

Storage Specification Rehden Underground Storage Facility

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Article 1 Introduction

1. The **Storage Specification** for the Rehden **Storage Facility** defines all the details required to enable **astora** to provide **Storage Services** at the Rehden **Storage Facility**.
2. The definitions for the storage of **Gas** contained in the **General Terms and Conditions for Storage Access** shall apply. Terms used in the singular also include the plural and vice versa, assuming this has not been expressly agreed otherwise or is obvious from the respective situation.
3. Upon the conclusion of a **Storage Services Agreement** the **Storage Specification** of the **Storage Location** on which the **Storage Services Agreement** is based shall form an integral part of the **Storage Services Agreement**.

Article 2 Storage Services

Article 2.1 astora-pack

1. The **astora-pack Storage Service** shall be a **Bundled Storage Service** with a minimum term of one (1) **Year**. In case **astora-pack** is only available for a period within a **Storage Year** less than the aforementioned term, **astora** shall be entitled to deviate from this minimum term.
2. At Rehden **astora-pack** shall comprise the following **Storage Capacities**:
 - a) **Injection rate**: 6.50 kWh/h and
 - b) **Withdrawal rate**: 10.00 kWh/h and
 - c) **Working gas volume**: 17,500.00 kWh
3. The minimum quantity of **astora-pack** shall be 500 bundles. In case **astora-pack** is only available for a quantity less than the aforementioned quantity, **astora** shall be entitled to deviate from this minimum quantity.
4. The availability of **astora-pack** shall be subject to the limitations of the applicable **Injection** and **Withdrawal Curves** according to Article 13.

Article 2.2 astora-add

1. The **astora-add Storage Service** shall be an **Unbundled Storage Service** with a minimum term of one (1) **Storage Day** which **Storage Customers** can contract in addition to **astora-pack**.
2. For the Rehden **Storage Location** the following **Storage Capacities** of **astora-add** have been offered in Phase II:
 - a) **Injection rate:** 390,000 kWh/h and
 - b) **Withdrawal rate:** 600,000 kWh/h and
 - c) **Working gas volume:** 8,680,000,000 kWhThese **Storage Capacities** can be booked independently of each other and in any combination.
3. The availability of **astora-add** shall be subject to the limitations of the applicable **Injection** and **Withdrawal Curves** according to Article 13.

Article 2.3 astora-part

1. The short-term and **Interruptible Storage Service astora-part** shall be a **Bundled Storage Service** with a minimum term of one (1) **Month** and a maximum term of two (2) **Years**. The service can be interrupted according to Section 5.
2. At Haidach **astora-part** shall comprise the following **Storage Capacities:**
 - a) **Injection rate:** 10.00 kWh/h and
 - b) **Withdrawal rate:** 10.00 kWh/h and
 - c) **Working gas volume:** 3,000.00 kWh
3. **astora-part** will not be offered between September 15th and November 15th.
4. The minimum quantity of **astora-part** shall be 100 bundles. In case **astora-part** is only available for a quantity less than the aforementioned quantity, **astora** shall be entitled to deviate from this minimum quantity.
5. For the **astora-part Storage Service astora** may interrupt the **Injection** and/or **Withdrawal Rate** of the **Storage Customer** completely or partially during the interruptible periods with at least four (4) **Hours** notice.
6. In case of interruption the **Storage Customer** shall be refunded the **Storage Services Fee** for the interrupted usage time on a pro rata basis; however, the refund shall be limited to 50% of the **Storage Services Fee**. This may be offset against the monthly payments.
7. The limitation of the **Injection** and/or **Withdrawal Curve** according to Article 13 shall not apply.

