ACCESS CODE FOR STORAGE

FOR THE STORAGE INSTALLATION OF LOENHOUT

1. INTRODUCTION

1.1. Purpose

This Access Code for Storage consists of a standard set of terms and conditions governing regulated access to the Storage Services offered by Fluxys Belgium (the Storage Operator) to any Storage User using the Storage Installation operated by Storage Operator in Loenhout. The Access Code for Storage is a document that is legally prescribed by the Code of Conduct.

The purpose of the Access Code for Storage is to define the set of rules and procedures governing the Storage Services offered by Storage Operator to Storage Users at the Storage Installation. In addition to being governed by the Access Code for Storage, the Storage Services offered by Storage Operator to any Storage User at the Storage Installation shall be subject to the terms and conditions set out in the Standard Storage Agreement entered into between Storage Operator and any such Storage User (the *SSA*).

1.2. Scope

This Access Code for Storage shall apply to all Storage Users subscribing for the Storage Services from Storage Operator.

1.3. Definitions

Unless given any different meaning in this Access Code for Storage, any capitalised term in this Access Code for Storage shall have the meaning given to it in the Glossary of Definitions, in Attachment A of this Access Code for Storage.

1.4. SEVERABILITY

The invalidity of any provision of this Access Code for Storage or of any schedule, attachment, or part of a schedule or attachment does not affect the validity of the Access Code for Storage in its entirety. If any provision of this Access Code for Storage is held to be invalid or unenforceable, then such provision shall (so far as it is invalid or unenforceable) be given no effect and shall be deemed not to be included in this Access Code for Storage but without invalidating any of the remaining provisions of this Access Code for Storage. Storage Operator shall then consult any Storage User in accordance with the applicable regulation and legislation in order to replace the invalid or unenforceable provision by a valid and enforceable substitute provision the effect of which is as close as possible to the intended effect of the invalid or unenforceable provision and integrate such modification into this Access Code for Storage.

1.5. STATUS AND COHERENCE OF THE ACCESS CODE FOR STORAGE

1.5.1. Consultation and submission of the Access Code for Storage

Pursuant to the Code of Conduct, approval of the Access Code for Storage (first version and its amendments) takes place as follows(*):

1) the Storage Operator must consult the market;

2) the Storage Operator must submit the proposal of the Access Code for Storage to the formal approval of the CREG;

3) CREG must make a decision on the content of this proposal.

(*) Notwithstanding the procedure set out here, the Storage Operator reserves the right to introduce minor changes (such as typos) without prior consultation of Storage Users. These minor changes shall be formally reported to the Storage Users and shall also be published on the website www.fluxys.com.
The Storage Operator shall inform CREG of the minor changes and the arguments for introducing these changes unless the CREG requests a formal approval.

1.5.2. Publication of the status of the Access Code for Storage

The Storage Operator shall inform the Storage Users of the CREG's decision.
The changed version of the Access Code for Storage and the date from which this version shall apply, shall be communicated by the Storage Operator to the Storage Users by means of a publication on the website www.fluxys.com.

The applicable version of the Access Code for Storage is always available on the website www.fluxys.com. Moreover, each version is given a unique version number.

1.5.3. Interpretation of the Access Code for Storage

In this Access Code for Storage:

1) all references to a *clause*, unless specified otherwise, are references to a *clause* in this Access Code for Storage; references to a *paragraph* in a Section are references to a *paragraph* in the same Section in this Access Code for Storage, and references to a *Attachment* are references to a *Attachment* in this Access Code for Storage. The attachments constitute an integral part of this Access Code for Storage.

2) all terms and names are to be interpreted according to the "Glossary 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 the Access Code for Storage.

4) any reference to a statute, associated act, regulation, rule, delegated legislation or decree, is issued to the same one as amended, modified or replaced over the course of time, and to any associated act, regulation, rule, delegated legislation or decree among them.

5) references to time, unless specified otherwise, are references to local Belgian time. References to Day, Month and year, unless specified otherwise, are references to a day, month and year of the Gregorian calendar, respectively.

6) The description of rules, conditions and provisions only relates to the Storage Services offered at the Storage Installation.

1.6. STRUCTURE OF THE ACCESS CODE FOR STORAGE

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ATTACHMENT B	**Services fee**
ATTACHMENT C	**C1. Subscription & allocation of services | general** **C2. Subscription & allocation of services | primary market** **C3. Subscription & allocation of services | secondary market**
ATTACHMENT D	**D1. Operating procedures** **D2. Specific Requirements**
ATTACHMENT E	**Metering and test procedures**
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ATTACHMENT A – Glossary of definitions

Unless the context requires otherwise, the capitalized terms and names used in this Access Code for Storage shall have the meaning given in Appendix 3 of the Standard Storage Agreement.

ATTACHMENT B – Services Fees

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1 INTERPRETATION OF THE ATTACHMENT B

In this Attachment:

- 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;
- all terms and names are to be interpreted according to the list of definitions in Attachment A of the Access Code for Storage;
- 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;
- the description of rules, conditions and provisions only relates to the Storage Services.

2 SERVICES FEES

2.1 Monthly Service Fee for Standard Bundled Units

The Monthly Service Fee for Standard Bundled Units equals:

- the yearly Tariff for one (1) Standard Bundled Unit as specified in the Regulated Tariffs,
- multiplied by the number of Standard Bundled Units subscribed in accordance with both the procedures set out in Attachment C of the Access Code for Storage and the confirmation form(s) of the Storage Users,
- multiplied by the number of Days in the considered Month,
- divided by the number of Days in the considered year.

2.2 Monthly Service Fee for Additional Services

In case the Storage Operator offers Additional Services, the Monthly Service Fee for Additional Services equals:

- the yearly Tariff for one (1) Additional Service as specified in the Regulated Tariffs,
- multiplied by the amount of Additional Services subscribed in accordance with both the procedures set out in Attachment C of the Access Code for Storage and the confirmation form(s) of the Storage Users,
- multiplied by the number of Days in the considered Month,
- divided by the number of Days in the considered year.

2.3 Monthly Service Fees Transfer of Gas in Storage (GIS-transfer)

The Monthly Service Fee for the transfer of GIS equals:

- the Tariff for one transfer of GIS as specified in the Regulated Tariffs,
- multiplied by the number of Transfers of GIS in which the Storage User was a party during the considered Month.

2.4 Monthly Service Fees exceeding Gas in Storage (GIS-exceeding)

The Monthly Service Fee for the exceeding of GIS equals:

- the yearly Tariff for Storage Volume as specified in the Regulated Tariffs,

- multiplied by the amount of GIS-exceeding in accordance the procedures set out in Attachment D1 of the Access Code for Storage.
- multiplied by the number of Days in the considered Month,
- divided by the number of Days in the considered year.

2.5 Monthly Service Fees Transfer of Capacity

The Monthly Service Fee for the transfer of Capacity (assignment) of Storage Service(s) on the Secondary Market equals:

- the Tariff for one (1) transfer of Capacity (assignment) as specified in the Regulated Tariffs,
- multiplied by the number of transfers of Capacity (assignments) in which the Storage User was a party during the considered Month.

The additional Monthly Service Fee in case of assignments of Storage Service(s) on the Secondary Market done by Storage Operator on behalf of the Storage User equals to:

- the Tariff for one transaction made by Storage Operator on behalf of the Storage User,
- multiplied by the tariff of the Storage Service sold.

This additional Monthly Service Fee is invoiced to the seller.

2.6 Monthly Service Fee for the DAM/NNS Service

The Monthly Service Fee for the Day Ahead / Non Nominated Service consists of the sum of the daily Service Fees of the DAM/NNS Service of all Days of the considered Month, as set out in Attachment D1 of the Access Code for Storage, added with the monthly membership Fee for the Day Ahead / Non Nominated Service.

The daily Service Fee for the Day Ahead / Non Nominated Service, for each Day equals:

- the yearly Tariff for respectively Firm Injection Services or Firm Withdrawal Service(s) as specified in the Regulated Tariffs,

- divided by the number of Days in the considered year,
- multiplied by, for each Day, the maximum quantity of the Day Ahead / Non Nominated Service that was used during the considered Day.

The monthly membership fee for the Day Ahead / Non Nominated Service equals:

- the Tariff one year membership as specified in the Regulated Tariffs,
- Multiplied by the number of Days in the considered Month,
- Divided by the number of Days in the considered year.

2.7 Monthly Service Fee for complementary assistance

The Monthly Service Fee for complementary assistance by the Storage Operator on request of the Storage User wishing to receive complementary assistance with the framework of insurance and/or financial reporting equals:

- the Tariff for one performed Day of assistance as specified in the Regulated Tariffs,
- multiplied by the number of performed Days by Storage Operator during the considered Month.

3 COMMODITY ELEMENT

The Commodity Element, accounted for as GIK or GIC as the case may be, is expressed as a percentage of the Withdrawal and Injection Allocations (except for the Allocations reverse to the Operating Mode) in accordance with the Regulated Tariffs.

At the end of the Month there is a Settlement based on the Energy Allocations, taking into account the actual Own Consumption. The total Gas in Kind Settlement per month is limited to twice (2) the amount of Gas In Kind that the Storage Operator already took off during that month. Should the actual Own Consumption be higher, the surplus of Own Consumption is transferred to the following Month.

4 SETTLEMENT FEES

4.1 Run off Settlement

In case the Storage Operator has to buy Natural Gas for the account of the Storage User, 105 % of the Gas Price Daily Buy for the concerned period, increased with the expenses made by the Storage Operator shall be due by the Storage User.

In case the Storage Operator has to sell gas for the account of the Storage User, 95 % of the Gas Price Daily Sell for the concerned period, reduced by the expenses made by the Storage Operator shall be reimbursed to the Storage User.

4.2 Emergency Settlement

In Emergency cases, the Storage Operator may use the Gas stored by the Storage User. These emergency cases cover two types of situations:

- SoS Emergency in the transmission network whereby the Storage Operator has to provide assistance to the Transmission Operator,
- Storage Emergency of the Storage Installation itself;

This Gas taken from the Storage User by the Storage Operator will be settled in kind or in cash. In case the Settlement is performed in cash, the average ZIG over the period 30 days starting 15 days before the Day of the event will be taken into account.

ATTACHMENT C1 – Subscription and allocation of services | general

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1. Introduction

1.1. Interpretation of the attachment C1

In this Attachment:

1) all references to a *clause*, unless specified otherwise, are references to a section 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.

1.2. Scope of the attachment C1

The conditions of this Attachment apply in respect of the offering of regulated Services by the Storage Operator on the Primary Market.

The service offer is in line with the provisions of article 15.2 of the European Regulation 715/2009.

2. Services

2.1. Service Offer

2.1.1. Different Service terms

Following Storage Service terms can be offered by the Storage Operator. Accordingly Storage Service can be subscribed by a Storage User and are allocated by the Storage Operator for the respective terms:

1. Yearly Term Storage Services ("YTS") are allocated for a Service Period of one (1) whole Storage Year;
2. Long Term Storage Services ("LTS") are allocated for a Service Period ranging from two (2) up to ten (10) whole Storage Years.
3. Short Term Storage Services ("STS"), as provided by the Storage Operator, are allocated for a Service Period shorter than one (1) Storage Year.

2.1.2. Standard Bundled Unit (SBU)

On the Primary Market, the Storage Operator offers Withdrawal services, Storage Volume services, and Injection services under the form of Standard Bundled Units.

Composition of the SBU for all Service terms

Nature	Injection [m³(n)/h]	Storage volume [MWh]	Withdrawal [m³(n)/h]
Firm	0,85294	25,07924	1,70588
Conditional	0,25588	2,04160	0,42647

The composition of the SBU is calculated by dividing the respective total Service by the total number of bundles, with a precision of 5 decimals taking into account the above-mentioned units.

2.1.3. Additional Services

During a Storage Year, in function of optimisation the Storage Installation, the Storage Operator can offer Additional Services for Injection, Storage Volume, and for Withdrawal. These Storage Services can be offered on a short term basis (e.g. daily, weekly, or monthly), or yearly, or another term with a firm and/or

interruptible/conditional nature under the form of unbundled Services or as a combined Service:

- Additional Injection Service: Capacity in replacement of available standard bundled Injection Capacity of the Storage Users for a limited duration within the Storage Year;
- Additional Withdrawal Service: Capacity in replacement of available standard bundled Withdrawal Capacity of the Storage Users for a limited duration within the Storage Year;
- Additional Storage Volume Service: Capacity in replacement of available standard bundled Storage Volume of the Storage Users for a limited duration within the Storage Year; or
- A combination of above stated Services.

2.1.4. DAM/NNS Service

The DAM/NNS Service enables Storage User that is registered as a member of the DAM/NNS Service to nominate on top of its subscribed Injection and Withdrawal Capacities.

This service, offered as an unbundled service and based upon the available day ahead capacity, is offered on an interruptible basis and can be subscribed on a yearly basis for the entire Storage Year, by returning the DAM/NNS Registration form (published on the website of Storage Operator) duly signed. The allocation rules are defined in attachment D1 of the ACS.

2.1.5. Transfer of Gas In Storage ("GIS-transfer")

The GIS-transfer Service allows Storage Users to transfer Gas. This exchange is done through Nomination at the Commodity Transfer Point (CTP).

This GIS-transfer is by default applicable for GIS accounts subscribed under the Standard Bundled Units. In case GIS accounts related to other Storage Services are linked to the CTP (allowing transfer of GIS), Storage Operator will describe such provisions in the Terms and Conditions when offering these Storage Services and in the Service Confirmation when allocated.

2.1.6. Service for exceeding Gas In Storage ("GIS exceeding")

The GIS-exceeding Service allows Storage Users to exceed the GIS upper limit in accordance with the corresponding provisions in Attachment D1 of the ACS.

2.1.7. Service for complementary assistance

By this service, the Storage Operator provides limited assistance (i.e. additional information and explanations) to Storage User wishing to receive on their request complementary assistance related to their quantities of Natural Gas stored in the Storage Installation.

ATTACHMENT C2 – Subscription and allocation of services | Primary Market

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1. Introduction

1.1. Interpretation of the Attachment C2

In this Attachment:

1) all references to a *clause*, unless specified otherwise, are references to a section 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. Service Allocation and Subscription on the Primary market

This section applies to all Services sold through regulated Services and describes the rules that are applicable for the Allocation of Storage Services and describes the conditions for requesting information about the availability and tariff of such Storage Services and for subscribing to Storage Services on the Primary Market by Storage Users or Participants, as the case may be.

These conditions apply in respect of the Service Subscription of Services offered by the Storage Operator on the Primary Market.

2.1. Service allocation process

2.1.1. Allocation Calendar

Storage Operator can offer its Storage Services through Allocation Windows (Subscription Window of Auction Window). Unsold Storage Services offered previously via an Allocation Window, can be offered on a First Committed First Served basis.

On a regular basis Storage Operator will publish on its website the planning of the Allocation Window(s) for the forthcoming Storage Service and the period(s) where subscription on FCFS basis is possible.

At least one (1) Week before the start of an Allocation Window, Storage Operator publishes on its website the Terms and Conditions for the respective Allocation Window(s) of the Storage Services. Such Terms and Conditions will specify the specific conditions for the offered Storage Services (including but not limited to the offered quantities) and the practical information applicable for a specific Allocation Window.

In case Storage Services are still available after an Allocation Window, these or other Storage Services can be offered by Storage Operator to all Storage Users either via a new Allocation Window or under the First Committed, First Served principle.

2.1.2. Access procedure

Depending on their contractual status, parties have various options for the Service Subscription.

2.1.2.1. Storage User

A Party becomes a Storage User by signing the Standard Storage Agreement (SSA) in accordance with the Code of Conduct. A request to become a Storage User can eventually, but not obligatory, be sent by a Party to the Storage Operator e-mail address info.storage@fluxys.com.

A Storage User can register to participate to an Allocation Window (Subscription Window or Auction Window) or subscribe under the FCFS principle (as the case may be) according to the corresponding Terms and Conditions.

A Storage User, which has no Services in execution, has no access to Electronic Data Platform for Storage or any services or tools specifically designed for the Participants of an Allocation Window.

2.1.2.2. Participant

A Participant is a Party who can participate to a Subscription Window or an Auction Window (as the case may be) according to the Terms and Conditions of such window.

For each Allocation window, a Party shall have the possibility to register as Participant to the respective Subscription Window or Auction Window in accordance with Terms and Conditions of such window. For the Auction Window in particular, the Participants will be invited to an explicative session about the applicable procedure before the opening date of such window.

2.1.3. Forms and information for Storage Services

2.1.3.1. SRFC - "Service Request Form for Contracting"

The SRFC is used by Participants for binding Request of Services offered under a Subscription Window or under the principle of "First Committed First Served" in order to enter into a contract for a particular Storage Service if the requested Storage Service is available and can be allocated by the Storage Operator.

If a Storage Service as a result of such request can be allocated by the Storage Operator, the Storage Service is reserved by the Storage Operator until the signing of the SCFC by the Storage User for a term as set out in the paragraph 2.4.1 step 4.

2.1.3.2. SCFC - "Service Confirmation Form for Contracting"

The SCFC is a binding confirmation between the Storage Operator and the Storage User of the allocated Storage Services by the Storage Operator which becomes a Service Confirmation.

In case of an Allocation Window (Subscription Window or Auction Window) or on a FCFS basis, Storage User will receive a SCFC in case of allocation of Storage Services as a result of the corresponding allocation.

2.1.3.3. SRFQ - "Service Request for Quotation"

The SRFQ is a document sent by Storage User stating a non-binding inquiry regarding the availability and/or pricing of Storage Services. The SRFQ is a contractually non-binding document and, consequently, no Storage Services are reserved by the Storage Operator.

2.1.3.4. SCFQ - "Service Confirmation for Quotation"

The SCFQ is a non-binding quotation by the Storage Operator for the requested Storage Services.

2.2. Rules and organization of a Subscription Window

For each Subscription Window that the Storage Operator may organize, the Storage Operator shall provide the following provisions, amongst others and not limited to, by means of a Terms and Conditions for the Subscription Window ("TCSW") and which comply with this attachment C2 of the ACS. These provisions are:

- the offered Storage Services of the Subscription Window ("Offer");
- the possible Contract Period and Start Date for the offered Storage Services;
- the opening date and closing date of the Subscription Window;
- the registration procedure for the Storage User;
- the Allocation Rules of the Subscription Window;
- the number of Rounds (as the case may be) within the Subscription Window and the applicable rules for such Rounds;
- the Subscription procedure for the Participant.

2.2.1. Requesting the Services

The Storage User can become a Participant to a Subscription Window for Storage Services by registering as a Participant in accordance with the relevant TCSW.

The Participant can submit one (1) binding Request for contracting a Storage Service during the Subscription Window.

