

ATTACHMENT D1 – Operating Procedures

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1. INTRODUCTION

1.1. INTERPRETATION OF THE ATTACHMENT D1

In this Attachment:

- 1) all references to a *clause*, unless specified otherwise, are references to a *clause* in this Attachment; references to a *paragraph* are references to a *paragraph* in this Attachment;
- 2) all terms and names are to be interpreted according to the list of definitions in Attachment A of the Access Code for Storage;
- 3) the layout, heading and table of contents are only for the benefit of the reader and are inconsequential as regards the interpretation of content of this Attachment;
- 4) the description of rules, conditions and provisions only relates to the Storage Services offered at the Storage Installation.

2. OPERATING PROCEDURES

2.1. PURPOSE, CONTENT AND APPLICATION

2.1.1. Purpose

The purpose of this section is to describe all of the Operating Procedures, required for the correct and optimal use of the Storage Services.

2.1.2. Content

This Section contains information about the applicable operating rules, procedures, provisions, stipulations, conditions and means of communication that govern the offer and use of the Storage Services for the Storage Operator and the Storage Users.

2.1.3. Application

This Section applies to Storage Services offered at the Storage Installation.

2.2. GENERAL PROVISIONS

2.2.1. Time reference

Any reference to time shall be construed as being whatever time shall be in force in Belgium, namely the civil time convention.

2.2.2. Transmission protocol

The protocol, to be used by the Storage User and the Storage Operator for exchanging Edig@s messages which are containing contractual data and dispatching information, shall be AS2 or AS4 (Applicability Statement 2 or 4). For the avoidance of doubt, the specifications of all XML Edig@s notices which need to be exchanged between Storage Operator and Storage User can be retrieved sorted by versions on the Edig@s website (<http://www.edigas.org>), more particularly in the guidelines section. All information about the AS2 and AS4 protocols can be retrieved on the EASEE-gas website (<http://www.easee-gas.org>).

2.2.3. Nominations and matching procedures

The procedures further described in article 2.32.3 are in line with the EASEE-gas Common Business Practice 2003-002/03 “Harmonization of the Nomination and matching Process”.

2.2.4. Storage User EDIG@s code

The Storage User shall be provided with the necessary Storage User EDIG@s codes for Nominations, matching purposes by the Storage Operator.

2.2.5. Company Storage User code

The Storage User shall use its Energy Identification Coding Scheme (EIC code) to set up the EDIG@S communication with Storage Operator.

In its EDIG@S message Storage User shall either use its Energy Identification Coding Scheme (EIC code delivered by ENTSO-E or ENTSO-G) or its Company EDIG@S code (delivered by EDIG@S Working group).

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2.3. NOMINATION PROCEDURES

Notwithstanding the provision in paragraph [2.2.22-2.2](#) if for whatsoever reason Storage Operator or the Storage Users are prevented from exchanging messages using Edig@s format with AS2 [or AS4](#) protocol, e-mail communication will be used as a temporary fall-back solution. Storage Operator will use its reasonable endeavours to treat these e-mail messages like as they were sent by Edig@s format (AS2 [or AS4](#) protocol).

2.3.1. General

Nominations in the Storage System are based on the principle of entry/exit (“Entry/Exit”), meaning that:

- for Nominations at the Installation Point, Withdrawal Nominations (exiting the Storage Installation “Exit”), shall be stated as a negative value, while Injection Nominations (entering the Storage Installation “Entry”) shall be stated as a positive value.
- for Nominations at the Commodity Transfer Point (CTP), Nominations exiting the Gas In Storage (exiting a GIS “Exit”) shall be stated as a negative value, while Nominations entering the Gas In Storage (entering a GIS “Entry”) shall be stated as a positive value.

The Storage User is able to nominate within its Real Storage Volume, Real Injection Capacity and Real Withdrawal Capacity, or as the case may be in its Priority Booster capacity or in the Booster Capacity, according to the procedures in this section.

2.3.2. Check procedures for Confirmed Nominations

The Nominations of the Storage Users are confirmed by the Storage Operator:

- by verifying whether the Nominations of the Storage Users are physically feasible through the “Technical Capacity check procedure”;
- by verifying whether the Nominations of the Storage Users are within the Real Capacity through the “Real Capacity check procedure”;
- by verifying whether the Nominations of the Storage Users can be allocated within its Priority Booster Capacity and/or by Booster Capacity through the “Unused Capacity check procedure”;
- by verifying if there are no constraints applicable on the Installation Point through the “Constraint check procedure”;
- by verifying whether the Nominations of the Storage Users match the Nominations of the Grid User at the Installation Point (as set out in paragraph 2.3.3) or match the Nominations of Other Storage Users on the CTP (as set out in paragraph 2.3.7). This is the “Matching check procedure”.

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2.3.3. Forwarding Nominations in Storage and Transmission

By default the Storage Operator will forward the Nominations of the Storage User at the Installation Point, send as an SDT format (as set out in the Daily Nomination procedure in paragraph ~~02.3.6~~) to the Transmission Operator while changing the sign of the Nominations to comply with the entry/exit standard in the Transmission System. Consequently the Storage User does not need to send a corresponding Nomination (SDT) to the Transmission Operator. In this way direct and easy access to the ZTP and Transmission System (Entry/Exit) is enabled.

The Storage User can only nominate against one specific counterparty (“Default Counterparty”), being a Grid User in the Transmission System, active on the Installation point of Loenhout. However, multiple shipper codes of this counterparty can be nominated against. For this purpose, Storage User will at the latest 5 Business Days before the Start Date of a Contract Period or in case a change is needed, notify the Storage Operator of its (new) Default Counterparty and the corresponding shipper codes.

Nominations sent by a Grid User for the Installation Point Loenhout on the Transmission System will be disregarded by the Transmission Operator.

The Transmission Operator will automatically perform its own Nomination matching check procedure using the forwarded Nominations, and taking into account (as the case exceptionally may be) a constraint in Transmission System set by the Transmission Operator. In case such constraint in the Transmission System occurs, Nominations in Storage System can also be reduced accordingly.

The Storage User will receive a Confirmed Nomination (TDT) from the Storage Operator for the Storage System while the corresponding Default Counterparty will receive a TDT on the Transmission System.

By the same principle and for as far as the Storage User agrees, Storage Operator may accept to receive and treat (within its check procedures for Nominations) forwarded Nominations from the Transmission Operator in case the latter would provide such service. Storage User must then indicate to the Storage Operator its Default Counterparty on the Transmission System.

2.3.4. Seasonal Storage Program procedure

The Storage User shall submit a Seasonal Storage Program at the Installation Point for the next six (6) calendar months, as follows:

Subject:

The Storage User shall submit the netted daily quantities of energy requested for each Day for Injection and Withdrawal at the Installation Point for the next six (6) Months.

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Default values:

At the beginning of each Storage Year, the Storage User's Seasonal Storage Program on Electronic Data Platform for Storage will be set by Storage Operator based on an average monthly Injection and Withdrawal rate of the previous Storage year.

The Storage User should overwrite these default values with its adapted monthly provisions and thereby submitting its Storage User's Seasonal Storage Program.

Notification procedure:

No later than 5 Days before the start of the Storage Year, the Storage User shall submit its Storage User's Seasonal Storage Program to the Storage Operator.

Revision:

Before the 20th Day of each Month, or in the event of any significant change, the Storage User shall send an updated Storage User's Seasonal Storage Program for the next six (6) Months or up to the end of the Storage Year.

If the Storage Operator does not receive a revision of the program, it shall assume that the previous program is still valid.

The Seasonal Storage Program can be submitted for a period starting on Day d+2, until and including Month m+6. Nominations for Day d+1 should be submitted according to the daily Nomination procedure.

Action taken by the Storage Operator:

Based upon the Storage User's Seasonal Storage Programs of all Storage Users, the Storage Operator will use the aggregated Seasonal Storage Program profile for calculation of the forecasted Correction Factors.

Transmission:

The Storage User shall submit its Seasonal Storage Program by Electronic Data Platform for Storage. In case Electronic Data Platform for Storage is unable to facilitate the Seasonal Storage Program, the Storage User shall send the document by e-mail to the Storage Operator.

Remark:

The Storage User's Seasonal Storage program will be considered as a forecast and not as Nomination. Only the Storage User's Daily Storage Notice (SDT) will be considered as Nomination (see paragraph 2.3.6.4)

2.3.5. Daily Factor Report and Daily Availability Forecast

The Storage Operator issues a Daily Factor Report (DFR) and the Daily Availability Forecast (DAF).

These reports contain following information¹ for each Gas Day for the coming Storage Season.

- The Daily Factor Report (DFR): the expected values for following Correction Factors (see paragraph 2.5)
 - Injection Correction Factors: VFI, MFI, ~~CFI~~, AFI ;
 - Withdrawal Correction Factors: VFW, MFW, ~~CFW~~, AFW.
- the Daily Availability Forecast (DAF):
 - the Real Injection Capacity, Real Withdrawal Capacity and the Real Storage Volume;
 - the Operating Mode.

On the basis of the available data in the Daily Factor Report and Daily Availability Forecast, the Storage Users shall send a Storage User's Daily Storage Notice.

Notification procedure:

The DFR and DAF are under normal circumstances updated once a day, but can be revised on an hourly basis. The Storage Operator shall send revised DFR and DAF best effort up to 4 hours in advance of the hour where the Correction Factors become effective. Changes to the Correction Factors that are known less than four full hours before the time that they become effective will be reported to the Storage Users, if they affect the confirmed Nomination, using a new confirmation of the Nomination (TDT notice).

Transmission:

The DFR and DAF are published by the Storage Operator on the Electronic Data Platform for Storage. In case the Electronic Data Platform is unable to provide the DFR/DAF, the Storage User can receive the DFR and DAF by e-mail.

¹ As far as data are available on hourly or daily basis

2.3.6. Daily Nomination procedure

2.3.6.1. General

In order to notify Storage Operator of the quantities of Natural Gas to be injected or withdrawn under the Standard Storage Agreement, the Storage User shall notify Storage Operator by sending Nominations and, if applicable, Renominations to Storage Operator, according to the following procedure.

The Storage User shall communicate to Storage Operator the Nominations at the Installation Point, being the last Nomination received by Storage Operator before 14:00 hours on Gas Day $d-1$ and accepted by Storage Operator. The Nominations received after the 14:00 hour's deadline will be buffered until 16:00 hours, the revised Nomination being the last Nomination received by Storage Operator before 16:00 hours on Gas Day $d-1$ and accepted by Storage Operator.

