

Storage Specification Jemgum 01.03.2016

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(hereinafter referred to as "**astora**")

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Article 1 Introduction

1. This **Storage Specification** completes the **Storage Services Agreement Jemgum 01.03.2016** and defines all the details required to enable **astora** to provide **Storage Services** in the Jemgum **Storage Location** based on the **Storage Services Agreement** which will be concluded with regards to the Keyed Procedure held by **astora** on the trading platform store-x on 01.03.2016.
2. For storage of **Gas** the **General Terms and Conditions for Storage Access**, the definitions for the storage of **Gas** contained in the **General Terms and Conditions for Storage Access** and § 6 of the **Storage Services Agreement Jemgum 01.03.2016** shall apply, unless this storage specification contains different arrangements. The 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 the **Storage Services Agreement** this **Storage Specification** shall be an integral part of the **Storage Services Agreement**. For this product the **General Terms and Conditions for Storage Access** shall apply with the exclusion of Part four, Part five, Part six and § 21.

Article 2 Storage Services

1. The **storage service** will be offered as **Bundled Storage Service**. The offer within the **Terms and Conditions for the Keyed Procedure Jemgum 01.03.2016** includes one (1) bundle. The **Storage Service** has a term from 01.04.2016 (06:00 a.m.) to 01.04.2017 (06:00 a.m.).
2. The one (1) bundle shall comprise the following **Storage Capacities**:

a) **Working Gas Volume**

01.04.2016 (6:00 a.m.) until 01.04.2017 (6:00 a.m.):

746,640,000 kWh

b) Injection on firm and flat basis

01.04.2016 (6:00 a.m.) until 01.10.2016 (6:00 a.m.):

170,000 kWh/h

Storage Customer is obliged to first fill the total **Working Gas Volumes** by delivering **astora** the above mentioned rate within the above mentioned period in each hour at the **Delivery Point**

described in Article 10 Section 4. **astora** takes over the gas for injection from **Storage Customer** and delivers it back to **Storage Customer** at the same time in Jemgum **Storage Location** via credit note on his discounted account GASPOOL as defined under § 1 Section 1a of the **BEATE-Supplement Agreement for Storage Customers**.

astora points out that the **Storage Customer** could use the injected **Working Gas Volumes** not before 01.10.2016 earliest at 01.11.2016 by using the capacities as defined under § 2 Section 2c and d.

c) Firm **Withdrawal Capacity**

01.11.2016 (6:00 a.m.) until 01.04.2017 (6:00 a.m.)

Max. 1,100,000 kWh/h

The firm **Withdrawal Capacity** is available for **Storage Customer** at the **Delivery Points** as defined in Article 10 Section 2 and 3. In case that **Storage Customer** will use both **Delivery Points** within one hour, across both **Delivery Points** the allocated **Withdrawal Gas** may not exceed the max. firm **Withdrawal Capacity**.

d) Firm **Injection Capacity**

01.11.2016 (6:00 a.m.) until 01.04.2017 (6:00 a.m.)

Max. 700,000 kWh/h

The firm **Injection Capacity** is available for **Storage Customer** at the **Delivery Points** as defined in Article 10 Section 2 and 3. In case that **Storage Customer** will use both **Delivery Points** within one hour, across both **Delivery Points** the allocated **Injection Gas** may not exceed the max. firm **Injection Capacity**.

e) Transfer of transport capacities (Entry into transport system)

Differing from the possibility to use the **Withdrawal Capacity** starting 01.11.2016 **astora** will transfer interruptible and discounted entry capacities free of charge to **Storage Customer** at the **Delivery Point** as defined under § 10 Section 2 as follows:

01.12.2016 (6:00 a.m.) until 01.04.2017 (6:00 a.m.)

600,000 kWh/h

The transfer of rights will be effected as defined in the **AGREEMENT FOR Transfer of Use of CAPACITY RIGHTS**.

Article 3 Storage Services Fee

1. Variable **Storage Service Fee**

For the **Injection Gas** which will be injected by the **Storage Customer** within the period 01.11.2016 (6:00 a.m.) until 01.04.2017 (6:00 a.m.), the **Storage Customer** has to pay a variable **Storage Service Fee** of 0.05 ct/kWh. The invoicing will occur as defined under § 33 Section 2 until 6 of the **General Terms and Conditions for Storage Access**.

2. Firm **Storage Service Fee**

The firm **Storage Service Fee** shall be determined by the offer within the Keyed Procedure. The **Storage Customer** shall be obliged to pay the firm **Storage Service Fee** for the **Storage Capacities** made available by **astora** independent of the use. The claim for payment of this firm **Storage Services Fee** shall arise at 01.04.2016. The invoicing will occur as defined under § 33 Section 1 until 6 of the **General Terms and Conditions for Storage Access**.