In the corresponding SRFC, Storage Operator can ask Storage User to specify:

- a maximum amount of units of offered Storage Services, for which Participant is requesting to subscribe the Storage Services ("Maximum Request");
- a minimum lot size (expressed in multiples of Storage Services);
- a minimum amount of units of offered Storage Services under which Participant is not interested in subscribing the Storage Services ("Minimum Request");
- the contract period, respecting the minimum period and limited to the Service Term (unless specified otherwise);
- the Service Start Date and End Date;
- option to complementary services (e.g. DAM/NNS).

During the Subscription Window, only one (1) Affiliated Company may participate for a certain Storage Service. If it appears that two or more Affiliated Companies apply for the same Storage Service in the Subscription Window, the Storage Operator will exclude all concerned Affiliated Companies from the Subscription, except the highest Binding Request.

2.2.2. Service Allocation Rule

Storage Services on the Primary Market, offered through a Subscription Window organised by Storage Operator, can be subscribed and allocated in accordance with the principles outlined in this attachment of the ACS. The participation to such allocation process is open to all Storage Users having registered as Participants according to the TCSW.

By default the allocation takes place based on the following principles:

1. The priority is given to Participants who commit to subscribe the longest service duration for their Storage Services. The available Storage Services will be allocated with the Maximum Request, starting with the longest service duration followed by the second longest service duration and so forth.

2. If the aggregated total Maximum Request of Participants who committed to subscribe the Storage Services for the same service duration is lower than or equal to the Offer, the allocation is the Maximum Request.

3. If the aggregated total request of Participants who committed to subscribe the Storage Services for the same service duration is higher than the Offer, the allocation is made pro-rata the Maximum Request,taking into account its stated Minimum Request.

4. Un-fulfillment rules, where applicable, in the following order:

    a. Remaining quantities of unallocated Storage Services due to the inability to fulfil the Minimum Requests will be allocated to the pro-rata quantities of point 3 here-above;

    b. if a Minimum Request cannot be fulfilled, the Storage Operator whenever possible will try to match the highest Minimum Request which is unfulfilled with the available unfulfilled allocations, and so forth;

    c. a Minimum Request that cannot be fulfilled, will not lead to an allocation of the Storage Service.

5. For the Long Term Storage Services, the allocation of the Storage Services will be capped per Storage User to 75% of the total available capacity for Long Term Storage Services.

In line with the allocation principle outlined below, a Participant will be allocated a number of Storage Services requested, between its Minimum Request (as the case may be) and its Maximum Request.

2.3. Rules and organisation of an Auction Window

For each Auction Window that the Storage Operator organizes, the Storage Operator shall provide, amongst others and not limited to, by means of a practical Terms and Conditions for the Auction Window ("TCAW") in accordance with the attachment C2 of the ACS:

- the offered Storage Services of the Auction Window ("Offer") including the Contract Period(s) and Start Date for the offered Storage Services;
- the Registration Documents for the Storage User to submit when applying to become a Participant to the Auction Window;
- the Auction parameters that will be applied during the Auction process of this Auction Window;
- the information exchange modalities, including the fall-back procedure.

2.3.1. Registration process

2.3.1.1. Applying for registration

In order to become a Participant to the Auction Window, the Storage User shall provide the Storage Operator the required Registration Documents, as provided for in the TCAW.

These Registration Documents will be submitted for acceptance to the Storage Operator in accordance with the Registration Evaluation hereafter.

Only one (1) Affiliated Company may participate to the Auction for a certain Storage Service. If it appears that two or more Affiliated Companies intend to take part in the Auction for the same Storage Service, the Storage Operator will exclude all concerned Affiliated Companies from the Auction, except the first one to have sent the Registration Documents.

2.3.1.2. Registration Evaluation

Following review of the Registration Documents submitted by Storage User in accordance with the TCAW the Storage Operator may decide to:

(i) invite the Applicant to submit revised Registration Documents within a set time period, for review for admission as a Participant in the Auction;
(ii) admit the Applicant as a Participant in the Auction by the sending the Registration Evaluation form in schedule 2 of the TCAW;
(iii) refuse the Applicant as a participant in the Auction. In such case, both the grounds for such refusal are to be stated as well as the CREG will be informed.

The Storage Operator shall make its best efforts to notify the Applicant of such decision, within five (5) Business Days following receipt of the Registration Documents or the revised Registration documents, as the case may be.

When and if the Applicant is successfully registered by the Storage Operator as Participant to the Auction, the individual(s) appointed by the Applicant in the Power of Attorney will be accepted as Bidder(s).

In case of successful registration, a letter in accordance with the TCAW will be provided to the Participant with (i) the Auction Website address and (ii) the personal username of each Bidder required for accessing the Auction Website.

Participant shall notify Storage Operator in writing of any change in any information set forth in the Registration Documents promptly upon becoming aware of such change.

2.3.1.3. Revocation:

The Storage Operator may at any time revoke the admission of Bidder/Participant in the Auction in any of the following cases:

(i) Bidder/Participant breaches any of its obligations under the TCAW;
(ii) Bidder/Participant does not satisfy, or no longer satisfies, the requirements set in the Registration Documents.

The behavior of its Bidders will be attributable to the Participant.

The revocation of the right to participate in the Auction by the Storage Operator will be duly motivated within two (2) Business Days as well as the CREG will be promptly informed of such revocation.

2.3.2. Training and practical instructions

Without prejudice to the participation by the Bidder to the Auction, Bidders will be invited by Storage Operator to a training session preceding the Auction Window.

Finally in accordance with the TCAW, the Storage Operator shall provide the Bidder(s) the necessary practical instructions for the Auction Window.

2.3.3. Auction process

The Auction shall be conducted by the Storage Operator. The Storage Operator shall protect the confidentiality of the content of Bids submitted by each Bidder.

The information pertaining to individual Bids submitted by each Bidder during the Auction shall be accessible only to the Storage Operator and the Bidder in question.

The Auction will take place over several Round(s). If there are several Bids for the same Participant in one Round, irrespective of the number of Bidders, only the last Valid Bid

will be taken into account. The Auction is considered conclusive based on the relation between the Offer and the Demand for the Storage Service(s) of the Bidders in accordance with the Price Step rules. Once the Auction is conclusive, the Participants will be allocated a quantity at the Cleared Price in accordance with the Allocation Rules as set forth in this Attachment.

As described in this attachment, the Auction mechanism is 'Ascending Clock', where in consecutive Rounds, the price ("Round Price") at which the Bidders can submit a Bid is set by the Storage Operator in adjustable Price Steps. Subsequently a next Round is organized when the Demand exceeds the Offer.

2.3.3.1. Round events

The Round ranking number will be increased by one (1) for each new Round, with the first Round being Round 1. For each Round, the Storage Operator will publish the following information:

(i) Before the start of each Round: the Round Price is set for that Round at which the Bidder can submit a Bid;
(ii) The Opening Time and Closing Time of the current Round and the Opening Time of the coming Round;
(iii) At the latest 15 minutes after closing a Round, the Demand.

Each Round shall consist of the following events, in chronological order:

(i) The Storage Operator creates the Round;
(ii) The Storage Operator informs the Bidders of the planned Round Opening Time, the Round Closing Time and the actual status of the Round (i.e. scheduled, open, closed cancelled);
(iii) The Storage Operator sets the Round Price and informs the Bidder hereof;
(iv) The Storage Operator changes the status of the Round to 'Open', and synchronizes the Round Opening Time and Round Closing Time taking into account a Round Duration as defined in the TCAW;
(v) While the Round is 'Open', Bidders can submit their Bid(s), the last submitted Valid Bid for each Participant overwriting previous submitted Bids and being binding;
(vi) The Storage Operator verifies the validity of each Bid and notifies the Bidder whether his Bid has been accepted or rejected;
(vii) The Storage Operator changes the status of the Round to 'Closed' and synchronizes the Round Closing Time;
(viii) At the latest 15 minutes after closing a Round, the Storage Operator publishes the Demand of the Round in an aggregated manner;
(ix) The Storage Operator informs Bidders of the planned Round Opening Time and the Round Closing Time and the actual status of the Round (i.e. scheduled, open, closed cancelled).

When the Auction is conclusive,

(i) The Storage Operator shall then inform Bidders that the Auction is 'Closed' and declare such last Round to be the "Final Round".
(ii) The Storage Operator shall perform the Allocation. The result of the Allocation will be notified to the corresponding Participant individually and a SCFC, as defined in the SSA, will be sent to the Participant. For the avoidance of doubt, the sending of the SCFC has a mere informational value and is without prejudice to the binding value of the Bids made by the Participant through its Bidders.

2.3.3.2. Auction mechanism: Ascending Clock

The applicable Auction mechanism is "Ascending Clock" where in consecutive Rounds the price ("Round Price"), at which the Bidders can submit a Bid, is set by the Storage Operator in adjustable Price Steps. Subsequently a next Round is organized when the Demand exceeds the Offer. For this purpose two (2) cycles with each a different Price Step might apply. The increment of the Round Price is described in the following Price Step rules:

In the first cycle ("First Cycle"):

- The start price of the Auction (price set in the first Round of the First Cycle) is the Reserve Price which is also the lowest price at which the Bidders can submit a Bid.
- The price is increased with the Major Price Step as long as Demand is higher than Offer.
- When Demand becomes lower than Offer, the price of the previous Round is taken into account to initiate the Second Cycle with smaller price steps.
- When the Demand equals the Offer the Auction is conclusive and the price of the current Round is considered to be the Cleared Price.

In the second cycle ("Second Cycle"):

- The price is increased with the Minor Price Step as long as Demand is higher than Offer limited however to the highest set price of the First Cycle;
- When Demand becomes equal or lower than Offer, Auction is conclusive and the price of the previous Round is considered to be the Cleared Price.

2.3.3.3. Bid Requirements

Each Bidder, in accordance with the Bid Requirements in this article, may submit a Bid which will be considered as a binding and irrevocable offer subject to allocation during the last round. Each Bidder has the obligation of having placed at least one (1) valid Bid in the previous Round in order to be able to participate in the next Round.

A Bid in a Round for which the Participant is requesting to subscribe the Storage Services shall consist of a Bid Quantity**,** which shall mean a binding request for a number of unit of Storage Services at the given Round Price per unit as set by the Storage Operator and as the case may be, respecting the minimum lot size of the Offer.

A Bid Quantity:

- may not exceed the maximum Bid Quantity being equal to the Offer minus one (1) unit of Storage Service;
- may not be increased between two Rounds, except for the first Round of the Second Cycle where the Bidder will be able to submit a Bid for a maximum quantity equal to the last Round where the Demand was higher than the Offer;
- may in the Second Cycle not be lower than the lowest Bid Quantity in the First Cycle.

At a given Round Price set by the Storage Operator which:

- may not be lower or equal than the Reserve Price;
- shall be a multiple of the applicable Price Step;
- shall correspond with the Price Step rules in case the Storage Operator adapts the price at which the Bidders can submit a Bid Quantity.

For the purpose of clarity,

- A Bid Quantity of zero (0) is considered to be a Valid Bid;
- In case there is no Bid Quantity submitted by a Bidder in a certain Round, a Bid Quantity of zero (0) will be applied as the Bid Quantity for the Bidder for that Round.

During a Round, as long as the Round status is "open", the Bidder may change its Bid by submitting a new Bid that will overwrite and substitute the previous Bid, in accordance with the Bid Requirements. Once a Round is closed, no (new) Bids can be submitted and the last Bid of that Round accepted by the Storage Operator will be considered as the Valid Bid.

2.3.3.4. Bid Validation and Exclusion

In accordance with the Bid Requirements, the Storage Operator shall perform the Bid Validation. The Storage Operator verifies the validity of each Bid and notifies the Bidder via the Auction Website whether his Bid has been accepted or rejected as Valid Bid, stating the reason(s) for such rejection (as the case may be). If a Bidder can demonstrate to Storage Operator's that the invalidity of the Bid was attributable to communications issues, the Storage Operator may authorize such Bidder to re-submit its Bid by fax before the publication of the resulting Demand of that Round and the insofar as this is possible within the time schedule of the Auction.

2.3.3.5. Publication and notification

For each Round, the Storage Operator will publish the following necessary information for the good working of the Auction process as described in paragraph 2.3.3.1 Round events.

When the Auction is conclusive and the Allocation has been performed, the result of the Allocation for each Participant will be notified to the corresponding Participant and a SCFC will be sent as provided in paragraph 2.5.2.

2.3.3.6. Allocation Rules

After a Round has been closed, all Valid Bids of all Bidders in that Round are aggregated to determine the Demand. The following Allocation Rules are applicable for a Round:

- In case Demand equals the Offer for a Round,
  - The Cleared Price is the Round Price of that Round;
  - Each Participant is allocated its Bid Quantity of that Round;
- In case Demand is higher than the Offer,
  - There is no Allocation;
  - The next Round is initiated;
- In case Demand is lower than the Offer in the First Cycle,
  - the Second Cycle is initiated;
- In case Demand is lower than the Offer in the Second Cycle,
  - The Cleared Price is the Round Price of the previous Round;
  - The Allocation of the Participants is performed based on the linear interpolation algorithm defined hereunder:

a. For each Bidder, the positive delta between its Bid Quantities of the current and the previous Round is divided by the sum of the aggregated deltas of the Bidders, in order to calculate a pro rata % (percentage) for each Bidder.
b. Then, the pro rata% of each Bidder is applied to the difference between the Offer and the Demand of the current Round (being the last Round), resulting in a pro rata quantity for each Bidder.
c. Finally, the pro rata quantity for each Bidder is then added to the corresponding Bid Quantity of each separate Bidder in the current Round (being the last Round), resulting in an Allocation of each Participant.

In case that in the Second Cycle the price is reached of the last Round in the First Cycle and the Demand of that Round remains nevertheless higher than the Offer, the Allocation will be performed using the linear interpolation algorithm between the last Round of the first Cycle and the last Round of the second Cycle and the Cleared price will be the Round Price of the last Round of the Second Cycle.

2.4. Rules and organization under FCFS principle

2.4.1. Binding Requests for Storage Services

The following procedure is applicable for requests performed under the principle of "First Committed First Served":

Step 1 – Confirmation of Storage Users:

A Storage User interested in Storage Services available to the market confirms his interest in the Storage Services by sending an SRFC duly filled in accordance with the provisions for subscribing to the corresponding Storage Service term. In case of a Subscription Window, Participants to the Subscription Window must respond within an application window of thirty (30) Business Days (unless specified otherwise).

Step 2 – Allocation of Storage Services:

The Storage Operator allocates the Storage Services to Participants/Storage Users, taking into account the requests of all Participants/Storage Users. This is done in accordance with applicable Services Allocation Rules in force for the corresponding Storage Service term.

Step 3 – Confirmation of allocated Storage Services and sending the Service Confirmation Form for Contracting:

No later than ten (10) Business Days after the end-date of the Allocation Window, (unless specified otherwise), Storage Operator confirms the allocated Storage Services to Storage Users.

Step 4 – Signing the SCFC:

The Participant/Storage User signs the SCFC, and sends the duly signed document(s) to the Storage Operator within ten (10) Business Days after they were sent by the Storage Operator.

If the Storage Operator does not receive the signed document(s) within ten (10) Business Days, it has the right to release the Storage Services. Where this is the case, the Participant/Storage User is charged a fee for each unconfirmed request, as specified in the Regulated Tariffs.

Step 5 – Confirmation of signing:

The Storage Operator confirms receipt of the signed document(s) to the Storage User. As from that moment, the allocated Storage Services are considered to be *Subscribed Capacity* and the signed SCFC accepted by Storage Operator becomes an effective Services Confirmation as defined in the SSA. The Storage Operator sends a copy of the Services Confirmation(s) to the concerned Storage User.

Step 6 – Start Services:

The Storage User can start to use the Subscribed Capacity as from the Start Date of the SCFC and no earlier than two (2) Business Days after the Storage Operator has received the SCFC (and all other documents as stipulated in this paragraph) and if the signed SCFC is received less than two (2) Business Days before the Start Date of the SCFC.

2.4.2. Non-binding requests for Storage Services

Storage Users have the possibility to submit a non-binding request concerning the availability and/or pricing of Storage Services for which following procedure applies:

- Storage User sends the Storage Operator by e-mail, fax or post a Service Request for Quotation (SRFQ) for Storage Service.
- After the Storage Operator has confirmed receipt of the SRFQ, the Storage Operator prepares the answer. Storage Operator will depending on the complexity of the request, sent its response to the Storage User by a SCFQ within ten (10) Business Days after receipt of the SRFQ

If the requested Storage Services are available and the Storage User wishes to subscribe to the requested Storage Services, Storage User still must submit a Service Request Form for Contracting (SRFC) and follow the procedure as provided for in paragraph 2.4.1 or participate in an Allocation Window.

The Storage Operator reserves the right:

(i) not to examine requests that are unreasonable in nature;

(ii) to extend the response period in case the request is very complex or if the Storage Users are sending a large number of requests at the same time.

2.5. Interface rule between the Storage Installation/Transmission System

The Subscriptions to Storage Services on the Primary Market shall comply with the interface rules in force at the interconnection between the Storage Installation and the Transmission System.

3. Open Season principles

The Storage Operator refers to the Code of Conduct.

ATTACHMENT C3 – Subscription and allocation of services | Secondary Market

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1. Introduction

1.1. Interpretation of the attachment C3

In this Attachment:

1) all references to a *clause*, unless specified otherwise, are references to a section 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. Service Allocation and Subscription on the Secondary Market

2.1. Generalities

All Storage Services acquired on the Primary market may be traded between Storage Users respectively on the Secondary Market. The possible types and conditions have been specified in article 17.9 of annex 2 of the SSA.

A traded Storage Service may be traded again on the Secondary Market.

In order to acquire or trade Services on the Secondary Market, a party must be a "Storage User".

2.1.1. Secondary Market

The Storage Operator organizes the Secondary Market in such way that a Storage User has the possibility to post Storage Services that he wishes to trade (i.e. buy or sell) on the Secondary Market and that allows interested Storage Users for such Storage Service to respond to or to enter into contact with the party offering to trade Storage Services.

Regarding the Storage Services that can be traded on the Secondary Market, Storage Users have two options:

- the Storage Users can trade the Storage Services themselves via the OTC, with or without release as foreseen in article 17.9.1 point a) of annex 2 of the SSA. Where this is the case, the Storage Operator will be notified by both parties of the assignment by means of a SRFA.
- the Storage User can trade the Storage Services with partial release on the Secondary Market Platform in accordance with the terms and conditions of the Secondary Market Platform. This trade will occur with release for the assignor with the exception of the payment obligation as foreseen in article 17.9.1 point b) of annex 2 of the SSA.

2.1.1.1. Obligations of the parties to the assignment

In the event of an agreement on an assignment, the assignor or the assignee has to submit a request for an assignment of Storage Services to the Storage Operator. This request can be completed (i) electronically via the Secondary Market Platform or (ii) by using a SRFA (Services Request Form for assignment), which has to be signed by both the assignor and the assignee and in which:

1. the details of the assignment are given (which Storage Services, for what amount and for what period and the price);
2. there is a reminder that the assignment means that all rights and obligations that arise out of the Service Request Form for assignment

are assigned from the assignor to the assignee, during the assignment period;

3. the type of the assignment as described in article 17.9 of this attachment.