If applicable, the Storage User shall communicate to Storage Operator a Renomination. The last Renomination shall be the last Renomination accepted by Storage User.

If no Renomination is received by Storage Operator, the last Nomination is deemed equal to the accepted value of the (initial) Nomination.

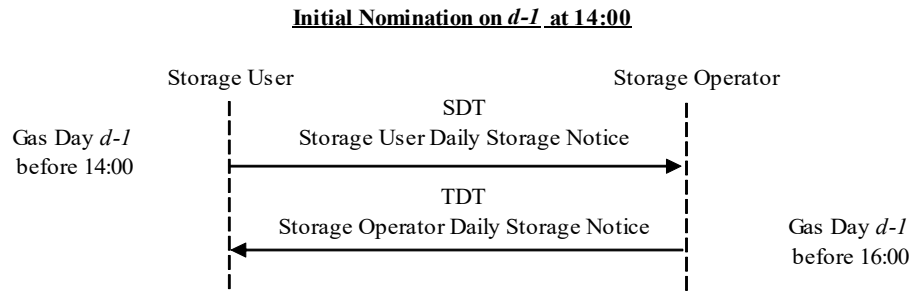
In the rest of this article, only the Nomination will be mentioned. This value has to be considered as an initial Nomination or as a last Nomination according to the above-mentioned rule.

The general procedure consists of four steps:

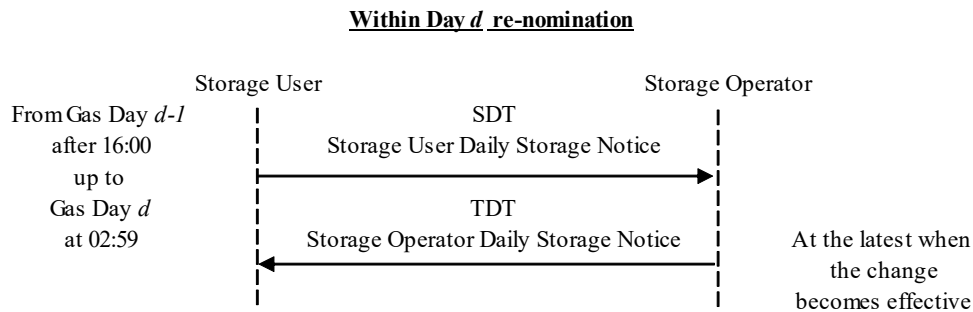
1. The Storage User sends a Storage User's Daily Storage Notice ("SDT") to Storage Operator with the Nomination at the Installation Point.
2. The Storage Operator checks validity of the message format
3. Storage Operator performs the check procedures (see paragraph 2.3.2) at the Installation Point.
4. Storage Operator sends a Storage Operator Daily Storage Notice to the Storage User with the confirmed quantities at the Installation Point.

The Storage User shall submit a Storage User's Daily Storage Notice at the Installation Point complying following schedule:

2.3.6.2. Initial Nomination on Gas Day *d-1* at 14:00 hours



2.3.6.3. Renomination cycle



The Renomination cycle starting every hour is optional. It is only used in case of changes to the (initial) nomination.

2.3.6.4. Storage User’s Daily Storage Notice (SDT)

This notice shall be issued by the Storage User to inform Storage Operator about the hourly quantities, expressed in kWh, of the Natural Gas to be injected or withdrawn under the Standard Storage Agreement for each hour of the Gas Day at the Installation Point.

At the same time, for matching and allocation purposes, the Storage User will indicate which (coded) Default Counterparty (see paragraph 2.3.3) in the Transmission System will deliver/redeliver the Natural Gas at the Installation Point.

For the avoidance of doubt, the applicable GCV for the Nominations in the SDT, due to the forwarding of Nomination to the Transmission System (as set out in paragraph [2.3.32-3.3](#)), is the Conversion GCV for H-zone (CGCV_H) and is the same as in the Transmission system.

The Edig@s notice type of the SDT will be “NOMINT”.

In the event that the Storage User does not issue a valid SDT by Edig@s or by e-mail, the quantities for corresponding Confirmed Nomination for the Installation Point or Commodity Transfer Point will be zero (0) kWh/h.

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The default Renomination-rule applicable for SBU's, gives the Storage User the possibility to revise its ~~the~~-SDT and adapt its previous hourly Nomination(s). Such Renomination shall at the earliest and ~~-~~within technical and operational limits, become effective after 2 (two) full hours (unless specified otherwise) following the receipt of a revised SDT. Storage Operator reserves the right to apply for Additional Services a different Renomination rule which will be specified in the relevant Service Confirmation.

2.3.6.5. Storage Operator's Daily Storage Notice (TDT)

The TDT is the outcome of the Nomination confirmation that is described in detail in paragraph ~~02.3.9~~.

This notice shall be used by Storage Operator to notify the Storage User for each hour of the relevant Gas Day, of:

- the hourly confirmed quantities of Natural Gas scheduled for Injection/Withdrawal through the Storage system or scheduled to be transferred from one Gas In Storage account to another for a TDT linked with the CTP, and
- the quantities the Transmission Operator is able to receive or deliver for such pair of Grid User, based on the Nominations of the upstream or downstream Grid User and taking constraints into account (hourly processed quantities).

The deadline for Storage Operator for sending a TDT to the Storage User will be 16:00 CET on the Gas Day (*d-1*) before the delivery/redelivery. Any change during the Gas Day becomes effective after the Renomination was confirmed.

The Edig@s notice type of the TDT will be "NOMRES".

The Storage Operator shall also issue a revised TDT whenever for any reason (re)deliveries have to be adjusted, due to amongst others changes in the correction factors, reductions and interruptions.

In the event Edig@s message cannot be sent, Storage Operator will use its reasonable endeavors to send the TDT timely per e-mail.

2.3.7. Daily Nomination procedure at the Commodity Transfer Point

In order to enable Storage Users to transfer Gas In Storage, the Storage Operator has created a Commodity Transfer Point – "CTP" that allows the transferor to nominate a Commodity Transfer from his GIS account to the GIS account of the transferee. The Nomination can only be performed with a Storage User's Daily Storage Notice according to the Nomination procedures as set out in paragraph 2.3.4, taking into account following conditions:

- the Commodity Transfer can take place at any hour on the Day as mutually agreed between the transferor and the transferee.

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- If for one hour, there is a mismatch between the Storage User’s Nominations on the CTP, both the Confirmed Nominations between the Storage Users for that hour will be reduced to the lesser value.

The Storage Operator shall confirm the Nomination by the Storage Operator’s Daily Storage Notice (TDT) as set out in paragraph 2.3.6.5.

2.3.8. Unused Capacity at the Installation Point

The Unused Capacities are available to the Storage User via Booster Capacity or via the subscribed Priority Booster Capacity. The Unused Capacities are applicable to Withdrawal or Injection.

2.3.8.1. Requesting Unused Capacity by Nomination

With Unused Capacity (Booster Capacity or Priority Booster Capacity), Storage User can nominate above his Real Injection or Real Withdrawal Capacity at the Installation Point. By his Nomination at the Installation Point the Storage User shall communicate the requested amount of energy above his Real Injection or Real Withdrawal Capacity.

The Storage User’s Nomination for Withdrawal is limited to the maximum Withdrawal flow of the Storage Installation.

The Storage User’s Nomination for Injection is limited to the maximum Injection flow of the Storage Installation.

The requested unused quantities of the Storage Users are limited to the “ceiling value” of the Storage Installation, as the case may be, for Injection or for Withdrawal. The “ceiling value” is set by the Storage Operator, using its reasonable endeavours, in order to preserve the availability of the Underground Reservoir for Injection and Withdrawal Capacities for the remaining period within the Storage Year.

2.3.8.2. Available Unused Capacity

$AvUEC'_h$ Available Unused Energy Capacity at hour h at the Installation Point [kWh], as the case may be for Withdrawal or for Injection.

The available Unused Capacity can consist of:

- the day-ahead Injection or Withdrawal Capacity, at the Storage Installation, which can be made available by the Storage Operator taking into account Maintenance ~~and reductions of the Conditional Withdrawal and Conditional Injection Capacities;~~
- the non-nominated Capacity of each Storage User, for every hour, calculated as the difference between his Real Injection Capacity or Real Withdrawal Capacity and his corresponding Nomination.

Both the day-ahead Capacity and the non-nominated Capacity shall be made available to the Storage User on an interruptible basis. Reduction or interruption of the Unused Capacities shall be performed on full hour + 2.

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2.3.8.3. Allocation of the available Unused Capacity

The allocation of available Unused Capacity to the requesting Storage Users is performed by Storage Operator as described hereunder:

- The checked energy Nomination is the part of the confirmed energy Nomination limited to the Real Capacity (Injection or Withdrawal as the case may be) if the Nomination exceeds the corresponding Real Capacity.

$$CEN'_h = \min (EN'_h; RExCx_h)$$

with:

CEN'_h Checked energy (last) Nomination at hour h at the Installation Point [kWh] as the case may be for Withdrawal or Injection.

EN'_h Confirmed energy (last) Nomination at hour h at the Installation Point [kWh], as the case may be for Withdrawal or Injection.

$RExCx_h$ As the case may be: (see paragraph [02.5.4](#))

- either the Real Withdrawal Capacity in the Operating Mode Withdrawal (REWCWD),
- either the Real Injection Capacity in the Operating Mode Injection (REICIN).

- The requested Unused energy Nomination is the part of the confirmed energy Nomination above the Real Capacity (Injection or Withdrawal, as the case may be) if the Nomination exceeds the corresponding Real Capacity, limited to the maximum available Injection or Withdrawal flow of the Storage Installation.

$$RUEN'_h = \max (0; (\min(\sum_{users} RExCx_h; EN'_h) - CEN'_h))$$

with:

$RUEN'_h$ Requested Unused Energy (last) Nomination at hour h at the Installation Point [kWh], as the case may be for Withdrawal or for Injection.

- The Requested Unused Energy Nomination can be split between a part requested under the Priority Booster Capacity of the Storage User and a part requested as Booster Capacity

$$RPBoEN'_h = \min (RUEN'_h; PBoC)$$

$$RBoEN'_h = RUEN'_h - RPBoEN'_h$$

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with:

$RPBoEN'_h$ Requested Priority Booster Capacity Energy (last) Nomination at hour h at the Installation Point [kWh], as the case may be for Withdrawal or Injection.

$PBoC$ Priority Booster Capacity [kWh], as the case may be for Withdrawal or Injection.

$RBoEN'_h$ Requested Booster Energy (last) Nomination at hour h at the Installation Point [kWh], as the case may be for Withdrawal or for Injection.