Article 4 Fee for Exceeding the Storage Capacities

The **Fee for Exceeding the Storage Capacities** will be calculated daily by using the maximum hourly **Tariff for Exceeding the Storage Capacities** per **Storage Day** which exceeds 100% of the **Storage Capacities** per **Storage Day**.

The **Tariff for Exceeding the Storage Capacities** shall be:

- a) **Injection rate:** 2.2 ct/(kWh/h)/d
- b) **Withdrawal rate:** 2.8 ct/(kWh/h)/d

Article 5 Shortfall of injection on firm and flat basis

In case that **Storage Customer** could not fulfil his obligations to deliver the hourly volume as defined in Article 2 Section 2b, he is obliged to reimburse **astora** for charges. The calculation of charges is based on the invoices for balancing charges of the operator of the market area GASPOOL "GASPOOL Balancing Service GmbH (GASPOOL)" to **astora** plus 20 %. These volumes will be covered as injected as defined in § 2 Section 2b.

Article 8 and Article 10 Section 4 of this **Storage Specification** will be the basis for the accounting of the shortfall of injection on firm and flat basis.

Article 6 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 7 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 and 3 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 Jemgum 01.03.2016**.
2. For the operation of the Jemgum **Storage Facility** the following minimum volume flows for withdrawal and injection are necessary:

Sum over both **Delivery Points** 550,000 kWh/h, but not less than 220,000 kWh/h at each of the **Delivery Points**.
3. In the Jemgum **Storage Location** the time required to process a **Renomination** shall be three (3) hours. **astora** pointed out that for the transfer of gas between storage accounts the regulations of § 2 of **BEATE-Supplement Agreement for Storage Customers** shall apply.

Article 8 Specific rules for Nomination Procedure

In addition to Article 5 of the **Operating Agreement Jemgum 01.03.2016 Nominations** from **Storage Customer** to **astora** are not necessary for the period of injection on firm and flat basis as defined in Article 2 Section 2b. **astora** will use the hourly value as defined in Article 2 Section 2b as **Nomination** for the matching process with GASPOOL.

Article 9 Injection and Withdrawal Curves

The **Storage Customer** has not to consider any restrictions.

Article 10 Delivery Points

1. The **Points of Withdrawal** shall correspond to the points at which the **Storage Location** is connected to the **Neighbouring Natural Gas Networks**. The **Neighbouring Natural Gas Networks** of the Jemgum **Storage Location** are the natural gas networks operated by GASCADE Gastransport GmbH, Kassel (D) ("GASCADE") and Gas Transport Services B. V., Groningen (NL) (GTS).

2. **Delivery Point** to GASCADE is defined as: „Jemgum I“; Netzkpunkt-ID: 1BMA.

The **Allocation Procedure** shall be declaratory.

3. **Delivery Point** to GTS is defined as: „Oude Statenzijl (astora Jemgum)“; Netzkpunkt-ID: 301391.

The **Allocation Procedure** shall be declaratory.

4. **Delivery Point** for injection on firm and flat basis as defined under Article 2 Section 2b is the virtual trading point of the market area GASPOOL (“VP GASPOOL”). **astora** takes over the gas for injection from **Storage Customer** and delivers it back to **Storage Customer** at the same time in Jemgum **Storage Location** via credit note on his discounted account GASPOOL. At no time **astora** will gain the ownership of the gas which is delivered from **Storage Customer** at the VP GASPOOL. **astora** will only ensure that the ownership of the delivered volumes at VP GASPOOL, which are credit on the discounted account GASPOOL of **Storage Customer** at the same time, will pass over to the trader who is in the position to swap the gas to Jemgum via reduction of **Working Gas Volumes** on his account.

The **Allocation Procedure** shall be allocated as nominated.

Article 11 Gas Quality Specifications

For the Jemgum **Storage Facility** the following quality parameters shall apply at the **Delivery Points** listed under Article 10 Section 2 and 3. If necessary, the quality parameters will be adjusted in order to comply with the provisions of Network Interconnection Agreements concluded by **astora** with the **Neighbouring Network Operators**.

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	5
Max. carbon dioxide	mol-%	2
Max. hydrogen sulphide	mg (S) /m ³	5 (incl. COS)
Max. mercaptanes	mg (S) /m ³	6
Max. total sulphur	mg (S) /m ³	20

*) 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.