After receiving a Service Confirmation Form for assignment (SCFA) by the Storage Operator, both parties to the assignment have to sign the SCFA in which:

1. the details of the assignment are given (which Storage Services, for what amount and for what period and the price);
2. there is a reminder that the assignment means that all rights and obligations that arise out of the Service Confirmation Form for assignment are assigned from the assignor to the assignee, during the period of the assignment;
3. the type of the assignment as described in article 17.9 of this attachment

Both the type of assignment as well as the rights and obligations associated with the assigned Storage Services are determined in the relevant Service Confirmation(s) which are an integral part of the SSA. The document applying as a contract is the "Service Request Form for Assignment" (see 2.3.1.1)

Please note that next to the "Service Request Form for Assignment" (SRFA), the assignor and assignee can close an additional contract, where, for example, additional payments between them are defined. The Storage Operator does not take into account any additional contracts, and therefore takes into account only the Service Request Form for Assignment.

2.1.1.2. Notification and publication procedure Secondary Market Platform

The procedure for trading Storage Services on the Secondary Market Platform, in accordance with the terms and conditions of such platform, consists of:

a) a possible assignor notifies the Storage Services that he no longer wishes to use over a certain period in time;

b) a possible assignee notifies the Storage Services that he requests to use over a certain period in time;

c) the offer or the request are published on the Secondary Market Platform either anonymously or not following the preferences indicated by both the assignor and assignee;

d) The publication of the Storage Service(s) being offered is cancelled in each case upon expiry of the assignment period.

If a Storage User is interested in a trade on the Secondary Market, by selecting the trade, the interested Storage User is sent a notice with the details of the party that is responsible for trading the Storage Service and its details are sent to this party at the same time.

2.1.1.3. Functionalities

Published offers of Storage Services on the Secondary Market Platform contain:

- ✓ the Storage Service(s),
- ✓ the type of Storage Service,
- ✓ the start date of the offer or request for Storage Services,
- ✓ the end date of the offer or request for Storage Services,
- ✓ the quantity offered or requested,
- ✓ the price,(unit price),
- ✓ contact details (optional – i.e. in case the trade is not anonymous).

2.2. Allocation Rules for Services on the Secondary Market

Storage Services for trading on the Secondary Market Platform are confirmed according to the principle "*First Committed, First Served* ". The Secondary Market Platform is open for all Storage Users.

2.3. Assignment procedures

The following assignment procedures can be distinguished on the Secondary Market:

- there is the "over the counter" (OTC) Secondary Market, in which the Storage Operator is notified of the assignment without a prior publication of the Secondary Market offer *(assignment procedure 1: OTC Secondary Market*)
- there is Secondary Market Platform, provided by the Storage Operator, on which Storage Users can trade Storage Services which are published in accordance with the terms and conditions of the Secondary Market Platform.*(assignment procedure 2: Secondary Market Platform between Storage Users*)

2.3.1. Forms for Assigning Services

2.3.1.1. SRFA "Service Request Form for assignment"

The SRFA is used for a binding request by Storage Users in order to enter into an assignment for a particular Service, and will be subject to the acceptance of the Storage Operator.

2.3.1.2. SCFA "Service Confirmation Form for assignment"

The SCFA is a binding confirmation between the Storage Users having requested an assignment and the Storage Operator.

2.3.2. Acceptance of the assignment by the Storage Operator

For the Storage Services offered or requested on the Secondary Market, the Storage Operator analyses the SRFA for acceptance by following non-exhaustive criteria;

- ✓ in case of an OTC, verification if the assignee has signed a SSA;
- ✓ verification of the Storage Services subscribed to by the assignor;
- ✓ in addition, in case of no retained payment obligations:
  - verification of the debt situation of the assignor with respect to the Storage Operator. The assignor may not have any debts in relation to the Storage Operator associated with the assigned Storage Services, unless the assignee irrevocably and unconditionally undertakes to pay these debts to the Storage Operator;
  - Verification of the creditworthiness of the assignee as provided for in the SSA.

If the Storage Operator receives all the necessary documents in good time, duly signed by the assignor and the assignee, an assignment is considered to be completed by the Storage Operator.

Such completed assignment means: for the assignor, a reduction of the subscribed Storage Service(s), and for the assignee, an increase of the subscribed Storage Service(s). The assignee is entitled to nominate the first Day of the assignment period, within the Storage Service(s) assigned to it, as from two (2) Business Days before the start of the assignment period. On the first Day of the assignment period the quantities of Natural Gas nominated by the assignee can be effectively treated.

2.3.3. OTC Secondary Market (assignment procedure 1)

If parties wish to trade Storage Services directly amongst one another on the Secondary Market then the following procedure applies:

1. the assignee notifies the Storage Operator, as soon as reasonable possible, using a SRFA duly signed by both parties by e-mail or by fax of the Storage Services that are to be assigned to the assignor;

2. the Storage Operator checks whether the SRFA is complete, and sends within five (2) Business Days:
   - a confirmation of receipt, if this form is complete;
   - a request to complete it, if this form is incomplete.

3. after confirmation of receipt, the Storage Operator analyses whether the assignment of the Storage Service(s) can be accepted (see 2.4.2).

4. the assignor and the assignee are informed by mail or by fax of the result of the acceptance analysis within Ten (5) Business Days following confirmation of receipt, using a standard document:

   ✓ if the assignment is refused in full, the assignor and the assignee both receive a refusal message, that states the reason for the refusal;

   ✓ if the assignment is confirmed in full or in part, the assignor and the assignee both receive a SCFA in which the following is confirmed for each assigned Storage Service:

      - for what quantities the assignment takes place;
      - the assignment period in respect of which the assignment takes place.

5. if they agree, the assignor and assignee sign the SCFA and send it to the Storage Operator within ten (10) Working Days and no later than two (2) Working Days before the start of the assignment period, by fax or by e-mail. If the Storage Operator receives the duly signed document in good time, the assignment is completed.

2.3.4. Secondary Market Platform between Storage Users (assignment Procedure 2)

In the event agreement on a specific quantity and a specific period of the assignment can be found between the Storage Users through the Secondary Market Platform, the following steps apply:

1. both assignor and assignee send an electronic request to the Storage Operator;

2. the Storage Operator checks the request as foreseen in paragraph 2.3.2;

3. the Storage Operator confirms as soon as reasonable possible and within one (1) Business Day the result of the acceptance analysis towards the assignor and the assignee:

   - ✓ if the assignment is refused in full, the assignor and the assignee both receive a refusal message, that states the reason for the refusal;
   - ✓ if the assignment is confirmed in full or in part, the assignor and the assignee both receive a SCFA in which the following is confirmed for each assigned Storage Service:
     - for what quantities the assignment takes place;
     - the assignment period in respect of which the assignment takes place.

4. the assignor and assignee have to sign the SCFA and send it to the Storage Operator within ten (10) Working Days and no later than one (1) Business Day before the start of the assignment period, by fax or by e-mail. If the Storage Operator receives the duly signed document in good time, the assignment is completed.

5. the moment an assignment has been accepted and confirmed by the Storage Operator, the part of the offer of the assignor on the Secondary Market Platform which has been assigned, is no longer published. The assignor is then still entitled to trade its remaining Storage Services on the Secondary Market at an agreed price.

6. if the assignor should have sold specified Storage Services directly on the Secondary Market, it must warn the Storage Operator as quickly as possible. The publication of its Storage Services is only stopped when the Storage Operator has received a SCFA that has been signed by the assignor and the assignee.

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 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 (Applicability Statement 2). 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 protocol 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 2.3 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).

2.3. NOMINATION PROCEDURES

Notwithstanding the provision in paragraph 2.2.2 if for whatsoever reason Storage Operator or the Storage Users are prevented from exchanging messages using Edig@s format with AS2 protocol, fax communication will be used as a temporary fall-back solution. Storage Operator will use its reasonable endeavours to treat these fax messages like as they were sent by Edig@s format (AS2 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 the DAM/NNS 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 DAM/NNS capacity through the "DAM/NNS 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".

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 2.3.6) 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.

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 previsions 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 Fax 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 information[1] 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 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 fax.

[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, Re-nominations 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 Re-nomination. The last Re-nomination 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.

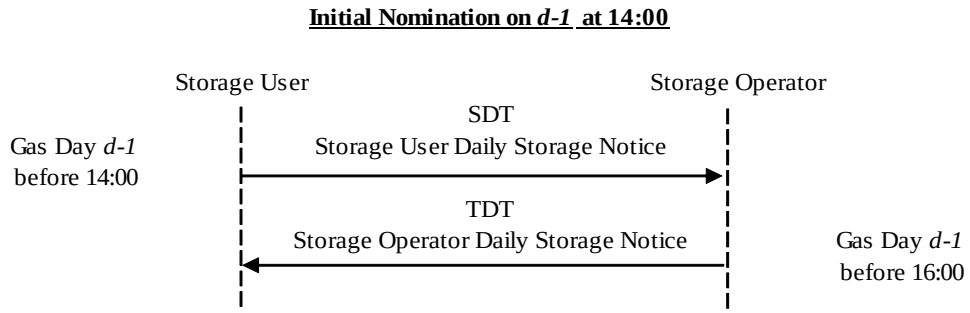
In the rest of this article, only the Nomination will be mentioned. This value has to be considered as an initial Nomination or as a last Nomination according to the above-mentioned rule.

The general procedure consists of four steps:

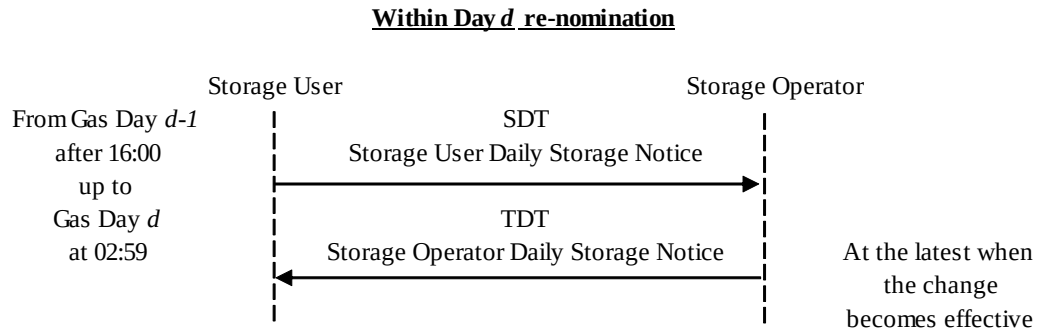
1. The Storage User sends a Storage User's Daily Storage Notice ("SDT") to Storage Operator with the Nomination at the Installation Point.
2. The Storage Operator checks validity of the message format
3. Storage Operator performs the check procedures (see paragraph 2.3.2) at the Installation Point.
4.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



The Re-nomination 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 2.3.3), 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 fax, the quantities for corresponding Confirmed Nomination for the Installation Point or Commodity Transfer Point will be zero (0) kWh/h.

The default Renominaton-rule applicable for SBU's, gives the Storage User the possibility to revise its the SDT and adapt its previous hourly Nomination(s). Such Re-nomination shall at the earliest and (two) 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 Re-nomination 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 0.

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 Re-nomination 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 send, Storage Operator will use its reasonable endeavors to send the TDT timely per fax.

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.

- 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. Day-Ahead / Non Nominated Service at the Installation Point

The Day-Ahead / Non-Nominated Service is available to the Storage User if he has subscribed this service and is applicable to the Withdrawal or Injection.

2.3.8.1. Requesting DAM/NNS by Nomination

If the Storage User has subscribed the Day-Ahead / Non-Nominated Service (DAM/NNS), he 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 non-nominated 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 DAM/NNS

$AvDamEC'_{h\ levelx}$ Available DAM/NNS Energy Capacity at hour h at the Installation Point [kWh], as the case may be for Withdrawal or for Injection.

The available DAM/NNS 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 DAM/NNS Capacities shall be performed on full hour + 2.

2.3.8.3. Allocation of the available DAM/NNS

The allocation of available DAM/NNS Capacity to the requesting Storage Users is performed by Storage Operator pro rata the requested DAM/NNS Capacity by the Storage Users 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.

$$CEN'_h = min\ (EN'_h;\ REx Cx_h * CGCV_H)$$

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.
$CGCV_H$	The conversion GCV for H-gas at the Installation Point [kWh/m³(n)]..
$REx Cx_h$	As the case may be: (see paragraph 0) ▪ either the Real Withdrawal Capacity in the Operating Mode Withdrawal (REWCWD), ▪ either the Real Injection Capacity in the Operating Mode Injection (REICIN).

- The requested DAM/NNS energy Nomination is the part of the confirmed energy Nomination above the to 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.

$$RDamEN'_h = max\ (0;(min(\sum_{users} REx Cx_h * CGCV_H;\ EN'_h)-CEN'_h))$$

with:

$RDamEN'_h$	Requested DAM/NNS 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 DAM/NNS 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 DAM/NNS under the same conditions as in paragraph 2.5.3.2.2.
    - The remaining available DAM/NNS is allocated to the Storage Users pro rata their requested DAM/NNS (RDamEN'h).

$$AccDamEN'_h = \frac{(AvDamEC'_h - RDamEN'_{h,Transmission\ Operator}) * RDamEN'_h}{\sum_{users} RDamEN'_h}$$

with:

AccDamEN'h Accepted DAM/NNS 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*[2]

The minimal Withdrawal flow ("MinWF") equals 50 000 m³(n)/h.

The minimal Injection flow ("MinIF") equals 60 000 m³(n)/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*

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

- If AWN – AIN ≥ MinWF, all Storage User's Nominations will be accepted;
- If AWN – AIN < MinWF, and AWN ≥ MinWF:
  - then all Withdrawal Nominations will be accepted;
  - the Injection Nominations are reduced proportionally to the Real Injection Capacity.
- If AWN – AIN < MinWF, and AWN < 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 ≥ MinIF, then all of the Storage Users' Nominations are accepted;
- If AIN – AWN < MinIF, and AIN ≥ MinIF, then:
  - all Injection Nominations will be accepted;
  - the Withdrawal Nominations are reduced proportionally to the Real Withdrawal Capacity.
- If AIN – AWN < MinIF, and AIN < 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

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 495 000 $m^3(n)/h$[3], 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, 295 000 $m^3(n)/h$[5], this flow regime shall only be guaranteed

[3] 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.

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 DAM/NNS 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 volume flow rate obtained by dividing the nominated hourly quantity by the $CGCV_H$, 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 DAM/NNS subscription 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 fax with the Services on which a Capacity exceeding has been detected, the Nominated hourly quantity and the Subscribed Capacity rights (Withdrawal and/or Injection).

2.3.9.3.2. Check on Real Capacities and DAM/NNS 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 DAM/NNS 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 DAM/NNS 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 DAM/NNS Capacity.
- If there is an exceeding of the sum of the Real Injection Capacity and the allocated DAM/NNS 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 DAM/NNS Capacity.
    - Calculation of the Real Injection Capacity, the Real Withdrawal Capacity and the Real Storage Volume is stipulated in paragraph 0.
    - Calculation of the DAM/NNS capacity is stipulated in paragraph 2.3.8.
    - Calculation of the Gas In Storage is stipulated in paragraph 2.4.5.6.

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.

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 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 Monthly 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 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 m^3 that flows through the metering station,
- the quantity of energy that flows through the metering station,
- 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 CO_2 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 $m^3(n)$ 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 days[4].

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;l

- 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.

[4] Corrections on the Validated Allocation can occur after Month + 20d

- 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 as follows:

$GIKinjection_{user}\ h = (EAinjection_{user}\ h * GIK\%injection)$
$GIKwithdrawal_{user}\ h = (EAwithdrawal_{user}\ h * GIK\%withdrawal)$

  With:

  - 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 Tariffs[5] 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. Monthly Energy Balance (MEB) settlement

For each Month in the Withdrawal Season the Storage Operator can perform a Monthly Energy Balance which is settled with the GIS accounts of the Storage Users.

The total Monthly Energy Balance (MEBtotal) for the concerning Month during the Withdrawal Season is calculated by subtracting the Energy Balance of all GIS

[5] 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.

accounts, from the average GCV multiplied by the Volume Balance of the Storage Installation. The detected difference in energy in Storage shall be settled with the energy of the GIS accounts of the Storage Users as a Monthly Energy Balance settlement (MEBSettl).

- The amount of MEB settlement of the Storage User is calculated pro rata the Storage User's withdrawn quantities up until the previous MEB settlement;
- A MEB settlement which implies a transfer of Gas between the GIS account of the Storage User to the operations account of the Storage Operator cannot be greater than 0,2% of his subscribed GIS (firm & conditional);
- The MEB settlement (when performed by the Storage Operator) for a Storage User for a certain month is settled with the GIS account of the Storage User at the first hour of the Month+2 months.

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 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 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 Installationpoint:

- "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.

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 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 Monthly 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):
  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 Monthly Energy Balance settlement for Month (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) + MEB 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
- *MEB settl* is his Energy settlement on the Energy Balance for Month -2m
- *EM settl* is the Energy settlement in case if Emergency

2.4.5.7. DAM/NNS Allocation

For the calculation of the variable part of the Service Fee for the DAM/NNS Service, the part of the confirmed (last) Nominations above the applicable Real Withdrawal Capacity or Real Injection Capacity as set in paragraph 0 is allocated to the DAM/NNS service using the following formula:

$$\sum_{d}\left(\max_{h\in d}\left(\max\left(0;\left(\frac{AccDamEN'_h}{GCV'_h}-\min\left(RExCx;\frac{CEN'_h}{GCV'_h}\right)\right)\right)\right)\right)$$

GCV'_h	The validated measured GCV at hour h at the Installation Point [kWh], as the case may be for Withdrawal or for Injection.
$RExCx$	The Real Injection or Real Withdrawal Capacity as the case may be.

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:

- Edig@s: this is the preferred electronic communication tool. The Storage Operator sends its notices using the Edig@s format with AS2 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 to 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.

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%).

The maximum values[6] of the VFW (VFWmax) and the VFI (VFImax) for the Storage Installation are published in the Storage Programme 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. *Maintenance Correction factor*

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

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

They depend upon:

- Planned Maintenance;
- Unforeseen Maintenance.

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6 The underlying parameters for the determination of the VFImax and VFWmax 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. *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 **Error! Reference source not found.**), 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 setted 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.

2.5.4. Real Capacity

Definitions:

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

REICIN = ((SFIC * VFI) + (SCIC * CFI)) * MFI * min(1;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:

REICWD = (SFIC + SCIC) * min(1;AFI)

- 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:

REWCWD = ((SFWC + SCIWC) * VFW) + (SCWC * CFW)) * MFW * 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 :

REWCIN = (SFWC + SCWC) *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 Firm Storage Volume ("SFSV") and is calculated as the Storage User's Real Storage Volume ("RESV"):

RESV = SFSV + SCSV * 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;

- 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 fax.