- The allocation of available Unused Capacity to the Storage Users is performed in the following order:
 - ~~Before claiming the Conditional Injection Capacity/Conditional Withdrawal Capacity as set out in paragraph 2.5.3.2.2, the~~ Transmission Operator or the Storage Operator has the right to use the available Unused Capacity – up to the amount he has subscribed Unused Capacity for ~~under the same conditions as in paragraph 2.5.3.2.2.~~
 - The remaining available Unused Capacity – capped to the sum of $RPBoEN'_h$ of all Storage Users – is then allocated to Storage Users having subscribed Priority Booster Capacity pro rata to their Requested Priority Booster Capacity Energy (last) Nomination

$$AccPBoEN'_h = \min(AvUEC'_h - RPBoEN'_{h,TSO}; \sum_{users} RPBoEN'_h) * \frac{RPBoEN'_h}{\sum_{users} RPBoEN'_h}$$

with:

$AccPBoEN'_h$ Accepted Priority Booster Capacity Energy (last) Nomination at hour h at the Installation Point [kWh], as the case may be for Withdrawal or Injection.

- The remaining available Unused Capacity – minus the Booster Capacity requested by Transmission Operator $RBoEN'_{h,TSO}$ – and capped to the sum of $RBoEN'_h$ of all Storage Users – is allocated to Storage Users pro rata their requested $RBoEN'_h$

$$AccBoEN'_h = \min((AvUEC'_h - RUEN'_{h,TSO} - \sum_{users} AccPBoEN'_h); \sum_{users} RBoEN'_h) * \frac{RBoEN'_h}{\sum_{users} RBoEN'_h}$$

with:

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$AccBoEN'_h$ Accepted Booster Energy (last) Nomination at hour h at the Installation Point [kWh], as the case may be for Withdrawal or Injection.

- And

$$AccUEN'_h = AccPBoEN'_h + AccBoEN'_h$$

with:

$AccUEN'_h$ Accepted Unused Energy (last) Nomination at hour h at the Installation Point [kWh], as the case may be for Withdrawal or Injection.

2.3.9. Nomination Confirmation

2.3.9.1. General

The verifications (check procedures) hereunder are only performed on daily Nominations in order for the Storage Operator to send a corresponding TDT (at the latest Day $d-1$ at 16:00 hours) to the Storage User.

When confirming the Nominations, the Storage Operator performs the check procedures as set out in paragraph 2.3.2. After confirmation, the Storage Operator sends a TDT with the confirmed quantities to the Storage User, and communicates the Confirmed Nominations to the Transmission Operator. Subsequently the Transmission Operator communicates the result of this Confirmation to the Default Counterparty.

2.3.9.2. Technical Capacity Check Procedure

2.3.9.2.1. Purpose

The Technical Capacity Check Procedure guarantees that the Nomination does not exceed the technical capabilities of the Storage Installation.

2.3.9.2.2. Minimal Flows

The minimal Withdrawal flow ("MinWF") equals 565 000 kWh/h.

The minimal Injection flow ("MinIF") equals 678 000 kWh/h.

These values are used in the paragraphs below. This value can be adapted by Storage Operator for a certain Storage Year due to technical or underground changes and will be timely published on the Storage Operators website in the Storage Parameters.

2.3.9.2.3. Technical Capacity Check in Operating Mode Withdrawal

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In case the Operating Mode is Withdrawal, the following validation rules apply:

- If $AWN - AIN \geq \text{MinWF}$, all Storage User's Nominations will be accepted;
- If $AWN - AIN < \text{MinWF}$, and $AWN \geq \text{MinWF}$:
 - then all Withdrawal Nominations will be accepted;
 - the Injection Nominations are reduced proportionally to the Real Injection Capacity.
- If $AWN - AIN < \text{MinWF}$, and $AWN < \text{MinWF}$:
 - The Storage Installation will be switched to Stop Mode and the rules for "Stop Mode" are applicable.
 - Or the Storage installation will go to batch flow and the rules for "batch flow" are applicable as described in paragraph 2.3.9.2.6.

2.3.9.2.4. Technical Capacity check in Operating Mode Injection

In case the Operating Mode is Injection, the following validation rules apply:

- If $AIN - AWN \geq \text{MinIF}$, then all of the Storage Users' Nominations are accepted;
- If $AIN - AWN < \text{MinIF}$, and $AIN \geq \text{MinIF}$, then:
 - all Injection Nominations will be accepted;
 - the Withdrawal Nominations are reduced proportionally to the Real Withdrawal Capacity.
- If $AIN - AWN < \text{MinIF}$, and $AIN < \text{MinIF}$:
 - The Storage Installation will be switched to Stop Mode and the rules for Stop Mode are applicable
 - Or the Storage installation will go to batch flow and the rules for "batch flow" are applicable as described in paragraph 2.3.9.2.6.

2.3.9.2.5. Technical Capacity check in Operating Mode Physical Stop

If the Operating Mode is in "Stop Mode":

- If $AIN < AWN$, then the Withdrawal Nominations are accepted to an absolute value equal to the Injection Nominations, where applicable, divided between the Storage Users in proportion to their Real Withdrawal Capacity.
- If $AWN < AIN$, then the Injection Nominations are accepted to an absolute value equal to the Withdrawal Nominations, where applicable, divided between the Storage Users in proportion to their Real Injection Capacity.

2.3.9.2.6. Batch flow

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In case the Technical Capacity Check results in the Injection Capacity or Withdrawal Capacity being lower than the MinIF or MinWF, the Storage Operator shall use its reasonable endeavours in order to accept the Nominations by realizing the daily nominated quantities by flowing (injection or withdrawal) during a limited number of hours with a physical flow higher than the minimum flows (MinIF or MinWF) followed by stopping the flow during a number of hours. During “batch flow” the Storage Installation will stay in the original Operating Mode.

2.3.9.2.7. Profile Limitations

In the exceptional cases that the Storage Operator, as a result of the aggregated Nominations, is not able to start or stop equipment within the term resulting from the Nominations, the Storage Operator will decide at its sole discretion whether or not to accept the Nominations. In case the Storage Operator is not able to execute and therefore accept the Nomination program, the Storage Operator is authorized to modify the Nomination program to an executable profile.

- In case the Withdrawal flow, as a result of the aggregated Nominations for a certain hour, is higher than 5 593 500 kWh/h², this flow regime shall only be guaranteed during three (3) consecutive Gas Days. The Storage Operator will use its reasonable endeavours to maintain this flow for more Gas Days, after which the Real Withdrawal Capacity can be lowered due to, amongst others, Underground Reservoir constraints of the Storage Installation.
- In case the Injection flow, as a result of the aggregated Nominations for a certain hour, is higher than, 3 333 500 kWh/h³, this flow regime shall only be guaranteed during eight (8) consecutive Gas Days. The Storage Operator will use its reasonable endeavours to maintain this flow for more Gas Days, after which the Real Injection Capacity can be lowered due to, amongst others, Underground Reservoir constraints of the Storage Installation.

2.3.9.3. **Real Capacity and Unused Capacity check procedure**

2.3.9.3.1. Preliminary Check on Subscribed Capacity (Withdrawal and Injection)

Storage Operator will not accept a (Re)Nomination higher than the applicable total Subscribed Capacity rights (Withdrawal and/or Injection) the Storage User is entitled to. If the flow rate exceeds the Subscribed Capacity rights (Withdrawal and/or Injection) at any time within the Gas Day, the Storage Operator is entitled to refuse the (Re)Nomination taking into account the Unused Capacities of the Storage User, as the case may be. In case of refusal of the (Re)Nomination the Storage Operator will send a notification by e-mail with the Services on which a Capacity exceeding has been

² This value can be decreased by Storage Operator in proportion to the aggregated subscribed Storage Capacity of a certain Storage Year and will be timely published on the Storage Operators website in the Storage Parameters.

detected, the Nominated hourly quantity and the Subscribed Capacity rights (Withdrawal and/or Injection).

2.3.9.3.2. Check on Real Capacities and Unused Capacities

In case of an Injection or Withdrawal Nomination at the Installation Point, the Storage Operator will verify whether the Nomination does not exceed the Real Injection Capacity or Real Withdrawal Capacity added with the allocated Unused Capacities of the Storage User, as the case may be, for Injection or for Withdrawal.

- If there is an exceeding of the sum of the Real Withdrawal Capacity and the allocated Unused Capacity of the Storage User, then the Storage Operator shall issue a Storage Operator's Daily Storage Notice (TDT) with reduced values, limited to the sum of the Real Withdrawal Capacity and Allocated Unused Capacity.
- If there is an exceeding of the sum of the Real Injection Capacity and the allocated Unused Capacity of the Storage User, then the Storage Operator shall issue a Storage Operator's Daily Storage Notice (TDT) with reduced values, limited to the sum of the Real Injection Capacity and allocated Unused Capacity.
 - Calculation of the Real Injection Capacity, the Real Withdrawal Capacity and the Real Storage Volume is stipulated in paragraph [02-5-4](#).
 - Calculation of the Unused Capacity is stipulated in paragraph [002-3-8](#).

2.3.9.3.3. Check on Commodity Transfer:

A Storage User ("transferor") shall be entitled to transfer Gas In Storage to any other Storage User ("transferee") under the following conditions:

- the transferred Gas In Storage (expressed in energy) of the transferor shall not exceed the transferor's Gas In Storage (GIS not lower than zero) at the time of the Commodity Transfer.
- the Gas In Storage (expressed in energy) of the transferee plus the amount of the Commodity Transfer shall not exceed the Real Storage Volume of the transferee at the time of the Commodity Transfer.
 - Calculation of the Gas In Storage is stipulated in paragraph 2.4.5.6.

2.3.9.4. **Matching check procedure**

The matching procedure on the Injection Nominations, Withdrawal Nominations and Commodity Transfer Nominations, performed for Nominations for Day Ahead at 16:00 hours Day *d-1*, will check whether:

- a) in case of Injection or Withdrawal Nominations: the quantity that the corresponding Grid User in the Transmission System has nominated to the

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Transmission Operator at the Installation Point is equal to the quantity that the Storage User in the Storage Installation has nominated to the Storage Operator at the Installation Point, and is within the Subscribed capacity;

- b) in case of a Commodity Transfer: the quantity that the corresponding Storage User has nominated at the CTP is equal to the quantity that the Storage User has nominated;
- c) each combination of the (coded) party that nominated in the Transmission System to the Transmission Operator at the Installation Point matches the (coded) party that nominated in the Storage Installation to the Storage Operator at the Installation Point.

