kWh/h	261,000 kWh/h

Gross calorific value used as a basis for determining the a.m. rates: 11.35 kWh/m³_n

- Peckensen

(i) Min. injection rate	(ii) Min. withdrawal rate
56,300 kWh/h	56,300 kWh/h

Gross calorific value used as a basis for determining the a.m. rates: 11.26 kWh/m³_n

- Lesum (until 01.04.2021)

(i) Min. injection rate	(ii) Min. withdrawal rate
148,000 kWh/h	197,000 kWh/h

Gross calorific value used as a basis for determining the a.m. rates: 9.85 kWh/m³_n

- Lesum (from 01.04.2021)

(i) Min. injection rate	(ii) Min. withdrawal rate
171,200 kWh/h	228,200 kWh/h

Gross calorific value used as a basis for determining the a.m. rates: 11.41 kWh/m³_n

- Schmidhausen

(i) Min. injection rate	(ii) Min. withdrawal rate
113,200 kWh/h	113,200 kWh/h

Gross calorific value used as a basis for determining the a.m. rates: 11.32 kWh/m³_n

2.2 Changeover and start-up periods of storage

Due to technical requirements, switching between *storage* operating modes from injection operation to withdrawal operation and vice versa and/or from stand-by mode to full load operation, as the case may be, are subject to changeover and start-up periods.

The following changeover and start-up periods apply:

- **Uelsen**

Operating condition	Withdrawal route warm to full-load withdrawal	Injection operation up to available withdrawal rate	Readiness for injection up to full-load injection	Withdrawal operation up to available injection
Start-up times until full load achieved	4 h	5 h	3 h	4 h

- **Harsefeld**

Operating condition	Withdrawal route warm to full-load withdrawal	Injection operation up to available withdrawal rate	Readiness for injection up to full-load injection	Withdrawal operation up to available injection
Start-up times until full load achieved	0.5 h	0.75 h	0.5 h	0.75 h

- **Peckensen**

Operating condition	Withdrawal route warm to full-load withdrawal	Injection operation up to available withdrawal rate	Readiness for injection up to full-load injection	Withdrawal operation up to available injection
Start-up times until full load achieved	1.0 h	1.5 h	0.75 h	1.5 h

- **Lesum**

Operating condition	Withdrawal route warm to full-load withdrawal	Injection operation up to available withdrawal rate	Readiness for injection up to full-load injection	Withdrawal operation up to available injection
Start-up times until full load achieved	0.5 h	0.75 h	0.75 h	1.5 h

- **Schmidhausen**

Operating condition	Withdrawal route warm to full-load withdrawal	Injection operation up to available withdrawal rate	Readiness for injection up to full-load injection	Withdrawal operation up to available injection
Start-up times until full load achieved	0.5 h	1 h	1 h	2 h

3 Availability

3.1 Uelsen

Due to planned maintenance and/or measures for expansion and modification, *Storengy* may restrict or interrupt the *storage rate* only temporarily and for a maximum of 336 hours per *injection period* (1 April to 1 October) or *withdrawal period* (1 October to 1 April). In addition Section 9.1 of the *GTCs* shall remain unaffected.

In addition to the aforementioned authorisation, the following conditions shall apply for the Uelsen *storage*:

- 3.4.1 *Storengy* is entitled to reduce the *withdrawal rate* available in accordance with the *withdrawal curve* by up to 50% of the contractually agreed *withdrawal rate* during the *injection period*.
- 3.4.1 *Storengy* is entitled to reduce the *injection rate* available in accordance with the *injection curve* by up to 50% of the contractually agreed *injection rate* during the *withdrawal period*.

3.2 Harsefeld

Storengy is entitled to temporarily restrict or interrupt the *storage rate* due to planned maintenance work and/or measures for expansion and maintenance for a maximum of 336 hours per *storage year*. In addition Section 9.1 of the *GTCs* shall remain unaffected.

3.3 Peckensen

Storengy is entitled to temporarily restrict or interrupt the *storage rate* due to planned maintenance work and/or measures for expansion and maintenance for a maximum of 720 hours per *storage year*. In addition Section 9.1 of the *GTCs* shall remain unaffected.

3.4 Lesum

Storengy is entitled to temporarily restrict or interrupt the *storage rate* due to planned maintenance work and/or measures for expansion and maintenance for a maximum of 336 hours per *storage year*. In addition Section 9.1 of the *GTCs* shall remain unaffected.

In addition to the aforementioned authorisation, the following conditions shall apply for the Lesum *storage*:

- 3.4.1 *Storengy* is entitled to reduce the *injection rate* available in accordance with the *injection curve* by up to 50% of the contractually agreed *injection rate* two times for up to 120 hours each during the *withdrawal period*.

3.5 Schmidhausen

Storengy is entitled to temporarily restrict or interrupt the *storage rate* due to planned maintenance work and/or measures for expansion and maintenance for a maximum of 480 hours per *storage year*. In addition Section 9.1 of the *GTCs* shall remain unaffected.

4 Storage conditions

If required to meet or implement requirements under mining law or concerning technical reservoir specifications necessary to secure technical safety or the long-term technical performance of a *storage*, *Storengy* has the right to impose specific use of the *storage products* upon *storage customers* which may also include obligations for the *nomination* of quantities of *gas* for the injection or withdrawal of quantities of *gas*. In particular, this can be of relevance for securing long-term technical performance if levels in terms of *working gas* in the Uelsen or Schmidhausen *storages* remain continuously very high over a longer period of time or if levels in terms of *working gas* in these *storages* or in the Harsefeld, Lesum and Peckensen *storages* remain continuously very low for too long a period of time or if in the Uelsen or Schmidhausen *storages* no injection or withdrawal of *gas* leading to a lasting increase or reduction of levels in terms of *working gas* in these *storages* for too long a period.

If required, *Storengy* will publish operating instructions in this respect including specific obligations for use of the *storage products* for the *storages* and *storage customers* concerned; Section VI. of the *Operating Manual Storage* shall apply accordingly.