2.5.5.2. Publication

Before October, 15th 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, and 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 April, 15th and the ends on October, 14th. By default the Withdrawal Season starts on October, 15th and the ends on April, 14th.

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.

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's 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;
- Gas In Storage at any moment in time, the Storage Operator may apply the Run-off conditions as set out in paragraph 2.7.3.

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 charge the exceeding for each month as the maximum exceeded capacity above the Subscribed Storage Volume of Storage User during that month.
- at any moment in time, the Storage Operator may apply the Run-off conditions as set out in paragraph 2.7.3.

2.7.3. Gas In Storage Run-off conditions

2.7.3.1. General

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

- 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 storage Operator.

2.7.4. Gas In Storage on 1st of November ("GIS 90% rule")

Storage User, having subscribed Seasonal Storage Services, shall use its reasonable endeavour to ensure that its Gas In Storage at the 1st November may not be less than 90% of the Real Storage Volume that he has at his disposal. In case Storage User is not able to comply with the 90% rule the provisions of attachment F of the ACS are applicable.

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 GIS 30% of the Real Storage Volume that the Storage User, having subscribed Seasonal Storage Services, has at his disposal. This level of GIS 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 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-compliancy 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.

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 concerning 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 shall be made available to the Storage User by such date for the balance of the Storage Year, 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 will be withdrawn at the end of the concerned Storage Year.

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.

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 that 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 an 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 fax 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)m^3;
- the Wobbe, expressed in kWh/(n)m^3.

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.

- maximum hydrogen sulphide content;
- maximum CO_2 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 complying 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

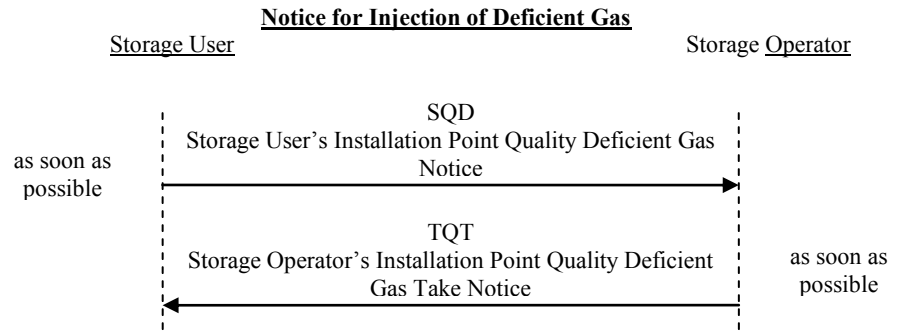
3.3.1. General

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 Operators 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 about 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.



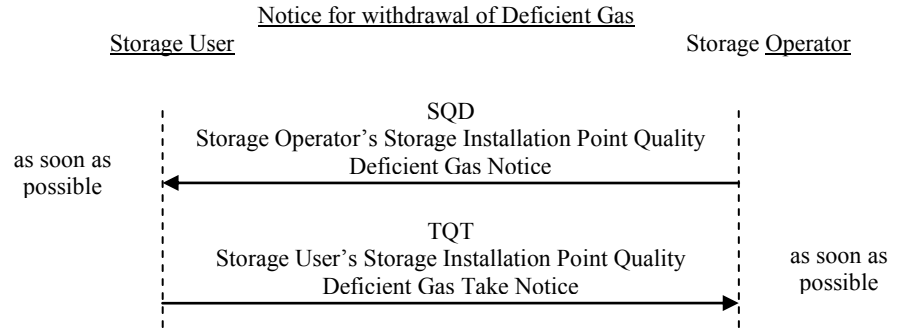
The Injection Nominations will be adapted 2 hours after the hour of sending the TQT notice (full hour + 2). The reduction will be made based upon the Storage Operator's TQT.

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.

ATTACHMENT D 2 –
Quality Requirements

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2 Quality Requirements for Withdrawal at Interconnection Point Loenhout..... 3

1 Quality Requirements for Injection at Interconnection Point Loenhout

The Quality Specifications for Injection in the Storage Installation of Loenhout are specified in the table below.

Minimum GCV	10.81	kWh(25°C)/m³(n)
Maximum GCV	12.77	kWh(25°C)/m³(n)
Minimum Wobbe	13.65	kWh(25°C)/m³(n)
Maximum Wobbe	15.56	kWh(25°C)/m³(n)
Maximum H_2S (inclusive COS) (as S)	5	mg/m³(n)
Maximum Total S (as S)[1]	30	mg/m³(n)
Maximum Mercaptans (as S)	6	mg/m³(n)
Maximum O_2	1000(vol)	ppm
Maximum CO_2 [2]	2(vol)	%
Maximum dewpoint H_2O	-8	°C @ 69 barg
Maximum hydrocarbon dewpoint	-2	°C @ 0-69 barg
Minimum pressure [3]	60	barg
Maximum pressure	80	barg

The Natural Gas delivered may not contain other elements and impurities (such as but not limited to methanol, condensates, gas odorants) to the extent that the Natural Gas delivered cannot be transported, stored and marketed in Belgium without incurring additional cost for quality adjustment. The Natural Gas delivered may not contain any added odorants.

The Storage Operator can impose additional or adapted requirements, should this be necessary.

[1] Temporary higher values for total S are admitted up to 150 mg/m³ (n) as far as the average over a Storage Year does not exceed 30 mg/m³ (n).
[2] CO2 content of the Natural Gas injected must on average be lower than 1% over the Storage Season
[3] Lower pressures are admitted knowing that total Injection capacity at such pressures possibly can no longer be guaranteed by the Storage Operator

2 Quality Requirements for Withdrawal at Interconnection Point Loenhout

The Quality Specifications for Withdrawal from the Storage Installation of Loenhout are the quality specifications of the H-Gas as set out in a Transmission Agreement and as published on the website of the Transmission Operator under 'Operational Info: Overview of specific requirements per entry point'.

Minimum GCV	10.81	kWh(25°C)/m³(n)
Maximum GCV	12.79	kWh(25°C)/m³(n)
Minimum Wobbe	13.65	kWh(25°C)/m³(n)
Maximum Wobbe	15.56	kWh(25°C)/m³(n)
Maximum H_2S (inclusive COS) (als S)	5	mg/m³(n)
Maximum Totale S (als S)[4]	30	mg/m³(n)
Maximum O_2	1000(vol)	ppm
Maximum CO_2	2(vol)	%
Maximum dewpoint H_2O	-8	°C @ 69 barg
Maximum hydrocarbon dewpoint	-2	°C @ 0-69 barg
Minimum temperature	2	°C
Maximum temperature	38	°C
Minimum pressure[5]	60	barg
Maximum pressure	80	barg

The delivered Natural Gas may not contain other elements and impurities (such as but not limited to methanol, condensates, gas odorants) in the extent that the Natural Gas cannot be transported, stored, and sold in Belgium without extra costs for modifying the quality.

The delivered Natural Gas may not contain any added odorants.

Besides the fact that the above quality specifications can be modified from time to time by the Transmission Operator, the Storage Operator can also impose additional or adapted requirements, should this be necessary.

[4] Temporary higher values for total S are admitted up to 150 mg/m³ (n) as far as the average over a Storage Year does not exceed 30 mg/m³ (n).
[5] In consent with the Transmission Operator lower pressures are admitted.

ATTACHMENT E – Metering and test procedures

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1. SCOPE

The purpose of these Metering and test procedures is to describe the general principles applied by the Storage Operator on the measuring station of the Storage Installation, for measuring the quantities of Natural Gas volumes and energy and for determining most of its physical and chemical properties. This document gives a description of:

- the Measuring Equipment used;
- the verifications & inspections applied on the Measuring Equipment;
- the uncertainty of the measurement.

2. DEFINITIONS AND ABREVIATIONS

In these Metering and test procedures, unless the context otherwise requires:

"Calibration" [(a)] shall mean operation that, under specified conditions, in a first step, establishes a relation between the quantity values with measurement uncertainties provided by measurement standards and corresponding indications with associated measurement uncertainties and, in a second step, uses this information to establish a relation for obtaining a measurement result from an indication.

"Gas Volume Conversion Device" shall mean the mechanical or electronic device that computes, integrates and indicates the volume increments measured by a Gas Volume Meter as if it were operating under reference conditions (Atmospheric or Normal Pressure P_n = 1.01325 bar; Normal Temperature T_n = 273.15 K, Zn), using as inputs the volume under measurement conditions as measured by the Gas Volume Meter, and other characteristics such as gas temperature, gas pressure and the compressibility factor (as compensation for the deviation from the ideal gas law).

"Gas Volume Meter" or **"Meter"** shall mean the measuring instrument for determining the gas volume passing through a pipe in which it is installed.

"Inspection" shall mean the examination of a Measuring instrument to ascertain all or some of the following:

(i) verification mark and / or certificate validity;

(ii) no sealing marks are damaged;

(iii) after Verification the instrument suffered no obvious modification; and,

(iv) its errors do not exceed the Maximum Permissible Errors in-service.

Inspection of a Measuring instrument may be done only after Verification. *For The Storage Operator an Inspection of a Measuring Instrument may include the Verification.*

"Maximum Permissible Errors - MPE" [(a)] shall mean an extreme value of measurement error, with respect to a known reference quantity value, permitted by specifications or regulations for a given measurement, measuring instrument, or measuring system

[a] International Vocabulary of Basic and General Terms in Metrology – OIML - 2008

In accordance with the specifications as described in this document, an instrument is considered to be in conformity when the difference compared to the reference (standard or another device) is less than the MPE defined in the table. These values are related to the instruments' metrological qualities and experiences, and the operating criteria.

"Measurand" [(a)] shall mean the quantity intended to be measured.

"Measuring Equipment" shall mean all equipment, pipes, apparatus, instruments, Meters, facilities, housings, devices and materials necessary for measuring the quantities of Natural Gas. The term shall apply to any component of the Measuring Station.

"Measuring Station" shall mean a station which contains at least a Gas Volume Meter, a Gas Volume Conversion Device, a precision manometer and a precision thermometer as well as the devices required for registration.

"Metrological Maintenance" shall mean the Verification and Inspection, based on work instructions, which is applied to the Measuring Equipment to verify the conformity of the installation with applicable (metrological) legislation, codes & standards, manufacturer's specifications, and other specifications as described in these Metering and test procedures.

"Metrological Monitoring" shall mean the Verification and Inspection which is applied to the Measuring Equipment and ensures the reliability and continuity of the measurements. In a Measuring Station, two different kinds of Metrological Monitoring are distinguished: Off Line Metrological Monitoring and On Line Metrological Monitoring.

"Off Line Metrological Monitoring" encompasses:

(i) the daily visual Verification of the station listing in order to look for possible Measuring device faults; and,

(ii) the daily comparison between the quantities of both Measuring Stations in series.

"On Line Metrological Monitoring" is made continuously by the WattMan. No measurement will be taken into account if this has not been fully validated through the automatic test. The detailed On Line Monitoring procedures managed by the software and the consequence on the measuring process (alarms, substitution values etc.) are given in the software section.

"Pm point (Pr Point)" is the measuring pressure tapping point provided to enable measurement of static pressure that equals the static pressure under measurement conditions, as defined in EN 12261.

"Telemetered quantity, value or information" is any quantity, value or information, recorded and transmitted by means of a Telemetering system (TLM), without any further verification (Metrological

Monitoring) or validation. The term Telemetering is used accordingly.

"Validation" [(a)] shall mean verification, where the specified requirements are adequate for an intended use.

"Verification" [(a)] shall mean the provision of objective evidence that a given item fulfils specified requirements

The aim of Verification is to apply the work instructions to verify that a measuring device works within its defined tolerances by comparing single or multiple measurements with the corresponding reference values (automatically or manually) or by automatic intercomparisons of similar measurements provided by independent measuring devices.

"WattMan" is an energy measurement system on The Storage Operator grid including the following specific features:

(i) it is connected with one up to four gas chromatograph(s);

(ii) it is able to execute several automatic (on-line) Metrological Monitoring functions; and,

(iii) it is connected with one up to eight measuring line(s).

2.1. Units

In these Metering and test procedures the following units are abbreviated in the following manner:

(i) Volume: m^3
(ii) Flow rate: m^3/h
(iii) Energy*: J and its multiples; kJ, GJ, TJ
(iv) Pressure (absolute): bar(a)
(v) Gauge Pressure: barg
(vi) Temperature: K or °C (whereby the symbol "T" means that the temperature is expressed in K, and "t" means that it is expressed in °C)
(vii) Normal Density: kg/m^3 (n)
(viii) Gross Calorific Value: kJ/m^3 (n)
(ix) Wobbe index: kJ/m^3 (n)
(x) Reference volume: m^3 (n)
(xi) Reference flow rate: m^3 (n)/h
(xii) Energy flow rate: GJ/h

*In our energy measurement systems, the energy is also displayed in kWh or MWh.

3. GENERAL DESCRIPTION MEASURING STATION

3.1. Measuring Natural Gas Quantities

The quantity of Natural Gas measured is expressed on the basis of the energy delivered (in GJ or kWh). This value is reached by multiplying the delivered volume (expressed in normal cubic meter, $m^3(n)$) by the relevant Gross Calorific Value of the Natural Gas.
The techniques of measurement have been selected to ensure that the Measuring Equipment will perform within the defined tolerance on a very long time exceeding several years.

3.2. Determination of the Volumes

To determine the volume expressed in $m^3(n)$, all active measuring lines are provided with the following elements:

- One Gas Volume Meters measuring the "gross" volume (Vb) i.e. the volume at the operating gas Pressure (P) and temperature (T).
- Pressure and temperature sensors, measuring the operating Gas pressure (P) at the Pm point in the Gas Volume Meter and the temperature (T) just behind the Gas Volume Meter.
- Gas Chromatographs determining the gas properties. The analyzed gas components are the saturated hydrocarbons from methane to pentane, carbon dioxide and nitrogen (main components). C6+ are determined separately (see § 8.2.2).
- One or two Gas Volume Conversion Devices for calculating the volume, expressed in $m^3(n)$, on the basis of the data received (Vb, P , T & Z) and according to the ”non-ideal gas law” adapted to Natural Gas, and using the following formula:

$$V_n = V_b \times \frac{P}{P_n} \times \frac{T_n}{T} \times \frac{Z_n}{Z}$$

If by definition: $K = \frac{Z}{Zn}$ =>

$$V_n = V_b \times \frac{P}{P_n} \times \frac{T_n}{T} \times \frac{1}{K} \text{ (m³n/h)}$$

V_n is the volume at base conditions P_n & T_n (m³(n))
V_b is the volume at line conditions P & T (m³)
P is the absolute pressure in the Gas Volume Meter measured at Pm point (bar)
P_n = 1.01325 bar
T is the temperature at the Gas Volume Meter (Kelvin)
T_n = 273.15 Kelvin
Z is the compressibility factor at P & T
Z_n is the compressibility factor at P_n & T_n

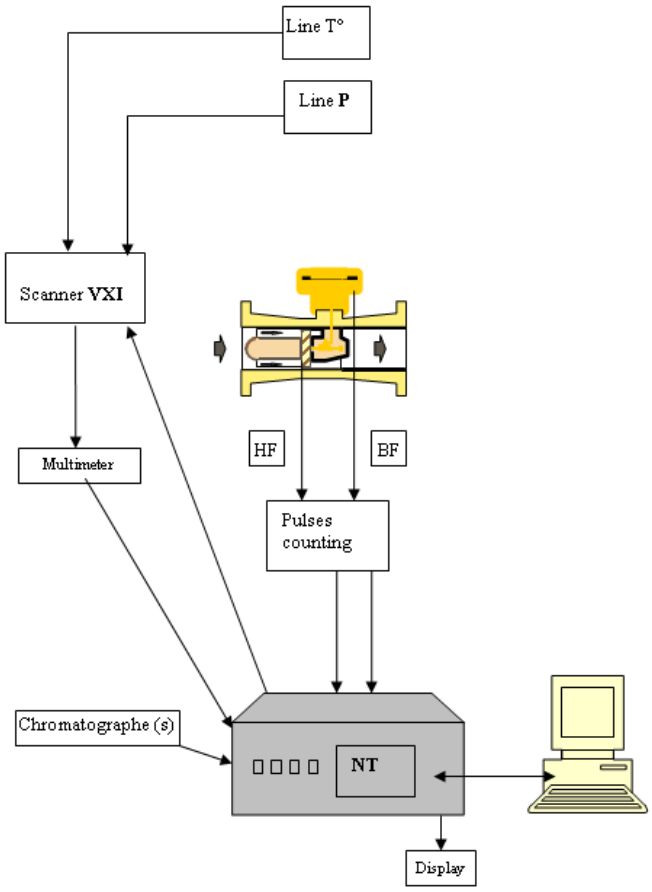
3.3. Determination of the energy

$$W = \sum_{i=1}^{n} \left(V(n)_i \cdot GCV_i \right)$$

V(n) is the volume at base conditions ($m^3(n)$)
GCV is the gross calorific value ($kJ/m^3(n)$), calculated at 25°C from the gas composition determined by on-line gas chromatographs using ISO 6976-1995.

3.4. Schematic view of a metering Station

3.4.1. Architecture of the Wattman



(indicative scheme of current Measuring System).

4. UNCERTAINTY OF THE MEASUREMENTS

4.1. PRINCIPLE

The expanded uncertainty has been determined in accordance to the "Guide to the Expression of Uncertainty in Measurement" (GUM) and ISO standards. The expanded uncertainty corresponds to a coverage probability of approximately 95% (k=2).

4.2. Uncertainty per component

4.2.1. Uncertainty on gross volume

Quantity	*Units*	*Value*	*Type of distribution*	*Standard Uncertainty*	*Sensitivity Coefficient*	*Contribution to Standard Uncertainty*
Raw Volume	m3	5000.00				
Uncertainty of calibration	m3	-	normal	4.75	1.00	4.75
Reproductibility of the turbine			normal	2.50	1.00	2.50
Field conditions	m3	-	normal	2.50	1.00	2.50
Raw Volume	m3	5000.00				5.92
Expanded Uncertainty on raw volume	m3	11.843				
Relative expanded uncertainty	%	0.237				

The accuracy of a Gas Volume Meter in a measuring field depends on several components. In order to minimize these effects, the Meter and a standard 10D upstream piping including one flow straightener are calibrated together at pressure near the field conditions. Since the Meter is isolated from the specific flow profile and from possible swirl effect by the straightener, the environment of the Meter during the Calibration and on the field may be considered as identical.