If the quantities *set out above under a) or b)* are equal and the combinations of parties *set out above under c)* are identical, then there is a matching of Nominations. In case of a mismatch, the mismatch rule is applied as follows:

- a) If the quantities nominated by the different corresponding Grid Users in the adjacent Transmission System at the Installation Point and limited to its Subscribed Capacity rights, as they are reported by the Transmission Operator to the Storage Operator, differ from the quantities nominated by the Storage User at the Installation Point and limited to its Subscribed Capacity rights, then the sum of the smallest value of the different hourly quantities that matches the quantities of Natural Gas nominated above shall be confirmed by means of the Storage Operator's Daily Storage Notice (TDT).
- b) In case of a mismatch, the Storage Operator shall notify the Storage User of the outcome of the matching procedure by sending a Storage Operator's Daily Storage Notice (TDT)
- c) Upon receipt of a Storage Operator's Daily Storage Notice (TDT), indicating a mismatch, the Storage User shall take the necessary actions to remove this mismatch and arrive at a match.
- d) In case there is no match after the (Re)Nomination deadline, the non-matching value in the Nomination program specified by the Storage User shall be replaced by the value as calculated by the mismatch rule.

2.3.9.5. Constraint check procedure:

When the Storage Operator and/or the Transmission Operator decides for whatsoever reason to put a Capacity interruption or a constraint on a connection or at the Installation Point, then this can – due to the capacity check performed by the Transmission Operator - result into a reduced confirmed quantity, notified by the Storage Operator to the Storage User by a TDT. In the event of Capacity interruption or constraint by the Storage Operator a pro rata the (last) Nomination will be applied.

2.4. GAS ALLOCATION PROCEDURE

2.4.1. Principles

The Storage Operator calculates the Gas Allocations in energy of Injection and Withdrawal to determine the amounts of Natural Gas to be attributed to Gas In Storage accounts of the different Storage Users when using Storage Services.

A Gas Allocation resulting from a gas assignment is considered as a transfer of Natural Gas between Gas In Storage accounts of different Storage Users.

The Gas Allocation(s) is calculated using following elements:

- the Nominations at the Installation Point and the CTP;
- the measured quantities of Natural Gas at the Installation Point;
- the Gas Allocation status, depending on the Operating Mode and the OBA status;
- the Gas Allocation Rule(s), i.e. the rule that determines how Gas Allocation(s) is calculated;
- the Settlement activities on the storage (e.g. GIK settlement, Run-off settlement and Yearly Energy Balance Settlement).

2.4.2. Types of Gas Allocations

Two types of Gas Allocations can be distinguished:

- The Steering Allocations are performed after the hour, based on the hourly Confirmed Nominations and/or Provisional Measurements and are notified to the Storage User at hour + 1. In case the Provisional Measurement fails, the measurement can be replaced by a best estimation (Replacement Value) in the Steering Allocation. After the hour h, the Steering Allocations are not changed in the past.
- The Validated Allocations are based on the hourly Confirmed Nominations and/or Validated Measurements the Storage Operator determined on the 20th Business Day of the Month following the Month for which the Gas Allocations are to be done. Changes after the Month + 20 Business Days can still take place and will be announced to the Storage Users.

2.4.3. Measurements

2.4.3.1. *At the Installation Point*

In addition to others, the following parameters are determined for each hour:

- the quantity of normal m³ that flows through the metering station,
- the quantity of energy that flows through the metering station,

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- the Gross Calorific Value of the Natural Gas that flows through the metering station,
- the quality of the Natural Gas that flows through the metering station, in particular including the CO₂ content of the Natural Gas.

2.4.3.2. *In the Storage*

In addition to others, the following parameters are determined each Day:

- the quantity of m³(n) of Natural Gas in the Underground Reservoir,
- the calculated total energy quantity in the Underground Reservoir, expressed in kWh.

2.4.3.3. *Principles*

All detailed measurement methods are described in the Metering and test procedures in Attachment E of the Access Code for Storage.

Principles of managing the measurement data are:

- the measurement data are the property of the Storage Operator;
- the Transmission Operator and Storage Operator are entitled to use the measurement data for managing the interactions between the Transmission System, and the Storage Installation;
- the basis for the Validated Measurement is the verification of the data from the metering stations. This cannot be done continuously (on-line): at the end of the month a verification of all metering stations is completed to obtain this final information.

2.4.3.4. *Provisional Measurement*

The Provisional Measurements in relation to an hour are the measurements the Storage Operator has access to, immediately after the end of the hour. These measurements include the Injection and Withdrawal energy measurement, the Injection and Withdrawal Volume measurement, and the Gross Calorific Value measurement, measured during hour *h*. Measurements are performed at the Storage Installation metering facility (managed by the Storage Operator).

These measurements, which are already very accurate, can due to the technical limits of the systems contain a number of inaccuracies and in some cases a number of Replacement Values. The Provisional Measurements can be made available to the Storage User through the Electronic Data Platform for Storage.

The hourly meter readings are used for the calculation of the Steering Allocations.

2.4.3.5. *Validated Measurement*

The Validated Measurements are the corrected measurements after verifying after the month a number of factors in situ in the metering station and after correcting the Replacement Values with the validated values. The standard period after which the Storage Operator can have access to the Validated Measurements is 20 Business Days following the end of the Month for which the Gas Allocations are performed. The Validated Measurements include Injection and Withdrawal energy measurement, Injection and Withdrawal volume measurement, and Gross Calorific Value measurement.

The hourly meter readings are used for the calculation of the Validated Allocations. The Validated Measurements are communicated to the Storage Users in the monthly invoice. The Validated Measurements are made available to the Storage User through the Electronic Data Platform for Storage.

2.4.4. Replacement Value

2.4.4.1. *Purpose*

The purpose of using Replacement Values is to provide Storage Users for a limited time with a provisional meter reading in case of failure of the Provisional Measurements. The provisional meter reading incorporating the Replacement Value is always checked after the Month prior the calculation of the Validated Measurement.

2.4.4.2. *Use of a Replacement Value*

When a certain measurement is not available at a certain time, a Replacement Value is used as a substitute to allow continuity of operations. The Replacement Value intends to provide a value as close as possible to the final meter reading, when no Provisional Measurement is available.

2.4.4.3. *Determining the Replacement Value*

If a measurement at the metering station is missing, such as in the event of a fault with an instrument, a default value is usually used as a Replacement Value. This value is the most probable value for the z value, temperature, pressure, etc.

In case no metering value is available, recourse is temporarily made to, amongst others, historical data, additional operating data within the facilities, Nominations.

2.4.5. Allocation process

The allocation process consists of Steering Allocation reported after the hour based on the best available data and Validated Allocation reported after the Month + 20 Business Days³.

2.4.5.1. Nominations

The Confirmed Nominations used for the calculation of the Allocations, are the last confirmed Nominations (TDT).

2.4.5.2. OBA Status

There is an OBA on the Installation Point with the Transmission System to cope with differences between Allocation and metering results. The Storage Operator can exceptionally set the OBA status at not operational when;

- the cumulated imbalance of the Steering Allocation exceeds the limits of the OBA;
- the integrity of the Transmission System or Storage Installation is in danger;
- the OBA gas exchange contract with the Transmission Operator changes.

Storage Operator will timely inform the Storage User when the OBA is not operational.

2.4.5.3. Gas Allocation settlement

2.4.5.3.1. Gas in Kind settlement

The estimated Own Consumption for each Month m , is determined as a percentage (GIK %) of the injected and withdrawn quantities by the Storage Users at the Installation Point, in accordance with the Regulated Tariffs. Exception is made for the Confirmed Reverse Nominations for which no GIK% is charged.

- In order to cover the Real Own Consumption (fuel gas & flares) of the Storage Installation for the current Month, the Storage Operator takes Gas In Kind on the hourly allocated Injection and Withdrawal Capacity pro rata the GIK% for Injection and Withdrawal

$$\text{GIK}_{\text{injection user h}} = (\text{EA}_{\text{injection user h}} * \text{GIK}\%_{\text{injection}})$$

$$\text{GIK}_{\text{withdrawal user h}} = (\text{EA}_{\text{withdrawal user h}} * \text{GIK}\%_{\text{withdrawal}})$$

With:

³ Corrections on the Validated Allocation can occur after Month + 20 Business Days

EA is the forward allocated energy of Storage User for Withdrawal or for Injection, in the same direction of the Operating Mode Injection (Withdrawal or Injection as the case may be),

- GIK% as defined in the Regulated Tariffs⁴ The total GIK Settlement of all Storage Users for a certain Month is the difference between:
 - the delivered GIK quantities by all Storage Users during that Month,
 - the actual Own Consumption for the Month.
- The GIK Settlement of Storage User for a certain Month is calculated pro rata the accumulated GIK amounts of Storage User in that Month for Injection and Withdrawal, limited to twice the amount of GIK delivered by the Storage User for the concerned Month.
- The GIK Settlement for a Storage User for a certain Month is settled (credited or debited) to/from the GIS account of the concerned Storage User at the first hour of the Month+2m.
- Correction on the GIK Settlement occur after the Month +2m

2.4.5.3.2. *Yearly Energy Balance (YEB) settlement*

The Storage Operator can perform a Yearly Energy Balance which is settled with the GIS accounts of the Storage Users or in cash using the average ZTP European Gas Spot Index over the concerned period if the Storage User no longer has sufficient Gas In Storage at the moment of the settlement.

The total Yearly Energy Balance (YEBtotal) for the concerned Storage Year is calculated by subtracting the Energy Balance of all GIS accounts, from the average GCV multiplied by the Volume Balance of the Storage Installation during this Storage Year. The detected difference in energy in Storage shall be settled with the energy of the GIS accounts of the Storage Users as a Yearly Energy Balance settlement (YEBSettl).

- The amount of YEB settlement of the Storage User is calculated pro rata the Storage User's withdrawn quantities over the Storage Year;
- A YEB settlement cannot be greater than 0,2% of the subscribed GIS ~~(firm & conditional)~~ of the Storage User;

⁴ Storage Operator reserves the right to change the in kind settlement ('GIK regime') into a settlement in cash ('GIC regime') by notifying Storage User at least 2 months before such application takes places subject to approval of tariffs by the CREG.

- The YEB settlement (when performed by the Storage Operator) for a Storage User for a certain Year is settled with the GIS account of the Storage User at the first hour of the Month+2 months or in cash on the Month of the settlement.