Article 3 Storage Services Fee

1. The **Storage Customer** shall be obligated to pay the respective **Storage Services Fee** for the **Storage Capacities** made available by **astora**. The claim to payment of this **Storage Services Fee** shall arise at the start of the **First Utilisation Day** of the respective **Storage Services Agreement**.
2. The **Storage Tariff** that applies to the **Storage Services Fee** shall be calculated on the basis of the **Basic Storage Tariff** according to 4 and the provisions defined in Article 5.
3. To determine the **Storage Services Fee** the number of contracted **Storage Services** shall be multiplied by the **Storage Tariff** according to Section 2 and a grand total of all **Storage Services** is formed.
4. In case **Short-term-** or **Long-term Factors** should apply, the **Storage Services Fee** calculated according to Section 3 shall be multiplied by the respective factors according to Article 6 and Article 7.
5. For **Storage Periods** less than one (1) **Year** the annual **Storage Services Fee** calculated according to Section 3 and Section 4 shall be divided by twelve (12) in order to calculate the **Storage Services Fee** per **Month**. In order to calculate the **Storage Services Fee** per **Storage Day** the **Storage Services Fee** per **Month** according to sentence 1 shall be divided by thirty (30).
6. In case seasonality factors according to Article 8 should apply, the **Storage Services Fee** calculated according to Section 5 shall be multiplied by the respective factors.

Article 4 Basic Storage Tariff

1. The **Basic Storage Tariff** for **astora-pack** according to Article 2.1 shall be:
€106.85 per **Year** per bundle.
2. The **Basic Storage Tariff** for **astora-add** according to Article 2.2 shall be:
 - a) **Injection Rate:** € 5.17 per kWh/h/a
 - b) **Withdrawal Rate:** € 7.70 per kWh/h/a
 - c) **Working Gas Volume:** 0.05 ct/kWh/a
3. The **Basic Storage Tariff** for **astora-part** according to Article 2.3 shall be: € 97.63 per **Year** per bundle.
The **Storage Tariff** shall be determined according to Article 7.
4. All the prices listed here are net prices; any statutory turnover tax that is due shall be charged separately at the applicable tax rate.

Article 5 Adjusting the Storage Tariff

1. Based on the **Basic Storage Tariff** according to 4 the **Storage Tariff** that applies to billing and payment shall be adjusted on April 1 every year - the first time on April 1, 2009 - according to the following formula:

$$E = E_0 \times \left(0.70 + 0.15 \times \frac{I}{I_0} + 0.15 \times \frac{L}{L_0} \right)$$

In this formula the terms mean:

E = **Storage Tariff** in €/year or €/month.

E₀ = **Basic Storage Tariff** as per 4.

I = Average annual value of the Capital Goods Price Index in the calendar year preceding the adjustment date.

The Capital Goods Price Index is published in Series 17 of the German Federal Statistical Office; Prices; Series 2; – Index der Erzeugerpreise gewerblicher Produkte (Inlandsabsatz) (Producer Price Index (domestic sales)).

I₀ = 102.4 points = Value of Index (2005 = 100) in base year 2009.

L = Average annual value of the Contractual Wage Index in the Energy Industry in the calendar year preceding the adjustment date.

The Contractual Wage Index for the Energy Industry (together) is published in Series 16 of the German Federal Statistical Office; Series 4.3; Index der tariflichen Stundenverdienste im produzierenden Gewerbe und im Dienstleistungsbereich; Basis 2005 = 100; Früheres Bundesgebiet; WZ 35 (Contractual wage index in industry and service business, former federal territory).

L₀ = 111.6 points = Value of Index (2005 = 100) in base year 2009.

2. In case any of the quotations or indices mentioned under Section 1 will not be published anymore or in an altered way being incomparable to the way in which they have been published before, **astora** shall - from the time, when the publication in the original way was suspended - be entitled to determine quotations or indices reflecting the economic keynote of the rule for adjusting the **Storage Tariff** as precisely as possible.

Article 6 Long-term Factors

In Rehden in the event of long-term booking of **Storage Capacities** in the form of the offered **Storage Services astora-pack** and **astora-add** as per Article 2, the following **Long-term Factors** shall apply:

contract duration	factor
≥ 24 months	0.9850
≥ 36 months	0.9700
≥ 48 months	0.9550
≥ 60 months	0.9400
≥ 72 months	0.9250