4.2.2. Uncertainty on Pressure

Quantity	*Units*	*Value*	*Type of distribution*	*Standard Uncertainty*	*Sensitivity Coefficient*	*Contribution to Standard Uncertainty*
Pressure and calibration uncertainty	bar	70.000	normal	0.0018	1.00	0.0018
Uncertainty due the resolution (14 bits)	bar	-	rectangular	0.0028	1.00	0.0028
Drift of response factor during 1 year	bar	-	normal	0.0216	1.00	0.0216
Pressure	bar	70.000				0.0219
Expanded Uncertainty on pressure	bar	0.044				
Relative expanded uncertainty	%	0.06				

The drift on response factor during 1 year (21,6 mbar) is based on a statistical study of a representative number of transmitters.

4.2.3. Uncertainty on Temperature

Quantity	*Units*	*Value*	*Type of distribution*	*Standard Uncertainty*	*Sensitivity Coefficient*	*Contribution to Standard Uncertainty*
Uncertainty of calibration	℃	10.000	normal	0.0100	1.00	0 .0100
Uncertainty due to the resolution (14 bits)	℃	-	recta ngular	0.0016	1.00	0.0016
Drift of response factor during 1 year	℃	-	normal	0.05 00	1.00	0.0500
Uncertainty due to installation	℃	-	normal	0.0500	1.00	0.0500
Temperature	K	283.150				0.0714
Expanded Uncertainty on temperature	K	0.143				
Relative expanded uncertainty	%	0.05				

The uncertainties due to installation are described in standard EN-IEC-751.

4.2.4. Uncertainty on PCS/K

Quantity	*Units*	*Value*	*Type of distribution*	*Standard Uncertainty*	*Sensitivity Coefficient*	*Contribution to Standard Uncertainty*
Pressure	bar	70.989	normal	0.022	130.91	2.861
Temperature	K	283.15	normal	0.07	-148.70	-10.622
N2	mole %	2.354	normal	0.0117	-150.84	-1.768
CO2	mole %	1.137	normal	0.0066	130.30	0.859
CH4	mole %	89.452	normal	0.0357	463.84	16.567
C2	mole %	5.209	normal	0.0326	1087.54	35.503
C3	mole %	1.257	normal	0.0053	1606.35	8.532
iC4	mole %	0.170	normal	0.0012	2608.29	3.093
nC4	mole %	0.230	normal	0.0014	2338.71	3.256
iC5	mole %	0.054	normal	0.0004	1913.82	0.721
nC5	mole %	0.047	normal	0.0003	3442.62	0.979
C5+	mole %	0.067	normal	0.0063	4007.02	25.244
O2	mole %	0.000	normal	0.0000		0.000
He	mole %	0.023	normal	0.0015	0.00	0.000
Methodology AGA 8	KJ		normal	24.88	1.00	24.877
Method of calculation ISO-6976	KJ		normal	12.4386	1.00	12.439
Uncertainty on basic data from ISO-6976	KJ		normal	3.7316	1.00	3.732
PCS/K	KJ	49754				56
Expanded Uncertainty on Energy	KJ	113				
Relative expanded uncertainty		0.227%				

Resulting from the same measuring devices (GC), it is important to consider the uncertainty of PCS and K together.

4.3. *Uncertainty of A Complete station*

4.3.1. Uncertainty on Energy

Système A						
Quantity	*Units*	*Value*	*Type of distribution*	*Standard Uncertainty*	*Sensitivity Coefficient*	*Contribution to Standard Uncertainty*
Pressure	bar	70.989	normal	0.022	4760.34	104
Temperature	K	283.15	normal	0.07	-1193.47	-85
Raw Volume	m³	5000.00	normal	5.92	67.59	400
V*(Tn/T)*(P/Pn)	m³	337931				422
Expanded Uncertainty on V*(Tn/T)*(P/Pn)	m³	844				
Relative expanded uncertainty on V*(Tn/T)*(P/Pn)	%	0.250				

One System with several lines						
Quantity	*Units*	*Value*	*Type of distribution*	*Standard Uncertainty*	*Sensitivity Coefficient*	*Contribution to Standard Uncertainty*
Line 1 : V*(Tn/T)*(P/Pn)	m³	337931	normal	422.20	49754.47	21006295
Line 2 : V*(Tn/T)*(P/Pn)	m³	337931	normal	422.20	49754.47	21006295
Line 3 : V*(Tn/T)*(P/Pn)	m³	337931	normal	422.20	49754.47	21006295
Line 4 : V*(Tn/T)*(P/Pn)	m³					
Line 5 : V*(Tn/T)*(P/Pn)	m³					
PCS/K	KJ/m³	49754	normal	56.3829	1013794	57160623
Total Energy	MJ	50440781				67757878
Expanded Uncertainty on V*(Tn/T)*(P/Pn)	MJ	135516				
Relative Expanded Uncertainty on V*(Tn/T)*(P/Pn)		0.269%				

A statistical study on a representative number of measuring line and with turbine meters random calibrated on a period of six years after the harmonization of the European cubic Meter of Gas showed that the major part of the calibration uncertainty is not systematic. Uncertainty due to gross volumes of each meter may thus be considered as statistically independent.

4.4. Metrological Maintenance

Measuring Instruments	Metrological Maintenance			
	Calibration, Verification & Inspection	Uncertainty	MPE / Threshold	Frequency
Gas Volume Meter	Primary (re)Calibration § 5.2.1	≤0.20 %	1% - 0.4%	10 Years
	Turbine Index Reading Procedure § 5.2.2	/	3 low frequency vs high frequency	Monthly
	Volume meter Inspection Procedure § 5.2.4	/	/	Doubtful functioning
Line Pressure Transmitter	Primary Calibration § 6.2.1	0.005 %	/	Put in to service
	Inspection & Verification in the field § 6.2.2	/	0.3 %	Yearly
Temperature Line Transmitter	Primary Calibration § 7.2.1	0.01 °C	/	Put in to service
	Inspection & Verification in the field § 7.2.2	/	0.5°C	Yearly
Gas Chromatograph	Primary Calibration § 8.2.1	0.15 %[(b)]	/	Yearly

4.5. Corrections

Measuring Instruments	Correction	MPE
Gas Volume Meter	Correction of Volume measurement, § 10.2	0.4 %
Line Pressure Transmitter	Correction of P, T, Z, GCV, § 10.1	0.2 %
Temperature Line Transmitter	Correction of P, T, Z, GCV, § 10.1	0.2 %
Overall station on volume & energy	Correction of P, T, Z, GCV, § 10.1	0.2 %
Gas Chromatograph	Correction of P, T, Z, GCV, § 10.1	0.2 %

b % = accuracy on the reading value in the working range, related to the gross calorific value

5. VOLUME METERS

5.1. General description

5.1.1. Material description

Turbine meter according to EN-12261 or ultrasonic meter according to ISO 17089-1.

5.1.2. Repeatability

≤0.1%.

5.2. Metrological Maintenance

5.2.1. Primary (re)Calibration

5.2.1.1. Subject

This procedure allows the Metrological Calibration of a Gas Volume Meter.

5.2.1.2. Operations

- Replace the volume meter.
- Perform an "as found calibration" to verify the condition of the dismounted volume meter.
- Proceed to a full inspection by the manufacturer or a certified workshop. Worn parts and parts susceptible of wear shall be replaced.
- Recalibrate the volume meter according EN-12261 (turbine meter) or ISO 17089-1 (ultrasonic meter). The high pressure calibration is performed by an accredited (ISO 17025) calibration facility that maintains measurement traceability to the European Harmonized cubic meter of gas (L.N.E., N.M.I., P.T.B. – Westerbork, TransCanada Calibrations …), designated by The Storage Operator at it sole discretion.
- On base of the calibration certificate, apply the linearization in the computer.

5.2.1.3. Frequency

10 years.

5.2.1.4. MPE

1% (maximum discrepancy between as found calibration performed at atmospheric pressure and previous calibration).

0.4% (maximum discrepancy between as found calibration performed at min. 8barg and previous calibration).

5.2.1.5. Uncertainty

≤0.20 %.

5.2.1.6. Classification of results

- Establish a report comprising a list of findings and a list of replaced parts.

- File the report.

5.2.2. Turbine Index Reading Procedure

5.2.2.1. Subject

This procedure checks that, for all lines, the high frequency and low frequency values recorded by the WattMan correspond with the Meter totalizer.

5.2.2.2. Operations

- Produce a simultaneous summary of high frequency and low frequency index together with those for the totalizers of all lines.
- Calculate the difference compared to the index of the previous reading and check conformity.
- If differences arise between the indexes, the high frequency and low frequency values, investigation is done to find out the origin of this difference.

5.2.2.3. Frequency

Every month for each turbine.

5.2.2.4. Classification of results

- Establish a report on the measurement results.
- File the report.

5.2.3. Turbine Lubrication Procedure

5.2.3.1. Subject

The purpose of this procedure is to ensure the regular lubrication of the bearings of the meters according to the prescriptions of the manufacturer.

5.2.3.2. Operations

- Prepare the lubrication pump with oil specification recommended by the manufacturer.
- Connect the pump on the oil injectors of the meter in service.
- Inject the recommended oil quantity.
- Disconnect the pump from the oil injectors of the meter and complete the specific report.

5.2.3.3. Frequency

According to the recommendations of the manufacturer.

5.2.3.4. Classification of results

- Establish a lubrication report.
- File the report.

5.2.4. Gas Volume Meter Inspection Procedure

5.2.4.1. Subject

This procedure allows the visual inspection of the volume meter in case of doubt about its state.

5.2.4.2. Operations

Inspection:

Examination of the measuring instrument to ascertain of the following:

- verification mark and/or certificate is valid
- no sealing marks are damaged
- the instrument suffered no obvious modification
- the mobiles Constants from the calibration certificate are correctly introduced into the Wattman.

Putting the line out of operation:

- Start up a line on stand-by (if necessary)
- Stop, isolate and reduce the line pressure to atmospheric pressure before Verification
- Disassemble and clean any component of the line if necessary (conical filter, flow conditioner…)
- Remove the Meter.

Examination:

- Visual examination of the Meter (if it is necessary, clean the Meter). If the Meter does not present any visual default, it is declared to be in conformity. If visual defaults are detected, it is replaced by a spare Meter and then submitted to a check Calibration, maintenance and metrological Calibration (See §5.2.1, Primary (re)Calibration).

Reassembly:

- Reassembly the metering line.

5.2.4.3. Frequency

If there is any doubt about the proper functioning of the Meter.

5.2.4.4. Classification of results

- Establish a report
- File the report.

6. HIGH PRESSURE TRANSMITTERS

6.1. General description

6.1.1. Material description

Rosemount type 3051 CG5, Yokogawa type eja 310 or equivalent.
Range transmitter: 0-138 barg or 0-100 bar(a)
Installed range: 0 - 90 barg or 0-100 bar(a) (4-20 mA)
Calibrated range: 40 - 90 barg or 40-90 bar(a)

6.1.2. Resolution

14 bits or better.

6.2. Metrological Maintenance

6.2.1. Primary Calibration

6.2.1.1. Subject

The primary Calibration of each transmitter is made in the central laboratory using automatic reference gage pressures generator Desgranges & Huot and Barometer Rosemount. The digital output of the transducer is used to determine his deviation compare with the reference value.

6.2.1.2. Operations

Random pressures between 40 and 90 barg are generated with steps of 2,5 bar. The Calibration consists to determine a polynomial curve of the 2nd order with the couples "pressure, deviation":

6.2.1.3. Frequency

Put in to service.

6.2.1.4. Standard for primary Calibration

Dead-weight balance:
DH Budenberg, class S2, type 50.000-II.
Maximum uncertainty: 0.005 %.
Barometer:
Rosemount type 1201 F1.
Maximum uncertainty: 0.05 %.

6.2.1.5. Sample of Calibration sheet

A sample of the Calibration sheet is in Appendix A.

6.2.2. Inspection & Verification in the field

6.2.2.1. Subject

This procedure applies to pressure sensors checks linearity and the compliance with requirements (MPE).

6.2.2.2. Operations

Inspection:

Examination of the measuring instrument to ascertain of the following:

- verification mark and/or certificate is valid
- no sealing marks are damaged (if present)
- the instrument suffered no obvious modification
- the mobiles Constants from the calibration certificate are correctly introduced into the MEASUr-W.

Verification

- Put the standard balance into operation
- Connect the standard balance to the sensor in operation
- Take the values given by the flow computer and those given by the standard balance
- Calculate the differences
- If the difference exceeds the MPE, the apparatus is not conform and will be repaired or replaced
- Disconnect the standard balance from the input line.

6.2.2.3. Frequency

Yearly for each transmitter.

6.2.2.4. MPE

0.3%.

6.2.2.5. Standard for verification in the field

Uncertainty ≤ 0.01% FS + 0.025%.

6.2.2.6. Classification of results

- Establish a report on the measurement results
- File the report.

7. TEMPERATURE PROBE

7.1. General description

7.1.1. Material description

Transmitter Degussa or Rosemount type 3144P or equivalent.
Range transmitter: -10 / 35°C
Installed range: -10 / 35°C
Calibrated range: -10 / 35°C

7.1.2. Accuracy

0.01°C.

7.2. Metrological Maintenance

7.2.1. Primary Calibration

7.2.1.1. Subject

The primary Calibration of each transmitter is made in the central laboratory.

7.2.1.2. Operations

The primary Calibration of each transmitter is made in the central laboratory. The output of the transducer is used to determine his deviation compare with the reference value. The Calibration consists to determine a polynomial curve of the 2nd order with the couples "temperature, deviation".

7.2.1.3. Frequency

Put in to service.

7.2.1.4. Standard for primary Calibration

A Tinsley 25 Ω Reference resistance traceable to NMi (Nederlands Meetinstituut) associated with a 10-6 resistance measurement bridge. Accuracy: better than 0.01 °C. The temperatures will be calculated taking into account the ITS-90 recommendations.

7.2.1.5. Sample of Calibration sheet

A sample of the Calibration sheet is in *Appendix B: Indicative example of Calibration Certificate for temperature transmitter*.

7.2.2. Inspection & Verification in the field

7.2.2.1. Subject

This procedure applies to temperature probes. The procedure checks the correlation of the values given by a temperature probe and a standard thermometer. This procedure is applied to a line preferably in operation.
The characteristics of Pt 100 platinum sensors are, by principle, very stable. Due to this fact and the systematic use of dual elements, it is not necessary to proceed to frequent Metrological Verification.

7.2.2.2. Operations

Inspection:

Examination of the measuring instrument to ascertain of the following:

- verification mark and/or certificate is valid
- no sealing marks are damaged
- the instrument suffered no obvious modification
- the mobiles Constants from the calibration certificate are correctly introduced into the Wattman.

Verification:

- Place a standard thermometer in a sleeve close to the temperature measurement point
- Wait 5 minutes for stabilization
- Record and compare the values given by the Wattman and the standard thermometer
- If the difference between the probe and the thermometer exceeds the MPE, the sensor is not conforming and should be replaced.

7.2.2.3. Frequency

Yearly for each transmitter.

7.2.2.4. MPE

0.5°C.

7.2.2.5. Standard thermometer

Uncertainty and resolution ≤ 0.1 °C.

7.2.2.6. Classification of results

- Establish a report on the measurement results
- File the report.

8. CHROMATOGRAPH

8.1. General description

8.1.1. Material description

- Micro GC Agilent or equivalent
- Personal computer interface for the integration.

8.2. Metrological Maintenance

8.2.1. Primary Calibration

8.2.1.1. Subject

This procedure is performed in order to set the response factors of a chromatographic analyzer. This procedure is based on a working standard gas prepared by gravimetric analysis for which the composition is known, traceable and certified.

8.2.1.2. Operations

- Put the chromatograph in "CONTROL PHASE" mode, and wait for the end of the analysis under way. The chromatograph no longer contributes to measuring operations after this action.
- Isolate the apparatus from the natural gas input.
- Subject the apparatus to standard gas. Purge the standard gas circuit 3 times.
- Adjust the gas output to the nominal value.
- Conduct the required number of consecutive analyses with the working standard gas, taking care not to interrupt the circulation of the standard gas between 2 analyses.
- Discard the first analysis and possibly following ones if the nitrogen response leads to the conclusion that a purging of the gas input circuit was imperfect. Retain at least 10 consecutive valid analyses with nitrogen levels considered to be stabilized.
- Calculate the new absolute response factors (surface concentration ratio) based on the average value of retained analyses.
- Record the new response factors in the chromatograph and personal computer programmes.
- Application of the chromatograph Verification procedure.
- Isolate the standard gas input.
- Reconnect the natural gas input.
- Measure and adjust the natural gas output.
- Wait 5 minutes.
- Declare the chromatograph to be "IN OPERATION".

8.2.1.3. Standard

The Calibration gas is a gravimetrically prepared working standard from an accredited ISO 17025 laboratory.

8.2.1.4. Frequency

Yearly for each chromatograph.

8.2.1.5. Sample of Calibration sheet

A sample of the Calibration sheet is in *Appendix E: Indicative example of a Calibration report of a gc.*

8.2.2. Determination of C6+ and He

8.2.2.1. Subject

This procedure is used to calculate the proportion of C6+ and He in the Natural Gas. These parameters are not measured directly and in consequence are estimated by the Wattman. The procedure establishes estimation factors on the basis of a more complete laboratory analysis.

8.2.2.2. Operations

Taking samples

- A sample of gas representative of the gas passing through the station is carefully taken, i.e. from a line in operation or a common manifold.

Laboratory analysis of the sample

- Determine the hydrocarbons, nitrogen, oxygen, carbon dioxide and helium content by laboratory analysis as mentioned on the report:
- Calculate weighted average of GCV for C6+.
- Determine k = the ratio in mole % of C6+ and (iC5+nC5).
- Determine the ratio in mole % of He and the sum of other components.
- Calculate the k' = (C6+ * GCV C6+) / (iC5 + nC5) / GCVWattman (GCVWattman = 198 000 kJ).

Changing of the values in the Wattman (Only if the C6+ and He are not calculate by the neuronal network).

- Record in the Wattman the new value of the % of He given by the laboratory analysis.
- Record in the Wattman the new value of k'.

8.2.2.3. Frequency

Every six months.

8.2.2.4. Classification of results

- Establish a report on the measurement results.
- File the report.

9. WATTMAN

9.1. General description

9.1.1. Material description

This list of materials is subject to modification, as the case may be.

9.1.1.1. Central Computer

- Advantec with PC processors Pentium 3 -1 GHz or equivalent
- Internal hard disk: SCSI 35Go
- External hard disk: SCSI 35 Go
- Floppy
- Operating system: Windows 2000.

9.1.1.2. Data acquisition units

75000 series B mainframe with front panel E1301A + opt 908 Rack mount kit + opt 009
E1326B internally installed,
4-channel counter E1332A
4-channel D/A converter E1328A
16-channel relay mux E1345A
16-channel form C relays E1364A
Quad 8 bits Digital I/O E1330A
The maximum specified thermal offset of the relays is 5µV.