2.4.5.3.3. *Run-off settlement*

The amount of Natural Gas in the GIS account of a Storage User still in exceeding (excess or shortfall) at the last hour before the Run-off Period (as described in paragraph 2.7.3) will expire, is considered to be the Run-off settlement quantity of Natural Gas and is transferred at that moment in time to the Gas In Storage account of the Storage Operator. The settlement in cash for Run-off is treated in paragraph ~~2.7.3.22-7.3~~ and 2.7.3.3.

2.4.5.3.4. *Emergency settlement*

In case of Storage Emergency, the Storage Operator is entitled to request the Storage Users to immediately withdraw its Gas In Storage as much as possible, until a secure volume has been reached in the Storage Installation. The Storage User shall use its best efforts to respond to this request.

In case the Storage User does not respond to this request, the Storage Operator is entitled to withdraw a quantity of Gas In Storage from the Gas In Storage ~~a~~Account of the Storage User. This withdrawn Gas will be refunded in cash by the Storage Operator in accordance with attachment B of this ACS.

In case of SoS Emergency, as defined in the Security of Supply, and as confirmed by the ‘competent authority’ (as provided for in the Standard Storage Agreement), Storage Operator is entitled to withdraw a quantity of Gas In Storage from the Gas In Storage Account of the Storage User. This withdrawn Gas may be refunded in kind or in cash by the Storage Operator, for the latter in accordance with attachment B of this ACS.

2.4.5.4. *Installation Point Allocation*

The following Gas Allocation Rules are possible on, the Installation point:

- “Deemed to Confirmed Nomination”: for each hour, the Energy Allocation of the Storage Users equals the last Confirmed Nominations, as confirmed by the Storage Operator. This rule is valid for Confirmed Forward and Reverse Nominations
- “Proportional to measurement”: for each hour, the difference between the Allocation based on “Deemed to Confirmed Nomination” rule and the energy measurement is corrected on the Confirmed Forward Nominations pro rata these Nominations resulting in the Energy Allocation of the Storage User

In case the OBA is operational: (*in Injection or Withdrawal mode*)

- The Gas Allocation Rule is “Deemed to Confirmed Nomination” in energy for the Injection Allocation or the Withdrawal Allocation. This rule is valid for both confirmed Forward and Reverse Nominations.

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In case the OBA is not operational: (in Injection or Withdrawal mode)

- The Gas Allocation Rule is “Deemed to Confirmed Nomination” for the Confirmed Reverse Nominations in energy for Injection Mode or Withdrawal mode.
- The Gas Allocation Rule is “Proportional to measurement” for the confirmed Forward Nominations in energy for Injection mode or Withdrawal mode.

In case of the Operating Mode “Stop”

- The OBA is considered to be operational and the Gas Allocation Rule is “Deemed to Confirmed Nomination”.

2.4.5.5. CTP Allocations

- Gas Allocations for gas transfer apply at the CTP. The Gas Allocation is in energy and is independent of the OBA status.
- A CTP event is determined as any Confirmed Nomination on the CTP for any hour of the Gas Day between a Storage Users’-pair. The CTP Gas Allocation Rule is “Deemed to Confirmed Nomination”.

2.4.5.6. Gas In Storage Allocation

The Storage User’s Gas In Storage ~~a~~Account is used to keep track of the stored energy in the Storage Installation by a Storage User. It relates to the movements of Natural Gas through Injection, Storage and Withdrawal Capacities taking into account the GIK, GIK settlement, Run-off settlement, Emergency settlement and Yearly Energy Balance settlement.

The Gas In Storage is allocated in energy during any hour of the Contract Period up to and including the hour at the end of which the Gas In Storage is calculated. It is calculated as follows at the end of any hour of any Day:

- the sum of the following items, all expressed in terms of energy:
 1. the amount of allocated Gas In Storage the previous hour (expressed in energy);
 2. the Injection Allocation in energy corrected with the GIK% for Injection,
 3. the quantities of Natural Gas transferred in favor of the Storage User,
- less the sum of the following items, all expressed in terms of energy:
 4. the Withdrawal Allocation in energy corrected with the GIK% for Withdrawal,
 5. the quantities of Natural Gas transferred from the Storage User Account,
- on the first hour of the Month+2 months, corrected with (can be positive or negative):

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6. the Gas In Kind settlement quantity as calculated for month-2 months,
- corrected with (can be positive or negative) at the moment of the event.
7. the Run-off settlement as calculated (when applicable),
8. the Emergency Settlement (when applicable),
9. the Yearly Energy Balance settlement (when applicable).

$$E_{GIS\ h} = E_{GIS\ h-1} + EA_{in\ h} * (1-GIK\%in) - EA_{wd\ h} * (1+GIK\%wd) + EA_{CTP\ h} + GIK\ settl\ (M-2m) + Run-off\ settl\ (when\ applicable) + YEB\ settl\ (when\ applicable) + EM\ settl\ (when\ applicable)$$

With, for the Storage User:

- $E_{GIS\ h}$ is his Energy in GIS at a certain hour (h)
- $E_{GIS\ h-1}$ is his Energy in GIS at the previous hour (h-1)
- $EA_{in\ h}$ is his Allocated Energy Injection (hourly)
- $EA_{wd\ h}$ is his Allocated Energy Withdrawal (hourly)
- $GIK\%in$ is the % on GIK for Injection (1,0 %)
- $GIK\%wd$ is the % on GIK for Withdrawal (0,5 %)
- $EA_{CTP\ h}$ is his Energy Allocated at the CTP
- $GIK\ settl$ is his Energy settlement on the GIK for Month-2m
- $Run-off\ settl$ is his Energy settlement of the Run-off Gas
- $YEB\ settl$ is his Energy settlement on the Yearly Energy Balance for Month -2m
- $EM\ settl$ is the Energy settlement in case if Emergency

2.4.5.7. **Booster Allocation**

For the calculation of the Service Fee for the Booster Capacity, the maximum Booster Allocation as set in paragraph 2.3.8.3 of the Gas Day is taken into account for every Gas Hour of the Gas Day:

$$\sum_d \left(\max_{h \in d} (AccBoEN'_h) \right)$$

2.4.6. **Communication of Gas Allocation results**

2.4.6.1. **Communication Channels**

Different channels are used to communicate the Provisional and Validated Allocations as well as the GIS position:

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- Edig@s: this is the preferred electronic communication tool. The Storage Operator sends its notices using the Edig@s format with AS2 or AS4 protocol (used to exchange data). The Edig@s notice type of the Provisional Allocation (BALL) will be “ALOCAT”. The Edig@s notice type of the GIS position (GIS) will be “ACCPOS” or ACCSIT depending on the Edig@s version. In case of changes in the Edig@s format Storage Operator will timely inform the Storage User.
- The Storage Operator provides the Storage Users access to the Electronic Data Platform for Storage to track its Allocation results. This additional tool allows Storage User to track its Steering and Validated Allocations. (More information about this can be found at www.fluxys.com). For the avoidance of doubt, the reference for the allocations remains the Edig@s messages.

2.4.6.2. *Communication problems*

In the event of communication problems when sending the hourly Gas Allocations, the Storage Users can use their Nominations as a basis for steering of subsequent Nominations. Differences found afterwards between the Nominations and the Gas Allocations will not result in penalties.

2.5. CORRECTION FACTORS AND REAL CAPACITY

2.5.1. Purpose

The Real Capacity is the part of a Subscribed Capacity the Storage User can use. The Real Capacity is communicated to Storage User by two means:

- the Correction Factors,
- the Real Capacity (amounts)

The Correction Factors allow the Storage User to calculate the Real Capacity relating to a Subscribed Capacity. The Correction Factors allow decomposing the extent to which the different influences reduce the Real Capacity. Correction Factors can be common to all Storage Users or can be different per Storage User.

2.5.2. Influences

The Real Injection Capacity and Real Withdrawal Capacity are influenced by:

- ~~the nature of the Storage Service (e.g. firm, conditional),~~
- the aggregated Gas In Storage of Storage Users,
- the Gas In Storage in the account of the Storage User,
- the cumulated flow profile at the Installation Point in the past,
- the Operating Mode of the Storage Installation,
- planned Maintenance,
- unforeseen Maintenance,
- Reductions on behalf of the Storage Operator or Transmission Operator.

The Real Storage Volume is influenced by:

- ~~the nature of the Storage Service (e.g. firm, conditional)~~
- ~~the GCV(s) subscribed for the Storage Volume of the Storage User~~
- the GCV of Gas In Storage of all Storage Users,
- the Extended Gas in Storage (as the case may be),

2.5.3. Correction Factors

2.5.3.1. General

The Correction Factors for reduction or interruption of Subscribed Capacities are determined by the Storage Operator acting as a "Reasonable and Prudent Storage Operator" on a daily or an hourly basis, taking into account foreseen and unforeseen interruption events and the best available data.

The Correction Factor value is expressed in a percentage and rounded to one (1) decimal.

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In case a reduction or an interruption of the Subscribed Capacities is required, the Storage Operator shall:

- where the factor is common to all Storage Users, apply the reduction between the different Storage Users proportionally to the Subscribed Capacities, ~~taking into account the type of Storage Service (firm or conditional)~~;
- where the factor is proper to the Storage User, apply the reduction in proportion to the Storage User's factor(s) and its corresponding Subscribed Capacity;
- the Storage Operator shall communicate to the Storage User a reduction or interruption of the Storage Services as early as possible:
 - If the reduction is known by the Storage Operator in advance, notification of interruption is given by sending a Monthly, Weekly or Daily Factor Report with Correction Factors;
 - Without prejudice to provisions for Emergency, where necessary, the Storage Operator can interrupt with a pre-warning time of up to 2 hours. In such a situation, it will notify the interruption with a new confirmation of the Nomination (TDT notice).

2.5.3.2. Correction Factors for Injection or Withdrawal Capacity

2.5.3.2.1. Volume Correction factors

The volume Correction Factors affect the firm Injection Capacity and the firm Withdrawal Capacity, due to the constraints of the Underground Reservoir:

- The Volume Factor for Injection (VFI);
- The Volume Factor for Withdrawal (VFW).

They depend upon:

- The Gas In Storage of all Storage Users;
- The flow profile at the Installation Point in the past.
- The subscribed Storage Services of the Storage User and its contractual conditions (as described in the respective Service Confirmations(s))

They are determined by the level of Gas In Storage of the Storage User using the Seasonal Storage Program or Nominations sent by the Storage User.

The value of the VFI, VFW can vary between zero percent (0,0%) and one hundred percent (100,0%).

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The maximum values⁵ of the VFW (VFWmax) and the VFI (VFImax) for the Storage Installation are published on the website of the Storage Operator.