Article 7 Short-term Factors

For booking the **astora-add** or **astora-part Storage Services** in the Rehden **Storage Location** with duration of less than one **Year** the following **Short-term Factors** shall apply:

contract duration	factor
≥ 6 months	1.050
≥ 3 months	1.100
≥ 1 storage day	1.200

Article 8 Seasonality Factors

For booking the **astora-add Storage Service** with duration of less than one **Year** the following seasonality factors shall apply for certain **months** depending on the type of single service:

- a) **Injection Rate** from April to September: 1.1000
- b) **Withdrawal Rate** from October to March: 1.2000
- c) **Working Gas Volume** from July to December: 2.0000

Article 9 Fee for Exceeding the Storage Capacities

1. The **Fee for Exceeding the Storage Capacities** will be calculated daily by using the **Tariff for Exceeding the Storage Capacities** according to the following Article 10 on the basis of the maximum hourly volume which exceeds 100% of the **Storage Capacities** per **Storage Day**.

2. In the case that the **Storage Customer's Storage Level** is less than zero (0), **astora** shall be entitled but not be obliged to buy and to inject **Natural Gas** which is needed for balancing the **Storage Customer's Storage Account**. The **Storage Customer** shall be obliged to pay 150% of the purchase price as well as all the related costs.

Article 10 Tariff for Exceeding the Storage Capacities

1. The **Tariff for Exceeding the Storage Capacities** shall be:
 - a) **Injection rate:** 2.8 ct/(kWh/h)/d
 - b) **Withdrawal rate:** 4.2 ct/(kWh/h)/d
 - c) **Working Gas Volume:** 1.4 ct/MWh/d
2. All the prices listed here are net prices; any statutory turnover tax that is due shall be charged separately at the applicable tax rate.

Article 11 Rounding procedure

To round the calculations of this **Storage Specification** up or down the intermediate calculations shall be rounded up or down to four (4) decimal places and the final results to two (2) decimal places. If the fifth (5th) or third (3rd) decimal place respectively should be five (5) or more, the sum shall be rounded up, if it is less than five (5), it shall be rounded down.

Article 12 Technical Limitations

1. All **Storage Capacities** of the **Storage Services** described in Article 2 shall be subject to the technical limitations listed in Sections 2 to 4 which the **Storage Customer** is informed of according to the **General Terms and Conditions for Storage Access** via the **Nomination Procedure** that is regulated in the **Operating Agreement**.
2. For the operation of the Rehden **Storage Facility** the following minimum rates shall be required for injection and withdrawal:

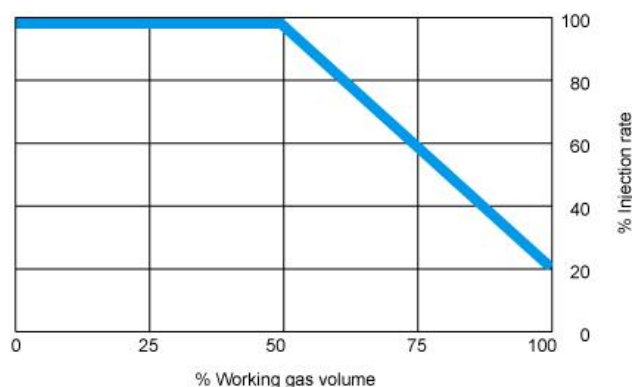
Injection:	120,000 to 300,000 m ³ /h
Withdrawal:	80,000 m ³ /h
3. The physical possibility of injection cannot be assured in the time between November 1 and April 1.
4. In the operation of the Rehden **Storage Facility** the following times have to be considered:

Lead time for injection:	up to 1.0 h
Lead time for withdrawal:	up to 6.0 h
Flow reversal time injection/withdrawal:	up to 4.0 h