9.2. Metrological maintenance - Wattman

9.2.1. Primary Inspection

Visual inspection and configuration test.

9.2.2. Metrological computer procedure

9.2.2.1. Subject

A procedure should be carried out to ensure that the relevant constants and formulae have been properly inserted in the computer software and that it performs the flow calculation in accordance with the appropriate standard.

9.2.2.2. Operations

- At the start of an hour, simultaneously record the timer index, the high frequency and the low frequency.
- Each minute print a snapshot report and record pressure, temperature, K-ref and GCV.
- At the start of the following hour, simultaneously record the timer index, the high frequency and the low frequency.

- Record the gross volume, normal volume, pressure, temperature, K-ref, GCV and energy in the hourly line report.
- Check that the difference between the maximum and minimum output in the hour is less than 5%. If this is not the case, restart the procedure.
- Check the correspondence between the arithmetic average of the values (P, T, K-ref, GCV) and the weighted values of the hourly value.
- Check the high frequency timer, calculation of the gross volume to the normal volume with pressure, K-ref, temperatures, correction curve of the Gas Volume Meter. Calculation of energy from volume and GCV.
- Compare the analyses given by the chromatographic integrators and the computer log.
- Calculate the calorific value, the density and the compressibility factor by means of a procedure independent of the WattMan. Care should be taken to use the same standards for the calculations of checks as those used in WattMan.
- Check agreement of other apparatus measurements read from apparatus and those given by the Wattman.

9.2.2.3. Frequency

The procedure is conducted after any significant change of software. For a minor software update, the updates of system A and system B are staggered in order to validate the update by comparison of the logs of the 2 systems.

9.2.2.4. MPE

0.1 %.

9.2.2.5. Classification of results

- Establish a report on the measurement results.
- File the report.

10. CORRECTION

10.1. Correction of P, T, Z, GCV

- If an instrument is found out of the conformity, an investigation is started to see if the instrument has been detected by the software and rejected.

- If the instrument out of conformity has not been detected by the software, an investigation is started from the historical values and recordings (listing and procedures) to see when this difference has occurred.
Correction is applied when the influence of the error of this single instrument on the total energy measured by the system is above 0.2%. The correction is made upon the basis of the best available data.

10.2. Correction of Volume measurement

- If the as found calibration showed that a Gas Volume Meter has probably drifted over time to reach the recalculation limit, the considered meter will be recalibrated (if possible) before the maintenance at the same pressure that the previous calibration used for the linearization.

- From the results of the two Calibrations (the initial one and the one just performed), the shift of the Gas Volume Meter is evaluated using the following formula:

(5*Δ5%+10*Δ10%+25*Δ25%+40*Δ40%+55*Δ55%+70*Δ70%+55*Δ85%+40*Δ100%)/(5+10+25+40+55+70+55+40)

ΔX% is the difference between the two last Calibrations results at a flow rate of X% of the range of the Meter and at the same pressure.

- The recalculation limit for the Gas Volume Meter is 0.4%. The results of the off-line comparison of the line with the Gas Volume Meter are investigated to see when the Gas Volume Meter has passed over the limit and a correction is made from that time until the turbine is out of service. But in case the period is not known or agreed upon, such corrections shall be for a period extending over one-half of the quantities elapsed since the date of the last test. The corrections of the measured volumes will be based upon the shift at the corresponding flowrate. The correction is made upon the basis of the best available data and in mutual agreement with the adjacent operator.

11. PERIPHERIES APPARATUS

11.1. Measuring Console(s)

Colour tft screen.

11.2. Remote Display station

A periodically updated status of the measurements is available on a specific serial port. This report can be displayed locally on a screen or remotely through modem.

11.3. Digital telemetering

Status and results will be requested on a specific serial port to be transmitted over a specific band of the Storage Operator private telemetering system.

11.4. Printer(s)

The hourly and daily results, status and average values of all the measurements can be printed. All the relevant operator dialogs and the possible operating system events can be echoed on the same printer.

11.5. Magnetic storage devices

The hourly and daily results and status are logged on a hard disk.
The hard disk logs one year results.
The detailed content of the logging file is given in the software section.

11.6. Digital Encoders

Elster-Instromet S1 mounted on the mechanical shaft of the totalizer or equivalent.

12. REFERENCES

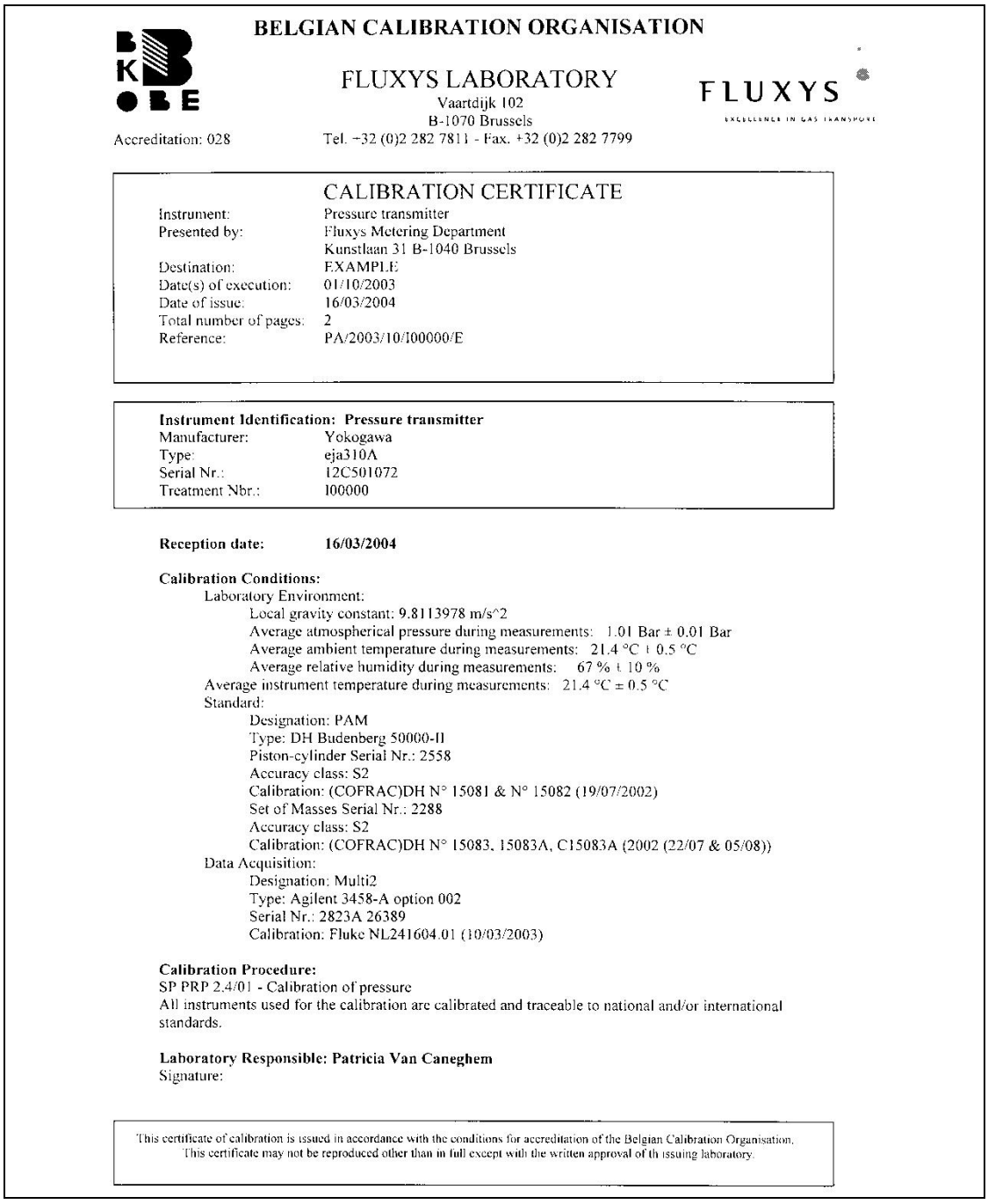
- **ISO 5167-1 2003-03** Measurement of fluid flow in circular cross-section conduits running full using pressure differential devices – Part 1: General
- **ISO TR 5168 1998-03** Measurement of fluid flow - Evaluation of uncertainties
- **ISO 5725-1 1994-12** Accuracy (trueness and precision) of measurement methods and results - Part 1: General principles and definitions
- **ISO 5725-2 1994-12** Accuracy (trueness and precision) of measurement methods and results - Part 2: Basic method for the determination of repeatablility and reproducibility of a standard measurement method
- **ISO 5725-3 1994-12** Accuracy (trueness and precision) of measurement methods and results - Part 3: Intermediate measures of the precision of a standard measurement method
- **ISO 5725-4 1994-12** Accuracy (trueness and precision) of measurement methods and results - Part 4: Basic methods for the determination of the trueness of a standard measurement method
- **ISO 5725-6 1994-12** Accuracy (trueness and precision) of measurement methods and results - Part 6: Use in practice of accuracy values
- **ISO 6142 2001-04** Gas analysis - Preparation of Calibration gas mixtures - Gravimetric methods
- **ISO 6143 1981** Gas analysis - Determination of composition of Calibration mixtures – Comparison methods
- **ISO 6974-1 2000-04** Natural gas - Determination of composition with defined uncertainty by gas chromatography - Part 1: Guidelines for tailored analysis
- **ISO 6974-2 2001-02** Natural gas - Determination of composition with defined uncertainty by gas chromatography - Part 2: Measuring-system characteristics and statistics for processing of data
- **ISO 6974-3 2000-04** Natural gas - Determination of composition with defined uncertainty by gas chromatography - Part 3: Determination of hydrogen, helium, oxygen, nitrogen, carbon dioxide and hydrocarbons up to C8 using two packed columns
- **ISO 6974-4 2000-04** Natural gas - Determination of composition with defined uncertainty by gas chromatography - Part 4: Determination of nitrogen, carbon dioxide and C1 to C5 and C6+ hydrocarbons for a laboratory and on-line measuring system using two columns
- **ISO 6974-5 2000-04** Natural gas - Determination of composition with defined uncertainty by gas chromatography - Part 5: Determination of nitrogen, carbon dioxide and C1 to C5 and C6+ hydrocarbons for a laboratory and on-line process application using three columns
- **ISO/FDIS 6974-6** Natural gas - Determination of composition with defined uncertainty by gas chromatography - Part 6: Determination of hydrogen, helium, oxygen, nitrogen, carbon dioxide and C1 hydrocarbons to C8 using three capillary columns
- **ISO 6976 1995-12** Natural gas - Calculation of calorific value, density, relative density and Wobbe index from composition
- **ISO 7504 2001-11** Gas analysis – Vocabulary
- **ISO/TR 7871 1997-02** Cumulative sum charts - Guidance on quality control and data analysis using CUSUM techniques
- **ISO 9951 1993-12** Measurement of gas flow in closed conduits - Turbine Meters / T. Corr.1994-11
- **ISO 10715 1997-05** Natural gas - Sampling guidelines
- **ISO 10723 1995-12** Natural gas - Performance evaluation for on-line analytical systems
- **ISO 10790 1999-04** Measurement of fluid flow in closed conduits - Guidance to the selection, installation and use of Coriolis Meters (mass flow, density and volume flow measurements)
- **ISO 12213-1 1997-11** Natural gas - Calculation of compression factor - Part 1: Introduction and guidelines
- **ISO 12213-2 1997-11** Natural gas - Calculation of compression factor - Part 2: Calculation using a molar- composition analysis
- **ISO 12213-3 1997-11** Natural gas - Calculation of compression factor - Part 3: Calculation using physical properties
- **EN 12261 2003** Gas Meters – Turbine gas Meters
- **ISO 13443 1996-12** Natural gas - Standard reference conditions
- **ISO 13686 1998-04** Natural gas - Quality designation
- **ISO 14111 1997-03** Natural gas - Guidelines for traceability in analysis

- **ISO 14532 2001-08** Natural gas - Vocabulary
- **ISO/DIS 15970 1999** Natural gas - Measurement of properties – Volumetric properties
- **ISO/DIS 15971-1 1999** Natural gas - Measurement of properties - Combustion properties – Calorific value, Wobbe-Index
- **ISO DIS 16664 2003-03** Gas analysis – Handling of Calibration gases and gas mixtures - Guidelines
- **ISO 19739: 2004** Natural gas - Determination of sulphur compounds using gas chromatography
- **EN 1776 1999** Gas supply. Natural gas measuring stations. Functional requirements
- **EN 60751: 1995** Industrial Platinum resistance thermometer sensors
- **ISO/PRFGuide 99998** Guide to the expression of uncertainty in measurement (1995)
- International vocabulary of basic and general terms in metrology (1993 & 2000)

Any change to a more recent edition of any such reference shall be implemented as soon as reasonably practicable.

13. Appendix

13.1. Appendix A: Indicative example of Calibration Certificate for Pressure Transmitter



BELGIAN CALIBRATION ORGANISATION

FLUXYS LABORATORY
Vaartdijk 102
B-1070 Brussels
Accreditation: 028 Tel. +32 (0)2 282 7811 - Fax. +32 (0)2 282 7799

FLUXYS
EXCELLENCE IN GAS TRANSPORT

CALIBRATION CERTIFICATE

Instrument:	Pressure transmitter
Presented by:	Fluxys Metering Department Kunstlaan 31 B-1040 Brussels
Destination:	EXAMPLE
Date(s) of execution:	01/10/2003
Date of issue:	16/03/2004
Total number of pages:	2
Reference:	PA/2003/10/I00000/E

Instrument Identification: Pressure transmitter

Manufacturer:	Yokogawa
Type:	eja310A
Serial Nr.:	12C501072
Treatment Nbr.:	I00000

Reception date: **16/03/2004**

Calibration Conditions:

Laboratory Environment:
- Local gravity constant: 9.8113978 m/s^2
- Average atmospherical pressure during measurements: 1.01 Bar ± 0.01 Bar
- Average ambient temperature during measurements: 21.4 °C ± 0.5 °C
- Average relative humidity during measurements: 67 % ± 10 %

Average instrument temperature during measurements: 21.4 °C ± 0.5 °C

Standard:
- Designation: PAM
- Type: DH Budenberg 50000-II
- Piston-cylinder Serial Nr.: 2558
- Accuracy class: S2
- Calibration: (COFRAC)DH N° 15081 & N° 15082 (19/07/2002)
- Set of Masses Serial Nr.: 2288
- Accuracy class: S2
- Calibration: (COFRAC)DH N° 15083, 15083A, C15083A (2002 (22/07 & 05/08))

Data Acquisition:
- Designation: Multi2
- Type: Agilent 3458-A option 002
- Serial Nr.: 2823A 26389
- Calibration: Fluke NL241604.01 (10/03/2003)

Calibration Procedure:
SP PRP 2.4/01 - Calibration of pressure
All instruments used for the calibration are calibrated and traceable to national and/or international standards.

Laboratory Responsible: Patricia Van Caneghem
Signature:

This certificate of calibration is issued in accordance with the conditions for accreditation of the Belgian Calibration Organisation.
This certificate may not be reproduced other than in full except with the written approval of th issuing laboratory.

Operator name: JMa

Calibrated device: Yokogawa eja310A N° 12C501072
Nominal range: 0.00 - 100.00 Bar
Installed Range: 0.00107792 - 90.0027 Bar
Calibrated range: 40.00 - 90.00 Bar
Output signal: 4-20 mA
Calibration mode:Abs. Press.

Shunt resistance: 50.0004 Ohm

Results of the data regression.

True Val. [bar]	Ref. Uncert. [bar]	Read Val. [Points]	Calc. Val. [bar]	Uncertainty: [bar]
74.9971	0.0031	86664	74.9994	0.0035
87.4965	0.0037	97772	87.4963	0.0043
67.4981	0.0028	79996	67.4978	0.0032
42.4994	0.0018	57776	42.5001	0.0027
54.9986	0.0023	68887	54.9997	0.0028
57.4977	0.0024	71108	57.4982	0.0028
39.9983	0.0017	55552	39.9982	0.0028
79.9972	0.0033	91106	79.9972	0.0038
44.9983	0.0019	59997	44.9987	0.0027
64.9988	0.0027	77777	65.0008	0.0032
69.9970	0.0029	82217	69.9966	0.0033
62.4977	0.0026	75551	62.4972	0.0030
72.4979	0.0030	84440	72.4978	0.0034
59.9986	0.0025	73331	59.9992	0.0029
84.9971	0.0035	95550	84.9959	0.0041
49.9983	0.0021	64441	49.9980	0.0027
82.4981	0.0034	93330	82.4990	0.0040
77.4979	0.0032	88865	77.4976	0.0037
52.4974	0.0022	66662	52.4967	0.0027
89.9972	0.0038	99994	89.9960	0.0045
47.4992	0.0020	62217	47.4962	0.0027

Coefficients
A0: -2.24993e+001
A1: +1.12502e-003
[A2: 0.0] Coefficient statistically not significant
Calculation method: Calc. Val.[bar] = A0 + A1 x pts + A2 x pts x pts

Additional Information:

Linear coefficients for approximatif calculations:
A0: -2.24993e+001
A1: +5.62510e+000
Calculation method: Calc. Val.[bar] = A0 + A1 x [mA]

Remarks

The mentioned measurement uncertainty corresponds with the standard uncertainty multiplied with the cover factor k=2 which, in the case of a normal distribution, corresponds with a confidence level of about 95%.

Different sources of uncertainty were taken into account to calculate the standard deviations.

13.2. Appendix B: Indicative example of Calibration Certificate for temperature transmitter

BELAC
Signatory to EA, ILAC and IAF Multilateral Agreements
Accreditation:202-CAL

Belgian Accreditation body

FLUXYS LABORATORY
Industrielaan 17
B-1070 Brussels
Tel. +32 (0)2 282 7811 - Fax. +32 (0)2 282 7799

FLUXYS
EXCELLENCE IN GAS TRANSPORT

CALIBRATION CERTIFICATE

Instrument:	Temperature Transmitter
Presented by:	Fluxys Metering Department Kunstlaan 31 B-1040 Brussels
Destination:	~~Reserve~~ BCAS
Date(s) of execution:	26/02/2009
Print Date:	27/02/2009
Total number of pages:	2
Reference:	TT/2009/02/I02608/E

Instrument Identification: Temperature Transmitter

Manufacturer:	Rosemount
Type:	T3144C
Serial Nr.:	2198638
Treatment Nbr.:	I02608

Reception date: **22/10/2008**

Calibration Conditions:

Laboratory Environment:
- Local gravity constant: 9.8113978 m/s^2
- Average atmospherical pressure during measurements: 1.02 Bar ± 0.01 Bar
- Average ambient temperature during measurements: 20.3 °C ± 0.5 °C
- Average relative humidity during measurements: 34 % ± 10 %
- Average instrument temperature during measurements: 20.3 °C ± 0.5 °C

Standard:
- Designation: PT25_1
- Type: Tinsley 5187SA
- Serial Nr.: 9540-5
- Calibration: Nederlands Meetinstituut 3241434.01 (20/02/2007)

Data Acquisition:
- Designation: Multi2
- Type: Agilent 3458-A option 002
- Serial Nr.: 2823A 26389
- Calibration: Fluke 452893 (31/10/2008)

Calibration Procedure:
SP PRT 2.5/01 Calibration of temperature
All instruments used for the calibration are calibrated and traceable to national and/or international standards.