~~2.5.3.2.2. Conditional Correction Factors~~

~~The conditional Correction Factors affect the Conditional Injection Capacity and the Conditional Withdrawal Capacity, which are due to reduction on behalf of the Storage Operator or the Transmission Operator:~~

- ~~• Conditional Factor for Injection (CFI);~~
- ~~• Conditional Factor for Withdrawal (CFW).~~

~~They depend upon:~~

- ~~• Balancing needs of the Transmission Operator;~~
- ~~• Exceptional needs of the Storage Operator~~
- ~~• The subscribed Storage Services of the Storage User and its contractual conditions (as described in the respective Service Confirmations(s))~~

~~The value of the CFI, CFW can vary between zero percent (0,0%) and one hundred percent (100,0%).~~

~~2.5.3.2.3-2.5.3.2.2. Maintenance Correction factor~~

The maintenance Correction Factors affect the Firm ~~and Conditional~~ Injection Capacity~~ies and~~ the Firm ~~and Conditional~~ Withdrawal Capacity~~ies~~, which are due to Maintenance:

- Maintenance Factor for Injection (MFI);
- Maintenance Factor for Withdrawal (MFW).

They depend upon:

- Planned Maintenance;
- Unforeseen Maintenance.

⁵ The underlying parameters for the determination of the VFI_{max} and VFW_{max} are determined in relation to the offered capacities, the Storage Service and the underground availability (amongst other - but not limited to - extension, or permitting changes). Any change hereof can influence these Correction Factors. The applicable Correction Factors for a Storage Year will timely be published on the Storage Operators website in the Storage Parameters.

- The subscribed Storage Services of the Storage User and its contractual conditions (as described in the respective Service Confirmations(s))

They are determined by the Storage Operator in function of the Maintenance of the Storage Installation.

The value of the MFI, MFW can vary between zero percent (0,0%) and one hundred percent (100,0%).

~~2.5.3.2.4. Conditional Storage Volume Factor (“CSF”)~~

~~The CSF affects the Conditional Storage Volume and is related to the Subscribed Storage Services of the Storage User(s).~~

~~By default the value of the CSF is one hundred (100%) percent. However, in case the total commercialized Storage Volume of the Storage Installation is reached, the Storage Operator reserves the right to reduce the Conditional Storage Volume to the level of the GCV_{stor}~~

With

- ~~GCV_{stor} is the GCV of the aggregated injected Gas In Storage during the Injection Season of all Storage Users for a Storage Year.~~

~~The value of the CSF can vary between zero percent (0,0%) and one hundred percent (100,0%).~~

~~2.5.3.2.5.2.5.3.2.3. Account factors affecting the Injection and Withdrawal Capacity~~

In case of a GIS exceeding (excess or shortfall) related to the Gas In Storage level of the Storage User, and without prejudice to the rules for Gas In Storage (as described in paragraph 2.7), the Storage Operator is entitled at all times to interrupt the Real Injection Capacity and the Real Withdrawal Capacity by means of an Account Factor:

- the Account Factor for Injection (AFI): when the GIS level of the Storage User has reached the set threshold (which will not be higher than 105% of the Storage Volume subject to the CSF of the Storage User), the AFI is set from minimum one (1) to zero (0) as soon as the effectively implemented threshold by the Storage Operator is detected;
- the Account Factor for Withdrawal (AFW): when the GIS in the Account of the Storage User equals or is less than zero the AFW is set from one (1) to zero (0) as soon as this threshold is detected.

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2.5.4. Real Capacity

Definitions:

<i>SFIC</i>	is the Subscribed Firm Injection Capacity of the Storage User,
<i>SFWC</i>	is the Subscribed Firm Withdrawal Capacity of the Storage User,
<i>SCIC</i>	is the Subscribed Conditional Injection Capacity of the Storage User,
<i>SCWC</i>	is the Subscribed Conditional Withdrawal Capacity of the Storage User,
<i>SCIWC</i>	is the Subscribed Conditional to Installation Withdrawal Capacity of the Storage User,
<i>SFSV</i>	is the Subscribed Firm Storage Volume of the Storage User,
<i>SCSV</i>	is the Subscribed Conditional Storage Volume of the Storage User,
<i>REICIN</i>	is the Real Injection Capacity of the Storage User in Injection Mode,
<i>REICWD</i>	is the Real Injection Capacity of the Storage User in Withdrawal Mode,
<i>REWCWD</i>	is the Real Withdrawal Capacity of the Storage User in Withdrawal Mode,
<i>REWCIN</i>	is the Real Withdrawal Capacity of the Storage User in Injection Mode,
<i>RESV</i>	is the Real Storage Volume of the Storage User.

Additional Capacities (as the case may be) will be added to firm ~~or conditional~~ capacities depending on their type ~~and nature~~.

2.5.4.1. Real Injection Capacity

- Forward Nominations: In case the Operating Mode is Injection, the Storage User's Real Injection Capacity (REICIN) is calculated using the following formula, which applies on the Forward Nominations of the Storage User:

$$\text{REICIN} = ((\text{SFIC} * \text{VFI}) + (\text{SCIC} * \text{CFI})) * \text{MFI} * \text{min}(1; \text{AFI})$$

- Reverse Nomination: Except for Storage Services where reverse nominations are explicitly excluded (as described in the relevant Service Confirmation), the Storage User's Real Injection Capacity (REICWD) - in case the Operating Mode is Withdrawal - is calculated using the following formula, which applies on the Reverse Nominations of the Storage:

$$\text{REICWD} = (\text{SFIC} + \text{SCIC}) * \text{min}(1; \text{AFI})$$

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- The aggregated Reverse Nominations of Storage Users remain in any case limited to the aggregated Forward Nominations (taking into account the minimal flows) and in such case are reduced pro rata the Reverse Nominations.

2.5.4.2. *Real Withdrawal Capacity*

- Forward Nominations: In case the Operating Mode is Withdrawal, the Storage User's Real Withdrawal Capacity (REWCWD) is calculated using the following formula, which applies on the Forward Nominations of the Storage User:

$$\text{REWCWD} = ((\text{SFWC} + \text{SCIWC}) * \text{VFW}) + (\text{SCWC} * \text{CFW}) * \text{MFW} * \text{AFW}$$

- Reverse Nomination: Except for Storage Services where reverse nominations are explicitly excluded (as described in the relevant Service Confirmation), the Storage User's Real Withdrawal Capacity (REWCIN) - in case the Operating Mode is Injection - is calculated using the following formula, which applies on the Reverse Nominations of the Storage User :

$$\text{REWCIN} = (\text{SFWC} + \text{SCWC}) * \text{AFW}$$

- The aggregated Reverse Nominations of Storage Users remain in any case limited to the aggregated Forward Nominations (taking into account the minimal flows) and in such case are reduced pro rata the Reverse Nominations.

2.5.4.3. *Real Capacities in Stop mode*

In case the Operating Mode is Stop, the formulas of REWCIN and REICWD are applicable, but limited to the netting-off to zero of the Aggregated Injection Nominations and the Aggregated Withdrawal Nominations

2.5.4.4. *Real Storage Volume*

The Real Storage Volume is ~~determined based on the Subscribed Conditional Storage Volume (“SCSV”) and equal to the~~ Firm Storage Volume (“SFSV”) ~~and is calculated as the Storage User's Real Storage Volume (“RESV”):~~

$$\text{RESV} = \text{SFSV} + \text{SCSV} * \text{CSF}$$

2.5.5. **Update of the Correction Factors and the Real Capacities**

Acting as a Reasonable and Prudent Storage Operator, the Storage Operator verifies the Correction Factors on a regular basis:

- He shall endeavour best effort to keep constant Correction Factors related to Maintenance 2 weeks in advance;
- He shall endeavour best effort to keep constant Correction Factors related to the Underground Reservoir 1 week in advance;

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- He shall endeavour best effort to keep constant Correction Factors related to reductions by the Storage Operator 1 day in advance.

Where necessary, the Storage Operator can change the Correction Factors with a pre-warning time of 2 hours. In such a situation, he will notify the change with a new DFR and DAF and a new TDT notice, when necessary. In case of Emergency, the Storage Operator is entitled to interrupt without any notice time.

The Storage Operator shall notify the Storage User by a TDT notice, when necessary. In case of Emergency, the Storage Operator is entitled to interrupt without any notice time.

2.5.5.1. Communication Channels

Different channels can be used to communicate the Correction Factors and the Real Capacities:

- Default: by publication on the Electronic Data Platform for Storage by the Storage Operator;
- Exceptionally: by notification when the Storage Operator sends a message to a Storage User by e-mail.

2.5.5.2. Publication

Before 01 October, of each year, the Storage Operator will publish indicative values of the Correction Factors related to Maintenance for the following year on his website.

Each Month before the 20th, the Storage Operator shall publish Correction Factors common to all Storage Users for as far as they are known, for the following six Months, or up to the end of the Storage Year.

Intermediate changes to the published values are possible, but no later than 2 hours before the change becomes effective.

2.5.5.3. Notification

The Correction Factors and the Real Capacity are communicated to Storage Users by Electronic Data Platform for Storage.

2.6. OPERATING MODE SWITCHING PROCEDURE

2.6.1. General

The Storage Installation can be in one of the following Operating Modes: Injection, Stop or Withdrawal. Using the Nominations of the Storage Users, the Storage Operator determines the Operating Mode of the Storage Installation. The Switch of the Operating Mode is an onerous and time-consuming operation, and requires special safety precautions (Storage Installation of Loenhout is a Seveso installation). Due to the impact of the number of Switches on the behaviour of underground installation, the Storage Operator has to limit the number of guaranteed Switches in the Storage Year. The Storage Operator when switching will reasonably ensure a maximum transparency and comfort for the Storage Users.

2.6.2. Injection Season – Withdrawal Season

The Storage Installation of Loenhout is built as a Storage Installation for seasonal operations, i.e. that in principle Injection takes place during the summer months and Withdrawal takes place during the winter months.

The start and end of the Injection Season and Withdrawal Season are communicated by the Storage Operator every year before the start of the new Injection Season. By default the Injection Season starts on 01 April, and the ends on 30 September. By default the Withdrawal Season starts on 01 October and ends on 31 March.

For technical and/or economic reasons, the Storage Operator may decide to adapt the start and end date of the Injection and Withdrawal Season. Where this is the case the Storage Operator shall inform the Storage Users of this change 1 month in advance.

2.6.3. Switching Operating Mode

Based on the Seasonal Storage Program of Storage Users, the Storage Operator will compile an Injection/Withdrawal profile and indicate a possible Switch.

Based upon the aggregated Daily Storage Notice's of Storage Users, the Storage Operator shall decide whether to switch to another Operating Mode.