5. In the Rehden **Storage Location** the time required to process a **Renomination** shall be four (4) hours.

Article 13 Injection and Withdrawal Curves

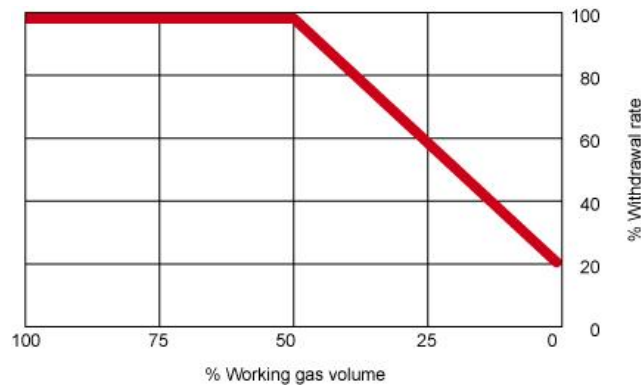
1. The usage of the **Storage Services** as per Article 2.1 and Article 2.2 is limited by the **Injection and Withdrawal Curves**.
2. The **Injection and Withdrawal Curves** of the Rehden **Storage Facility** assumed shall apply herein in combination with the **Storage Services** as per Article 2.1 and Article 2.2 also for the corresponding **Storage Services Agreements**.
3. If a percentage of the stored **Working Gas Volume** as per Sections 4 and 5 should be reached, **astora** may lower the **Injection** or **Withdrawal Rate** to the percentage specified according to Sections 4 and 5.
4. The **Injection Curve** shows the **Injection Rates** as a function of the **Storage Customer's Working Gas Volume** which it shall be entitled to use.



The available **Injection Rates** of the **Storage Customer** (IR) in case a Customer's **Storage Level** of **Working Gas Volume** (WGV) exceeds 50% shall be calculated as follows:

$$IR [\%] = WGV [\%] \times (-1.6) + 180$$

- The **Withdrawal Curve** shows the **Withdrawal Rates** as a function of the **Storage Customer's Working Gas Volume** which it shall be entitled to use.



The available **Withdrawal Rates** of the **Storage Customer** (WR) in case a **Customer's Storage Level of Working Gas Volume** (WGV) falls below 50% shall be calculated as follows:

$$\underline{WR [\%] = WGV [\%] \times (1.6) + 20}$$

Article 14 Delivery Points

- The **Point of Injection** shall be the entry point of the Rehden **Storage Location**, which corresponds to the point at which the **Storage Location** is connected to the **Neighbouring Natural Gas Network** (network interconnection point: 3070 Sp. Rehden). The **Neighbouring Natural Gas Network** of the Rehden **Storage Location** is the gas network operated by GASCADE Gastransport GmbH, Kassel.
- The **Point of Withdrawal** shall be the exit point of the Rehden **Storage Location**, which corresponds to the point at which the **Storage Location** is connected to the **Neighbouring Natural Gas Network** (network interconnection point: 3070 Sp. Rehden). The **Neighbouring Natural Gas Network** of the Rehden **Storage Location** is the gas network operated by GASCADE Gastransport GmbH, Kassel.
- The **Allocation Procedure** in Rehden shall be declaratory.

Article 15 Gas Quality Specifications

For the Rehden **Storage Facility** the following quality parameters shall apply at the **Delivery Points** listed in Article 14:

Gross calorific value min.*	kWh / m ³	10.97
Gross calorific value max.*	kWh / m ³	11.61
Wobbe index min.*	kWh / m ³	14.14
Wobbe index max.*	kWh / m ³	15.00
Hydrocarbon dew point	°C	-2 °C @ 1 - 70 bar (a)
Water dew point	°C	-10 °C @ 70 bar (a)
Max. oxygen	ppm	10
Max. carbon dioxide	mol-%	2
Max. hydrogen sulfide	mg (S) /m ³	5 (incl. COS)
Max. mercaptanes	mg (S) /m ³	6
Max. total sulfur	mg (S) /m ³	22.4
Max aromatics	ppm	223

*) The technical combustion parameters relate to a reference temperature of 298.15 K for the combustion of **Standard Volumes** with the reference conditions of 1.01325 bar and 273.15 K.

Article 16 Changes in the Storage Specification

1. **astora** may change the **Storage Specification** – except for Article 3, 4 and Article 5 - at any time. Deviating from Sentence 1 **astora** shall be entitled to change Article 3, Article 4 and Article 5 at any time as far as these changes are economically neutral updates or amendments without any impact on existing **Storage Services**.
2. With regard to changes in the **Storage Specification** Article 44 of the **General Terms and Conditions for Storage Access** shall apply accordingly.