Laboratory Responsible: Patricia Van Caneghem
Signature:

This certificate of calibration is issued in accordance with the conditions for accreditation of the Belgian Calibration Organisation.
This certificate may not be reproduced other than in full except with the written approval of th issuing laboratory.

Operator name: JMa

Calibrated device: Rosemount T3144C N° 2198638

Nominal range: 0.00 - 100.00 DegC
Installed Range: -9.94502 - 70.034 DegC
Calibrated range: -9.55 - 69.90 DegC
Output signal: 4-20 mA
Isolation resistance > 100 Mohm
Insertion depth = 230 mm

Shunt resistance: 50.0015 Ohm

Results of the data regression.

True Val. [°C]	Ref. Uncert. [°C]	Read Val. [Points]	Calc. Val. [°C]	Uncertainty: [°C]
-9.551	0.007	20395	-9.550	0.020
-5.194	0.007	24743	-5.203	0.020
-0.126	0.007	29816	-0.132	0.020
5.104	0.007	35052	5.103	0.020
10.244	0.007	40200	10.250	0.020
14.945	0.007	44899	14.947	0.020
20.065	0.007	50021	20.068	0.020
25.033	0.007	54993	25.039	0.020
30.078	0.007	60034	30.078	0.020
34.940	0.007	64908	34.951	0.020
39.959	0.007	69918	39.960	0.020
45.171	0.007	75128	45.169	0.020
50.008	0.007	79958	49.997	0.020
54.856	0.007	84816	54.854	0.020
59.984	0.007	89949	59.986	0.020
65.049	0.007	95017	65.052	0.020
69.904	0.007	99865	69.899	0.020

Coefficients

A0: -2.99398e+001
A1: +9.99737e-004
[A2: 0.0] Coefficient statistically not significant

Calculation method: Calc. Val.[°C] = A0 + A1 x pts + A2 x pts x pts

Additional Information:

Linear coefficients for approximatif calculations:
A0: -2.99398e+001
A1: +9.99737e-004
Calculation method: Calc. Val.[°C] = A0 + A1 x [Points]

Remarks
Length : 230 mm; Diameter : 6 mm.

The mentioned measurement uncertainty corresponds with the standard uncertainty multiplied with the cover factor k=2 which, in the case of a normal distribution, corresponds with a confidence level of about 95%.

Different sources of uncertainty were taken into account to calculate the standard deviations.

Uncertainty measurements are done according to EA-4/02: "Expression of the Uncertainty of Measurement in Calibration". The temperature scale used is ITS-90.

13.3. Appendix C: Indicative example of Fit curve of Turbine

74985

FLUXYS

EXCELLENCE IN GAS TRANSPORT

Fit-curve of turbine (CF = f (Q))

Date : 18/03/2004

			8 bar	H.P.
Meter kind :	instromet			
Serial number / year :	74985/2003	P (bara)	9	55
Date of calibration. :	01/12/2003	T° (°C)	7	7
Type of calibration. :	N.M.I. 54 & 8 bar	ρ (kg/m³)	7	50
NMI-certificate :	39502176	μ (Pa.s)	1.19E-05	1.29E-05
Diameter (mm) :	300			
HF (pulses/m3) :	632.882			

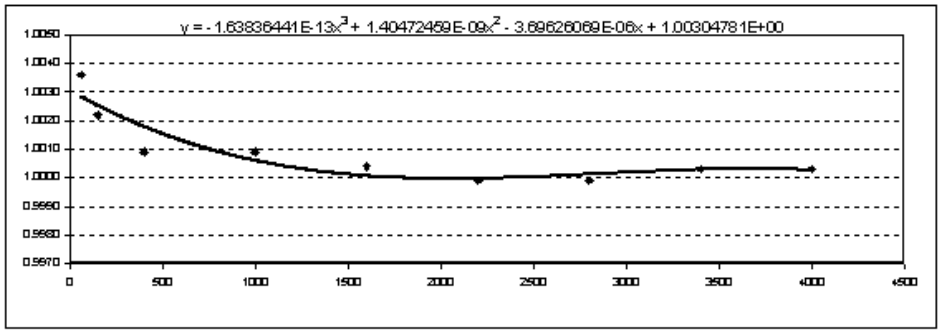
Q calib. Qr m3/h	% of Qmax	Deviation in %	Q measured Q m3/h	Reynolds number	Qr/Q	Results of the fit	difference
61	1.5	-0.36	60.52	2.77E+05	1.0036	1.0028284	-0.0007716
152	4	-0.22	151.30	6.93E+05	1.0022	1.0025191	0.0003191
400	10	-0.09	399.64	1.83E+06	1.0009	1.0017836	0.0008836
1000	25	-0.09	999.10	4.58E+06	1.0009	1.0005924	-0.0003076
1600	40	-0.04	1599.36	7.33E+06	1.0004	1.0000588	-0.0003412
2200	55	0.01	2200.22	1.01E+07	0.9999	0.9999704	0.0000704
2800	70	0.01	2800.28	1.28E+07	0.9999	1.0001148	0.0002148
3400	85	-0.03	3398.98	1.56E+07	1.0003	1.0002797	-0.0000203
4000	100	-0.03	3998.80	1.83E+07	1.0003	1.0002528	-0.0000472
Deviation in % = (Q measured - Q calibration) / Q calibration * 100							0.0000000

Common Parameters

Q brut max :	4000
HF Qmax (Hz) :	703.2022222
LF (m3/pulse) :	10

Parameters if Re not calculate by computer

a = A0 =	1.0030478E+00
b = A1 =	-3.6962607E-06
c = A2 =	1.4047246E-09
d = A3 =	-1.6383644E-13



For Fluxys : For G.T. Witnessed by:

13.4. Appendix D: Indicative example of turbine calibration sheet

TRANSCANADA CALIBRATIONS

Certificate No.	3028
Work Order:	08-100-593-05
Test Date:	30-Oct-08

		as found	as left
Applicant:	Fluxys SA	K Factor (p/m3)	313.597	313.597
Manufacturer:	Elster-Instromet	Change Gears:	51/58	51/58
Model:	SMRI-K (G4000)	Qmax:	6500	m3/h
Serial Number:	51814-1992	Qmin:	320	m3/h
Meter Size:	DN400	Direction:	Unidirectional	

Witness:	None
Tag Number:	N/A
Pipe Spool S/N:	9101622
Run Configuration:	Tube Bundle, UST 4000mm, Meter
Flow Conditioner:	Tube Bundle
Flow Conditioner S/N:	None
Comments:	None

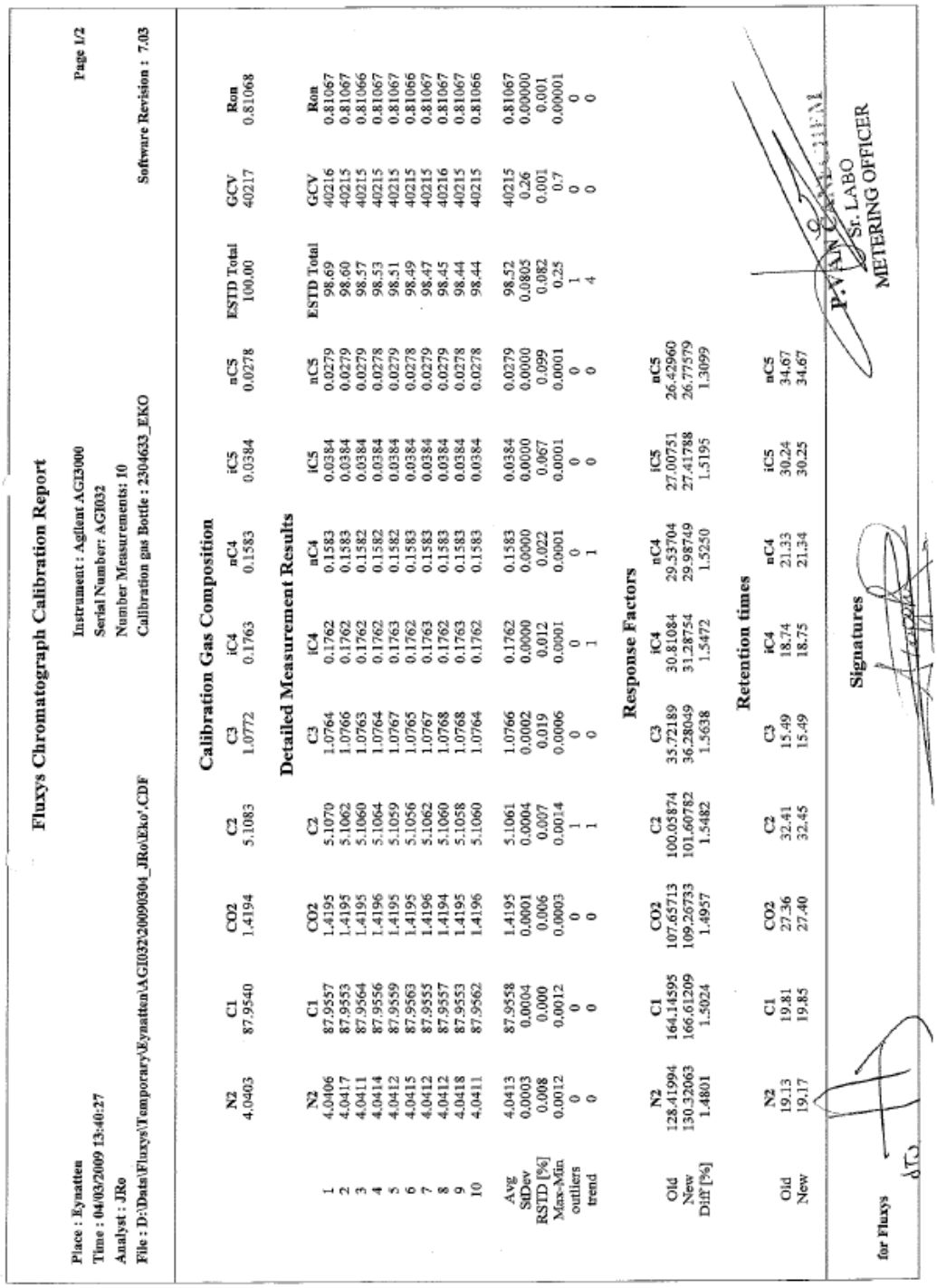
Average error	0.28	Test Points	8
Adjusting	0.00	Tested by	Jeff Dahlin

Uncorrected					Corrected			
MUT Flow (m3/hr)	Ref. Flow (m3/hr)	Re ($1xe^5$)	Deviation (%)	Stdev (2σ)	CMC (%)	Utot (%)	Deviation (%)	
7151.68	7131.16	23.26	0.29	0.01	0.19	0.19	0.29	
6545.56	6525.97	21.32	0.30	0.01	0.19	0.19	0.30	
5547.93	5530.88	18.09	0.31	0.01	0.19	0.19	0.31	
4543.39	4529.77	14.83	0.30	0.02	0.19	0.19	0.30	
3581.70	3572.25	11.73	0.26	0.02	0.19	0.19	0.26	
2619.40	2613.95	8.59	0.21	0.02	0.19	0.19	0.21	
1647.75	1645.41	5.39	0.14	0.02	0.19	0.19	0.14	
650.03	648.44	2.13	0.25	0.06	0.19	0.20	0.25	
338.20	337.85	1.11	0.10	0.08	0.23	0.24	0.10	
198.45	198.42	0.65	0.02	0.11	0.23	0.25	0.02	

PRELIMINARY DATA ONLY
NOT AN OFFICIAL CERTIFICATE

Pressure:	6175.47	(kPa)	Density:	45.85	(Kg/m3)	Medium:	Natural Gas
Temp:	27.03	(oC)	Compress:	0.8994		Site:	TCPL Stn. 41

13.5. Appendix E: Indicative example of a Calibration report of a gc



Fluxys Chromatograph Calibration Report

Page 1/2

Place : Eynatten
Time : 04/03/2009 13:40:27
Analyst : JRo
File : D:\Data\Fluxys\Temporary\Eynatten\AGI032\20090304_JRo\Eko'.CDF

Instrument : Agilent AGI3000
Serial Number: AGI032
Number Measurements: 10
Calibration gas Bottle : 2304633_EKO

Software Revision : 7.03

Calibration Gas Composition

	N2	C1	CO2	C2	C3	iC4	nC4	iC5	nC5	ESTD Total	GCV	Ron
	4.0403	87.9540	1.4194	5.1083	1.0772	0.1763	0.1583	0.0384	0.0278	100.00	40217	0.81068

Detailed Measurement Results

	N2	C1	CO2	C2	C3	iC4	nC4	iC5	nC5	ESTD Total	GCV	Ron
1	4.0406	87.9557	1.4195	5.1070	1.0764	0.1762	0.1583	0.0384	0.0279	98.69	40216	0.81067
2	4.0417	87.9553	1.4195	5.1062	1.0766	0.1762	0.1583	0.0384	0.0279	98.60	40215	0.81067
3	4.0411	87.9564	1.4195	5.1060	1.0763	0.1762	0.1582	0.0384	0.0279	98.57	40215	0.81066
4	4.0414	87.9556	1.4196	5.1064	1.0764	0.1762	0.1582	0.0384	0.0278	98.53	40215	0.81067
5	4.0412	87.9559	1.4195	5.1059	1.0767	0.1763	0.1582	0.0384	0.0279	98.51	40215	0.81067
6	4.0415	87.9563	1.4195	5.1056	1.0765	0.1762	0.1583	0.0384	0.0278	98.49	40215	0.81066
7	4.0412	87.9555	1.4196	5.1062	1.0767	0.1763	0.1583	0.0384	0.0279	98.47	40215	0.81067
8	4.0412	87.9557	1.4194	5.1060	1.0768	0.1762	0.1583	0.0384	0.0279	98.45	40216	0.81067
9	4.0418	87.9553	1.4195	5.1058	1.0768	0.1763	0.1583	0.0384	0.0278	98.44	40215	0.81067
10	4.0411	87.9562	1.4196	5.1060	1.0764	0.1762	0.1583	0.0384	0.0278	98.44	40215	0.81066
Avg	4.0413	87.9558	1.4195	5.1061	1.0766	0.1762	0.1583	0.0384	0.0279	98.52	40215	0.81067
StDev	0.0003	0.0004	0.0001	0.0004	0.0002	0.0000	0.0000	0.0000	0.0000	0.0805	0.26	0.00000
RSTD [%]	0.008	0.000	0.006	0.007	0.019	0.012	0.022	0.067	0.099	0.082	0.001	0.001
Max-Min	0.0012	0.0012	0.0003	0.0014	0.0006	0.0001	0.0001	0.0001	0.0001	0.25	0.7	0.00001
outliers	0	0	0	1	0	0	0	0	0	1	0	0
trend	0	0	0	1	0	1	1	0	0	4	0	0

Response Factors

	N2	C1	CO2	C2	C3	iC4	nC4	iC5	nC5
Old	128.41994	164.14595	107.65713	100.03874	35.72189	30.81084	29.53704	27.00751	26.42960
New	130.32063	166.61209	109.26733	101.60782	36.28049	31.28754	29.98749	27.41788	26.77579
Diff [%]	1.4801	1.5024	1.4957	1.5482	1.5638	1.5472	1.5250	1.5195	1.3099

Retention times

	N2	C1	CO2	C2	C3	iC4	nC4	iC5	nC5
Old	19.13	19.81	27.36	32.41	15.49	18.74	21.33	30.24	34.67
New	19.17	19.85	27.40	32.45	15.49	18.75	21.34	30.25	34.67

Signatures

for Fluxys

P. VAN CAUWENBERGH
Sr. LABO
METERING OFFICER

ATTACHMENT F: Congestion management

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2. MONITORING STORAGE SERVICES 2
   2.1. Criteria and simulations 3
   2.2. Electronic record and publication 4
3. CONGESTION 5

1. PRO-ACTIVE MEASURES

The Code of Conduct imposes the Storage Operator and the Storage User a number of minimum requirements that are to be complied with at all times in order to assure both an efficient and maximum use of Capacity for purposes of avoiding a.o. congestion (in accordance the Standard Storage Agreement).

In particular for the Storage Users, we remind the following obligations below as imposed by the Code of Conduct:

- the Storage User shall refrain from using the allocated Subscribed Capacities to hamper, limit or disturb the functioning of the market;
- the Storage User shall offer on the Secondary Market its Subscribed Capacities that it temporarily or permanently do not use;
- the Storage User who offers Subscribed Capacities on the Secondary Market is not allowed to stipulate conditions that may refrain the free tradability;
- the Storage User trading Storage Services on the Secondary Market by other means that the Secondary Market Platform, must notify (as soon as practically feasible) to the Storage Operator of each transaction. The minimum information to be communicated by the Storage User (like for example period, quantity of services and price) is defined in attachment C3 of the ACS.

In order to promote the maximum use of the Injection and Withdrawal Capacities (and as an additional anti-hoarding mechanism), the unused Injection/Withdrawal Capacity by the Storage User(s) is made available to other Storage Users through the DAM-NNS service (cf. attachment C1 of the ACS).

Finally, the Storage Operator publishes[1] at least on a weekly basis and on an aggregated level, the total volume and the average price of the services traded on the Secondary Market (i.e. both trades made via the Secondary Market Platform and over the counter transactions).

2. MONITORING STORAGE SERVICES

The Storage Operator monitors the use of the Storage Services that have been subscribed by the Storage Users on the Primary Market. This above active monitoring encourages an effective utilization of the subscribed Storage Services by the Storage Users.

[1] unless the confidentiality of information can not be guaranteed on aggregated level

2.1. Criteria and simulations

Following criteria are applicable for determining whether the subscribed Storage Services are used by the Storage Users:

- For the filling on the level of storage, in accordance with the provisions of attachment D1 of the ACS, the specific conditions applies by which the Storage User has to attain 90% of his GIS. This condition is used to determine whether the subscribed Storage Capacities are being used or not. Is considered as unused: the positive delta between the 90 % of the subscribed Storage Volume of the Storage User concerned and its actual Gas in Storage as per November 1st, taking into account the global utilization of all Storage Users.

- During the injection period, the Storage Operator simulates, at least on a weekly basis, if the Storage User can still reach a level of Gas in Storage of at least 90% on the 1ste of November of its subscribed Storage Volume per November 1st (assuming that the Storage User is using his Injection Capacity at the maximum rate). If the simulation indicates that the 90% level cannot be reached per November 1st, is considered as unused: the part of the positive delta between the level of 90 % of the subscribed Storage Volume of the Storage User concerned and the maximum level of Gas in Storage that it can reach per November 1st, taking into account the global utilization rate of all Storage Users.