The decision to effectively switch to another Operating Mode is only guaranteed:

- if the Nomination of a Storage User indicating a Switch has been notified at least one (1) full Day before the Day being evaluated;
- if it is obvious from the Nominations at the Installation Point of the Storage Installation that the physical gas flow will remain in the new Operating Mode for at least 24 hours;
- if the Storage Operator's simulations confirm that the Switch is feasible;

Under all other circumstances, the decision to switch is made within the limits of operational possibilities and subject to a guarantee of safe operation.

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In special circumstances and on a reasonable endeavours basis only, the Storage Operator will consider reducing the switching period of 24 hours.

The Storage Operator will publish its decision, under the conditions here above, to Storage Users on the Electronic Data Platform for Storage.

2.7. GAS IN STORAGE

A separate Gas In Storage account is assigned to the Storage User in accordance with its different Storage Services active that include Storage Volume (unless specified otherwise). Storage Operator will provide Storage User with the necessary Nomination Code(s) for accessing its Gas In Storage account(s).

2.7.1. Gas In Storage lower limit

The level of Gas In Storage (expressed in energy) for a particular Storage User should not be a negative value. If the Gas In Storage (expressed in energy) would become negative, the following provisions shall apply:

- based on the Steering Allocation of the GIS, Storage Operator can refuse the Withdrawal and/or CTP Nominations at the expense of the Storage User;
- at any moment in time, the Storage Operator may apply the Run-off conditions as set out in paragraph [2.7.32-7.3](#).

2.7.2. Gas In Storage upper limit

Normally the level of Gas In Storage (expressed in Energy) for a particular Storage User should not exceed the Real Storage Volume of this Storage User. If the Gas In Storage of the Storage User would exceed the Real Storage Volume, the following provisions shall apply:

- based on the Steering Allocation of the GIS, Storage Operator can refuse the Injection and/or CTP Nominations at the expense of the Storage User;
- based on the Validated Allocation of the GIS, Storage Operator will determine for each Gas Day the maximum exceeding capacity above the Subscribed Storage Volume, if any. Storage Operator will charge monthly the sum of the maximum exceeding capacity for each Gas Day in the Month.
- at any moment in time, the Storage Operator may apply the Run-off conditions as set out in paragraph [2.7.32-7.3](#).

2.7.3. Gas In Storage Run-off conditions

2.7.3.1. General

The Run-off rule is applicable in the following cases:

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- When the level of Gas In Storage of the Storage User, at the end of a Service Period exceeds the remaining Subscribed Storage Volume that is at the disposal of this Storage User for the following Service Period;
- When the level of Gas In Storage of the Storage User becomes negative;
- When a Storage User exceeds his Subscribed Storage Volume during the Storage Year;
- When Storage User Services have ended due to termination of rights:
 - In this case the Storage User will keep an extended GIS account during a Run-off period or until his account is settled;
 - During this period, he has temporary Storage rights and the right to perform Commodity Transfer(s);
 - The GIS account of the Storage User will expire after the Run-off gas is transferred to the operations account of the Storage Operator at the last hour of the validity period of his GIS account.

The default Run-Off period is minimum five (5) Days and maximum two (2) months. The Run-off period starts at the moment the exceeding takes place. The Storage Operator shall be entitled to limit the Run-off period to a minimum five (5) Days as from notification to the Storage User but in following cases (amongst others but not limited to):

- there is a risk of exceeding the maximum or minimum Operating Permits concerning the volume in Storage.
- the Real Capacities for the other Storage Users risk to be influenced.

2.7.3.2. Exceeding GIS upper limit(s)

If the Storage User's level of Gas In Storage exceeds his Subscribed Storage Volume (excess), the Storage Users can during the Run-off period:

- if the Storage User has still Withdrawal rights, withdraw the excess of Natural Gas at the Installation Point within his Real Withdrawal Capacity,
- or, organize a Commodity Transfer with another Storage User.

If, at the end of the Run-off period, the Gas In Storage in the Run-off account is still not equal to zero, the Storage Operator will:

- either transfer the remaining excess of Natural Gas to the GIS account of the Storage Operator and settle in cash the withdrawn Natural Gas at 95 % of the Gas Price Daily Sell (GPDSell) for the concerned Run-off period, reduced by the expenses made by the Storage Operator;
- either, only apply in cash the above premium of 5% on the GPDSell for the concerned Run-off period, increased with the expenses made by the Storage Operator.

2.7.3.3. Exceeding GIS lower limit(s)

If the Storage User's Gas In Storage is negative (shortfall), the Storage User can during the Run-off period:

- if the Storage User still has Injection rights, inject the necessary Natural Gas at the Installation Point within his Real Injection Capacity,
- or, organize a Commodity Transfer with another Storage User.

If, at the end of the Run-off period, the Gas In Storage in the Run-off Account is still not equal to zero, the Storage Operator will:

- either, transfer the remaining shortfall of Natural Gas to the GIS account of the Storage Operator and, settle in cash the injected Natural Gas at 105 % of the Gas Price Daily Buy (GPDbuy) for the concerned Run-off period, increased with the expenses made by the Storage Operator.
- either, only apply the above premium of 5% on the GPDBuy for the concerned Run-off period, increased with the expenses made by the Sstorage Operator.

2.7.4. Gas In Storage on 1st of November (“~~GIS 90%-Filling Target~~ rule”)

Storage User, having subscribed Seasonal Storage Services, ~~shall use its reasonable endeavour to~~must ensure that its Gas In Storage at the 1st November ~~may is not be~~ less than ~~90%the Filling Target applied to of the Storage User’s Real-Seasonal~~ Storage Volume that he has at his disposal. In case Storage User is not able to comply with the ~~90% Filling Target~~ rule the provisions of attachment F of the ACS are applicable, i.e. Storage User will lose a part of his Services while still paying at least the Regulated Tariffs for the remaining Service Period.

2.7.5. Gas In Storage trajectory (“~~Filling Trajectory~~ rule”)

Between May and February the next year, Storage User having subscribed Seasonal Storage Services shall ensure that its Gas In Storage is not less than the Current Filling Trajectory Target applied to his Seasonal Storage Volume.

In case Storage User does not comply with the Filling Trajectory rule, Storage User will pay a daily penalty (“Filling Trajectory Penalty”) calculated as follows

$$FTP_d = \max(0, 1 * (CFIT * SSV - EGIS_h) * EGSI; 0)$$

with:

FTP_d Filling Trajectory Penalty for Gas Day d

EGIS_h Energy in GIS for the last hour of Gas Day d expressed in MWh

CFIT Current Filling Trajectory Target for Gas Day d

SSV Seasonal Storage Volume

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For the avoidance of doubt, when a Storage User has Seasonal Storage Services and Additional Storage Volume Service, the Storage Operator will always consider that the Storage User injects Natural Gas to fill its Seasonal Storage Volume first before starting to fill its Additional Storage Volume. On the contrary, when the Storage User withdraws Natural Gas, the Storage Operator will always consider that the Storage User empties its Additional Storage Volume first before starting to withdraw from its Seasonal Storage Volume.

~~2.7.5. Gas In Storage on 15th of February (“GIS 30% rule”)~~

~~The Gas In Storage during the Withdrawal Season before the 15th of February should not be less than 30% of the Real Storage Volume that the Storage User, having subscribed Seasonal Storage Services, has at his disposal. This level of 30% is reduced by 0.085% for each degree day above 1942, as from 1 October of the previous year.~~

- ~~• The number of degree days of a certain Gas Day is calculated as the difference between 16.5°C and the Realised Temperature. If this difference is less than 0, then the number of degree days for the Gas Day in question is equal to 0.~~
- ~~• The Storage Operator publishes the sum of the number of degree days as from 1st October on its website.~~

~~In case the Storage User does not comply with this rule the Storage Operator reserves the right in order to maintain the underground performance to temporarily compensate the effects caused by the Storage User’s GIS being not compliant with the GIS 30% rule, and apply the Run-off conditions for exceeding GIS lower limits (as set out in paragraph 2.7.3.3) to the amount of Compensation Gas (being the difference with lowest GIS level of the Storage User and its GIS level required under the conditions of the GIS 30% rule)~~

- ~~• At any moment the Storage Operator is entitled to reduce the Real Withdrawal Capacity of the Storage User whenever the needed underground performance of the Storage Installation is at risk.~~
- ~~• The Storage Operator will inform the Storage User of its non-compliance with the GIS 30% rule and implication of the temporary compensation of the effects by the Storage Operator.~~

2.7.6. Extended Gas in Storage

2.7.6.1. General

In order to maintain or improve the performance of the Storage Installation, or to extend the Capacity for Gas In Storage in the future, Storage Operator may be required to (temporary) fill the Storage Installation to a certain level (“Extended GIS”) in order to reach a certain pressure or gas depth in the Underground Reservoir.

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2.7.6.2. Filling the Extended GIS

For the above purpose(s) Storage Operator can fill-up the necessary Storage Volume at its own behalf or can request the Storage User to participate to such filling. In the latter case Storage User shall confirm in writing before the 1st July of the concerned Storage Year, its amount of participation (firm commitment) to the Extended GIS by means of its Injection Services to the Storage Operator.

In case the Storage User has notified its firm commitment related to the Extended GIS filling to the Storage Operator within the aforementioned period, the corresponding ~~Conditional~~ Storage Volume, if any, shall be made available to the Storage User by such date for the balance of the Storage Year or for a predefined period, as will be notified in due course by the Storage Operator.

2.7.6.3. Emptying the Extended GIS

Because of the temporary character of the Extended GIS, the corresponding Gas will be entirely or partially emptied during the Withdrawal Season of the concerned Storage Year, either by the participating Storage User (for its part) or the Storage Operator (only for its part). The additional ~~Conditional~~ Storage Volume that was available to the Storage User for the Extended GIS filling, if any, will be withdrawn at the end of the concerned Storage Year or at the end of the predefined period.

Without prejudice to Storage Emergency as stipulated in Attachment G of the Access Code for Storage, the Storage Operator shall, in exceptional circumstances due to, amongst others the Underground Reservoir of the Storage Installation, have the right to (i) annul the Extended GIS by means of a notification to the Storage User and (ii) require the Storage User to withdraw Natural Gas from the Storage Installation, within a reasonable period of time, until a secure volume has been reached in the Storage Installation.

2.7.7. Gas In Storage and Withdrawal rights in case of SoS Emergency

(as defined in the Security of Supply on the Transmission Grid)

Storage Operator refers to the provisions in Attachment 2 of the Standard Storage Agreement, article 12.2.

2.8. MAINTENANCE & TESTING PROCEDURES

2.8.1. General

The Storage Operator, acting as a Reasonable and Prudent Storage Operator, has the right to limit or interrupt the Storage Services because of Maintenance to the Storage Installation.

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The Storage Operator must organise Maintenance to limit Capacity constraints as much as possible. Consequently, the Storage Operator will schedule the Maintenance at the Injection equipment wherever possible during the Withdrawal Season. Conversely, the Storage Operator will schedule the Maintenance on the Withdrawal equipment wherever possible during the Injection Season.

As a consequence the Injection Capacity during the Withdrawal Season will on average have a reduced Real Injection Capacity and the Withdrawal Capacity during the Injection Season will on average have a reduced Real Withdrawal Capacity.

2.8.2. Yearly Program

Each calendar year before 30th of September, the Storage Operator shall publish a yearly Indicative Maintenance Program on its website. This yearly Indicative Maintenance Program details the Maintenance periods and the consequences on the Real Injection Capacity and Real Withdrawal Capacity.

Storage Users have a period of 14 Days to report their observations on the said program. Wherever possible, the Storage Operator shall take these observations into account.

2.8.3. Maintenance planning changes during year

The Storage Operator, acting as a Reasonable and Prudent Storage Operator, has the right to shut off or reduce the Capacities by reason of Maintenance to the Storage Installation or any part thereof. Such a shut-off or reductions shall be limited wherever reasonably possible and shall only be done after giving notice to the Storage User at least ten (10) Business Days in advance, except in case of Emergencies and in case of unforeseen Maintenance.

In case of shut-off or reduction, as referred to above, the Storage Operator shall notify the Storage User of the MFI, MFW during such a shut-off or reduction via the Electronic Data Platform for Storage.

2.8.4. Default limitations during Withdrawal and Injection Season

In order to give the Storage Operator the possibility to maintain the Storage Installation:

- During the Withdrawal Season, the Injection Capacity can be limited by default to 50% of the total Subscribed Injection Capacity. This will be notified to the Storage User by means of the MFI.
- During the Injection Season, the Withdrawal Capacity can be limited by default to 40% of the total Subscribed Withdrawal Capacity. This will be notified to the Storage User by means of the MFW.

Upon request of Storage User(s), Storage Operator may, on a reasonable endeavors basis, consider to move (in time) maintenance in collaboration with the other Storage

Users. Any change performed by the Storage Operator under this provision cannot lead to any related claim by a Storage User afterwards.

2.8.5. Withdrawal and Injection Tests

The Storage Operator is entitled to perform Capacity Test(s) during the Injection Season and during the Withdrawal Season, subject to a written notification, sent by e-mail with a notification time of at least two (2) weeks before the start of the Capacity Tests. The Storage User shall, within the limits of its Real Injection Capacity, Real Storage Volume and Real Withdrawal Capacity, cooperate to these Capacity Tests by nominating the quantities requested by the Storage Operator at the requested time.

However, the Storage Operator shall, acting as a Reasonable and Prudent Storage Operator, minimize the consequences of these Capacity Tests for the Storage User, with regard to, among others, the timing of such Capacity Tests.

3. GAS QUALITY REQUIREMENTS

3.1. PURPOSE AND APPLICATION

3.1.1. Purpose

The purpose of this section is to specify how the Quality Requirements for Natural Gas to be injected, stored and withdrawn are established and updated in case of amendments.

3.1.2. Application

The basic principles in this procedure apply:

- to the Natural Gas delivered by the Grid Users at the Installation Point;
- and, to the Natural Gas redelivered by the Storage Operator at the Installation Point.

The Installation Point is located at the interface Storage System/Transmission System. Consequently, the Quality Requirements for H-Gas are applicable. These Quality Requirements for H-Gas are set out in Attachment D2 of the Access Code for Storage.

The applicable Quality Requirements for the Storage Installation are also published on the Storage Operator's website. They can be overruled by the Storage Operator due to the prevailing conditions or forecasted conditions as set out in paragraph 3.2, in which case the Storage User shall be notified as soon as possible.

3.2. TYPES OF QUALITY REQUIREMENTS

The Quality Requirements are determined by the specifications and requirements specific to the Storage Installation and adjacent Transmission System.

3.2.1. Energy specifications

The energy specifications of Natural Gas are specified by 2 parameters:

- the Gross Calorific Value, expressed in kWh/(n)m³;
- the Wobbe, expressed in kWh/(n)m³.

For both, a lower and upper limit is specified.

3.2.2. Chemical specifications

The chemical specification of the Natural Gas is specified by defining the maximum permissible content of a number of chemical elements that can cause adverse effects on both the Underground Reservoir and the aboveground Storage Installations as well as on the Transmission System.

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- maximum hydrogen sulphide content;
- maximum CO₂ content.

3.2.3. Impurities specifications

The impurities are specified by the maximum permissible content for a number of substances alien to Natural Gas, such as:

- maximum dust content,
- maximum water content.

3.2.4. Physical specifications

The physical specifications are specified by a number of preconditions to be fulfilled at the Installation Point for allowing the Storage Installation to function. A lower and upper limit is set for the following physical specifications:

- temperature,
- pressure.

3.2.5. Quality Requirements Injection

The Quality Requirements for Injection in the Storage Installation have been defined based upon the following elements:

- Geographical location of the Storage Installation
- Special requirements for the Storage Installation

Because of the geo-technical characteristics of the Underground Reservoir, in addition there are a number of specific requirements relating to Natural Gas composition (limiting the carbon dioxide content specifications in the Natural Gas to be injected) and other requirements (limiting the dust content specifications).

Because of the technical equipment, there are some additional physical limitations (pressure, temperature of the Natural Gas) that have to be respected.

All Quality Requirements are published on the Storage Operator's website.

The Transmission Operator shall make his best effort to ensure that the Natural Gas that is transported to the Storage Installation complies with the given Quality Requirements. Notwithstanding the above, the Storage Operator reserves the right in the exceptional cases in which the Natural Gas brought to the Installation Point does not comply with the quality criteria, to refuse the Injection completely or in part in accordance with the operating rules set out in these Operating Procedures.

3.2.6. Quality Requirements Withdrawal

The Quality Requirements for Withdrawal from the Storage Installation are defined based upon the following elements:

- Geographical location of the Storage Installation
- Special requirements for the Storage Installation

There are no special requirements, specific to the Storage Installation, applicable to Withdrawal of Natural Gas. The Natural Gas being withdrawn must satisfy the general Quality Requirements for the H-grid.

3.3. GAS QUALITY DEFICIENT GAS

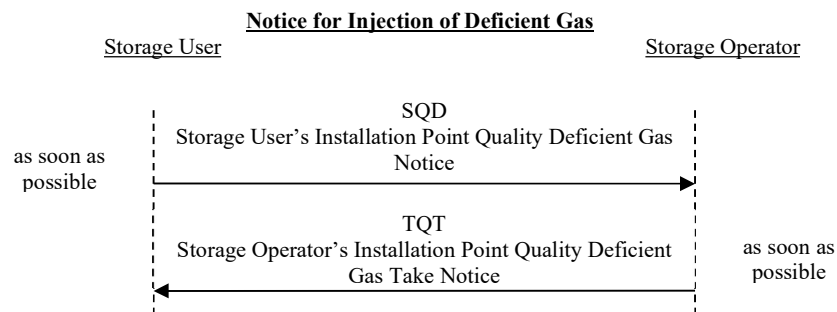
3.3.1. General

These procedures describe the different actions that are to be taken by the Storage Operator and the Storage User if the Natural Gas, which is delivered by the Grid Users or redelivered by the Storage Operator, is deficient. The details of the Quality Requirements at the Installation Point are published on the Storage Operator's website.

3.3.2. Procedure in case of Injection of Deficient Gas

If the Transmission Operator sends a notice to the Grid User that the Natural Gas which is to be delivered at the Installation Point is deficient, the Grid User sends a notice to the Storage User to inform it of this. Then the Storage User sends a notice to the Storage Operator to inform it that the Natural Gas that is to be delivered is deficient. Based upon the notice and based upon the historical Natural Gas supplies, the Storage Operator will determine to what extent the Deficient Gas supply can be accepted and confirm this to the Storage User.

The diagram set out below outlines the notices used between the Storage User and the Storage Operator relating to Deficient Gas delivery at the Installation Point. The first notice comes from the Storage User (SQD notice). The Storage Operator then replies by sending a TQT notice.



Based on version approved by the CREG on ~~16 July 2021~~

Applicable as of ~~20 July 2021~~

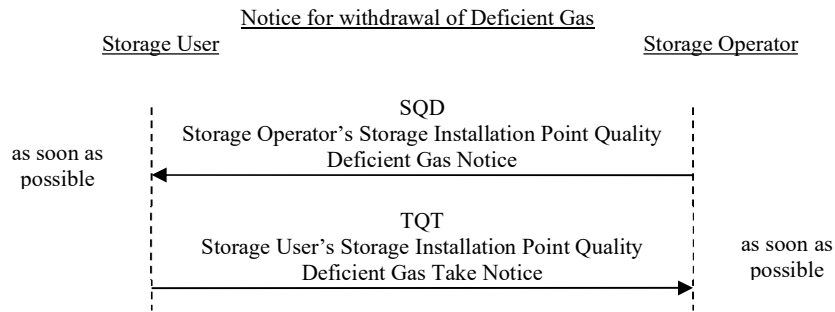
The Injection Nominations will be adapted 2 hours after the hour of sending the TQT notice (full hour + 2). The reduction will be made based upon the Storage Operator's TQT.

In Emergencies, in order to ensure the quality of the Gas in the Underground Reservoir, the Storage Operator will reduce the Injection Nominations in a shorter term.

3.3.3. Procedure in case of redelivery of Deficient Gas

If the Storage Operator notes that the Natural Gas that is redelivered at the Installation Point with the Transmission System is deficient, it shall immediately notify Storage Users. The Storage Users notify their Grid Users. The Grid Users notify the Transmission Operator, who evaluates to what extent the Deficient Gas can be accepted.

The diagram set out below outlines the notices used between the Storage User and the Storage Operator relating to the redelivery of Deficient Gas at the Installation Point. The first notice comes from the Storage Operator (SQD notice). The Storage User then replies by sending a TQT notice.



The Withdrawal Nominations will be adapted 2 hours after the hour of sending the TQT notice (full hour + 2). The reduction will be made based upon the Storage User's TQT. In Emergencies, in order to guarantee the integrity of the Transmission System, the Storage Operator will reduce the Withdrawal Nominations in a shorter term.