  - The simulation at a certain date calculates the forecasted GIS ($GIS_{u,Td90\%}$) at the 1st November for a certain Storage User (u) as follows:

$$GIS_{u,Td90\%} = AvIN_{u,Td} * (T_{d90\%} - T_d) + GIS_{u,Td}$$

With:

T_d is the date on which the simulation is performed

$T_{d90\%}$ is the date of the 1st November for the 90% GIS rule in accordance with attachment D1 of ACS

$AvIN_{u,Td}$ is the average at T_d of the available Injection Capacity for a Storage User (u) between T_d and $T_{d90\%}$, taking into account (i) the forecasted Real Injection Capacity of the Storage User as described in attachment D1 of the ACS between T_d and $T_{d90\%}$ and (ii) the forecasted available Day Ahead Capacity between T_d and $T_{d90\%}$

$GIS_{u,Td}$ is the GIS of Storage User (u) at T_d

If the calculation is performed on an aggregated level for all Storage User, the same formula as hereabove will result in the global forecasted Gas in Storage ($GIS_{global,Td90\%}$).

- The forecasted GIS rate of a Storage User is calculated by the following ratio:

$$GIS\%_{u,} = GIS_{u,Td90\%} / RESV_{u,Td}$$

With, $RESV_{u,Td}$ is the Real Storage Volume of Storage User (u) the as described in attachment D1of the ACS, at T_d

- The forecasted global GIS rate is calculated by the following ratio:

$$GIS\%_{global,} = GIS_{global,Td90\%} / \sum_u RESV_{u,Td}$$

- The forecasted unused ratio of a Storage User taking into account the global GIS rate is then calculated as follows:

$$Unused\%_{u,} = Max\ (0,\ min\ (GIS\%_{global}\ ,90\%) - GIS\%_{u})$$

- The forecasted unused Storage Volume of a Storage User taking into account the global GIS rate is then calculated as follows:

$$Unused_{u,} = Unused\%_{u,} * RESV_{u,Td}$$

When Storage User reaches the 90% of its Gas in Storage before the point of time $T_{d90\%,}$ then no unused Capacity is considered for the related Storage User in that case.

2.2. Electronic record and publication

The Storage Operator maintains per Storage User an electronic record providing an overview between the allocated Storage Services and the effective individual utilization rate of Storage Services subscribed by the Storage User. The individual daily utilization rate of Injection and Withdrawal Capacity is the ratio between:

- the cumulative quantities of gas that were effectively injected or withdrawn by the Storage User on that day, and
- the maximum quantities of gas that the Storage User could have injected or withdrawn when using its maximum capacity on that day;

In addition, the Storage Operator during the injection period adds in the electronic record the outcome of the simulation whether the Storage User can still reach a level of Gas in Storage of at least 90% of its subscribed Storage Volume per November 1st.

Both the individual utilization rate (on a daily basis) and the simulation (on a weekly basis), are indicatively published via the Extranet Storage individually accessible by each Storage User. In addition, the Storage Operator forwards the electronic record towards the CREG at least on an annual basis (before the end of February of each year) and upon request of the CREG or in case of congestion (cf. point 3 below).

Finally, the Storage Operator also publishes the global utilization rate for subscribed storage services daily via the data publication platform (data.fluxys.com).

3. CONGESTION

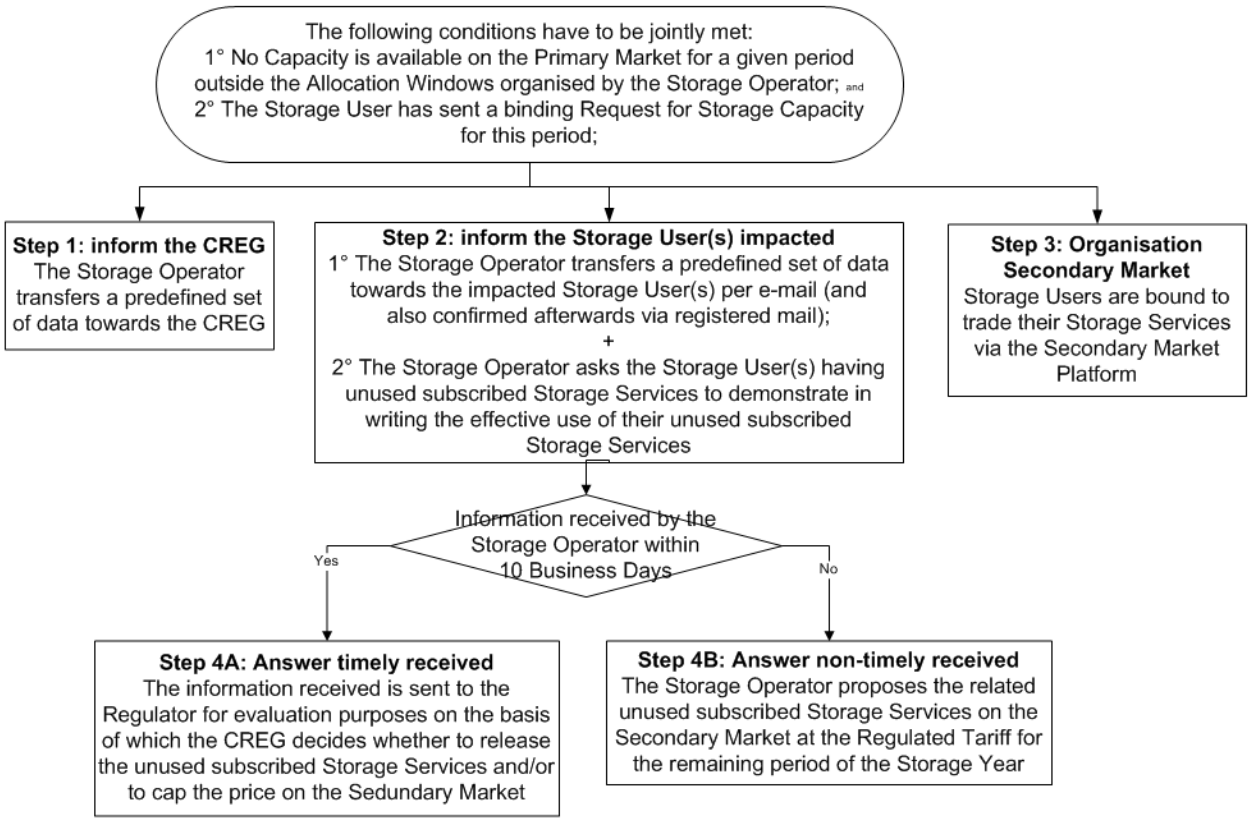
As for the Storage Services offered on the Primary Market, the Service Allocation Rules (Attachment C2 of the Access Code for Storage), already take into account specific allocation rules in case of congestion.

Outside the allocation windows, congestion occurs if:

(i) there is no Capacity available on the Primary Market for a given period; and

(ii) a Storage User sends a binding request for Storage Capacity for this period.

In line with section 1.4 of the Code of Conduct, the following procedure is applicable when congestion occurs:



- **Step 1: inform the CREG**

Upon occurrence, the Storage Operator transfers the following information/data towards the CREG:

- the Storage Installation concerned and the likely duration of congestion (in which a distinction is made between physical and contractual congestion);
- the Storage User(s) affected by the congestion;
- for each affected Storage User, the requested amount of firm Storage Services that cannot be allocated together with the desired contract duration by the Storage User;
- the amount of unused subscribed Storage Services per Storage User;
- the measures taken by Storage Operator to limit the congestion to a minimum;
- the measures proposed by the Storage Operator to remedy the congestion.

- **Step 2: inform the Storage User(s) impacted**

Furthermore, the Storage Operator immediately informs via email the Storage User(s) impacted by the congestion of the following information/data:

- the Storage Installation concerned and the estimated duration of the congestion;
- the measures taken by Storage Operator to limit the congestion to a minimum;
- the measures proposed by Storage Operator to remedy the congestion;
- on an aggregated basis, the requested amount of firm Storage Services that cannot be allocated together with the desired contract duration by the Storage User(s);

The above information is also confirmed towards the impacted Storage User(s) via registered mail.

In addition the Storage Operator also asks the related Storage User(s) having unused subscribed Storage Services to demonstrate in writing the effective use of the unused subscribed Storage Services listed previously in the communication towards the CREG (see step 1).

- **Step 3: Organization Secondary Market**

In accordance with article 20 §5 of the Code of Conduct, from the moment the Storage Operator has informed the Storage Users of congestion, the Storage Users are bound to trade their Storage Services via the Secondary Market Platform (i.e. trading over the counter is no longer allowed).

- **Step 4: Assessment Storage User's response regarding effective use**

Within the timeframe of 10 Business Days as from the receipt of the request from the Storage Operator, each Storage User concerned must confirm by letter the effective use of its Storage Services.

Following article 15 §1 of the Code of Conduct, the Storage User can demonstrate an effective use of the subscribed Storage Services amongst others using historical data related to the use of its Storage Services and his activities on the Secondary Market, and in each case by using his supply contracts

The Storage Operator provides the CREG a copy of the received information from the Storage User(s).

  - ***Case A: Answer timely received from the Storage User***

  The CREG evaluates the information received from the Storage User as to whether the effective use of the Storage Services is sufficient or insufficient. Based upon the assessment, the CREG decides whether to release the unused subscribed Storage Services, either in part or in full, or not. In addition, the CREG might decide to cap the price of the unused Storage Services made available on the Secondary Market Platform at the Tariff.

  Within 10 Business Days after receipt of the written release notification by the CREG, the Storage Operator must propose the related Storage Users' unused Storage Services for the remaining period of the current Storage Year at the Tariff of that Storage Year, under the condition however that these Storage Services have not been proposed already by Storage User itself on the Secondary Market Platform.

  In case there are multiple Storage Users offering unused Storage Volume of through the Secondary Market Platform, the Storage Operator will allocate this global unused Capacity to the Storage Users concerned in proportion to their share in the total offered unused Capacity. The Storage Operator applies hereby a fee, charged to the Storage User, as provided for in the Regulated Tariffs.

- ***Case B: Answer non-timely or not received from the Storage User***

In case the Storage Operator does not receive an answer from the Storage User in due time, the CREG will be informed and the Storage Operator subsequently offers the related unused subscribed Storage Services immediately after on the Secondary Market Platform for the remaining period of the current Storage Year at the Regulated Tariff of that Storage Year, under the condition however that these Storage Services have not been proposed already by Storage User itself on the Secondary Market Platform.

Storage Operator reimburses the tariff paid by Storage User for the released Storage Services, however decreased with a fee as provided for in the Regulated Tariffs, insofar these released Storage Services are subscribed by another Storage User.

ATTACHMENT G – Incident management

Table of contents

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1.2 Emergency as defined in the Security of Supply regulation ("SoS Emergency") 2

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1 Incident management and Emergencies

The Storage Operator has an plan for incident management covering the various incidents and emergencies that may occur as provided for in the Code of Conduct. Regarding such incidents and emergency, the Storage Operator has: (i) determined the various phases (ii) defined the procedure to be followed (iii) described the possible measures to take by the Storage Operator as well as by the Storage User (iv) in consultation with the Transmission Operator.

1.1 Emergency on the Storage Installation ("Storage Emergency")

Different incidents may occur at the Storage Facility of Loenhout that can have as a consequence that the system integrity of the Storage Installation cannot be maintained or which could escalate to such situation according to the assessment of the Storage Operator. Such situation is a situation of Storage Emergency.

1.2 Emergency as defined in the Security of Supply regulation ("SoS Emergency")

For Emergencies as defined in the Security of Supply regulation, we refer to article 12.2 of the SSA.

2 Measures in case of Emergency

In the event of an Emergency Storage, the following measures, listed below (but not restricted thereto), are applied by the Storage Operator or the Storage User upon request of the Storage Operator both as a reactive and as a proactive measure. The application of these measures depends on the physical Operating Mode of both the Storage Installation according to the Emergency procedure in this annex and the provisions of annex D1 of the ACS.

- Measures for the Storage Operator impacting the Storage User:
  - The interruption or reduction of the Injection flow;
  - The physical switching of Operating Mode;
  - The interruption or reduction of the Withdrawal flow (restricted to Storage Emergency).

- Measures by the Storage User upon request of the Storage Operator:
  - Forced Withdrawal necessitating the immediate Withdrawal of GIS;

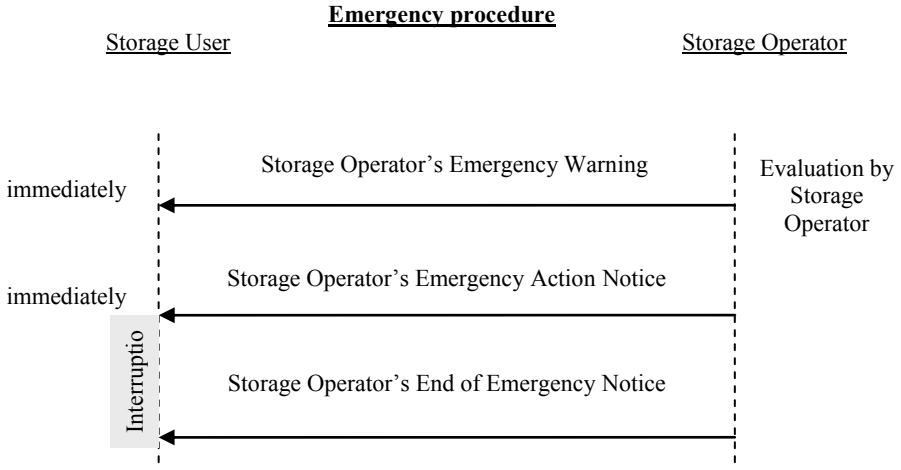
Such measures are temporary and have priority. They can, if necessary, without prejudice to the Emergency procedure, at any time without prior notice by the Storage Operator be changed and adjusted until the Emergency persists.

Based on version approved by the CREG on November 24th 2011

3 Emergency procedure

The Emergency procedure is applicable both for Storage Emergency. For SoS Emergency, the provisions of Security of Supply will apply.

In the following schedule, the Emergency procedure between Storage Operator and Storage User on the Storage Installation is reflected. This Emergency procedure consists of 3 steps:



In any case, the CREG and the relevant competent authority(ies) in case of an Emergency will be informed of its planned duration, its cause (if known), and the measures taken by the Storage Operator and consequences for the Storage User.

Phase 1 – Emergency Warning

In case of Emergency and based on the available information, the Storage Operator evaluates the measures to be taken on the Storage Installation and the consequences for the Storage User. The Storage Operator sends as soon as reasonably possible a "Storage Operator's Emergency Warning" announcing the possible impact on the Storage Services. If immediate action is required, the Storage Operator will not send a warning but immediately will send an Emergency action notice as provided for in phase 2 below.

Both the Storage User, the CREG, and the concerned competent authority(ies) are notified per telephone of such Emergency and receive a notice "Storage Operator's Emergency Warning" by fax confirming such warning.

Phase 2 – Emergency Action Notice

The evaluation of the measures to be taken by the Storage Operator can lead to the Storage Services to be reduced, interrupted or forced to withdrawal. The Storage Operator calculates the quantity (Injection or Withdrawal) to be reduced or interrupted per Storage User (pro rata the (last) Nomination) or as the case may be the quantity of forced Withdrawal to be withdrawn (pro rata the subscribed Capacities). During the Emergency, in line with the plan for incident management of the Storage Operator, the subsequent actions (as the case may be) are also always notified to the Storage User by means of an action notice for such measure.

The Storage Operator confirms to the Storage Users and the CREG the Emergency measure(s) through a "Storage Operator's Emergency Notice" by fax, specifying a start date/time and the action(s) to be taken by the Storage Users. In case of reduction or interruption the Storage Operator shall also constrain the Nominations by sending a revised "Storage Operator's Daily Transport Notice" (TDT) in accordance with the attachment D1 of the ACS.

The Emergency action(s) remain(s) valid until the Storage Operator sends a "Storage Operator's End of Emergency Notice" (see step 3 for more details).

As from the start of Emergency, up to the sending of a "Storage Operator's End of Emergency Notice", the Storage Operator will specify the quantity as mentioned in the "Storage Operator's Emergency Notice" to be reduced or interrupted or, as the case may be, for forced Withdrawal.

Phase 3 – End of Emergency Notice

When the Storage Emergency is no longer applicable, based on the evaluation of Storage Operator and the competent governmental authority(ies) (as the case may be), and that the Emergency action(s) are no longer required, the Storage Operator sends a "Storage Operator's End of Emergency Notice" by fax to the Storage User, and the CREG, specifying the Emergency end date, and lifting constraint(s) at the Interconnection Point or Storage Installation.

ATTACHMENT H1 – Forms

ATTACHMENT H1.A – SERVICES FORM

The forms to be used for the subscription of Storage Services and for the use of the Secondary Market are downloadable on the website of Storage Operator: www.fluxys.com.

ATTACHMENT H1.B – BANK GUARANTEE FORM

Document to be sent by the bank of the Storage User to
Fluxys Belgium, Avenue des Arts 31 – 1040 Bruxelles

BANK GUARANTEE ON FIRST REQUEST

Re: Guarantee number ……

You have concluded an Standard Storage Agreement (SSA) on ……...[*Date of the SSA + reference*]
with "S*torage User*" …..…..[*name, address, registration number, VAT number of end consumer*]

for the subscription and use of Storage Services offered by FLUXYS BELGIUM SA/NV.

We refer to the request of "S*torage User*" *...[name]…….*

to provide a bank guarantee upon first demand in your favour. Pursuant to the aforementioned request, we hereby irrevocably undertake to pay you on your first demand, irrespective of the validity and the legal effects of the above-mentioned contract and waiving all rights of objection and defence arising from said contract, any amount up to ……...[*amount of bank guarantee*] €.

The amount of the bank guarantee is irrevocably payable to you on your first request, by registered letter, up to the amount mentioned in it, without any justification to us, the issuing bank, and without any possibility for us to put forward either a refusal from the end consumer.

In case of bankruptcy, settlement, winding-up or any other equivalent proceedings instituted against the end consumer, the amount of the guarantee will be rightfully due to you.

Our guarantee expires automatically if your written request for payment and your written confirmation are not in our possession on or before ……...[*date of termination*].

The total amount of this guarantee will be reduced by any payment effected by us thereunder.

For the execution of this agreement and any consequences, our bank elects domicile at ……...[*address + contact services*].

Yours faithfully.

ATTACHMENT H1.C – SERVICE REQUEST FORM FOR CONTRACTING (SRFC) [1]

Example: for Long Term Storage Services

FLUXYS

Storage Services Request Form for Contracting (SRFC)

1. Storage User Information

Storage User : .....

Contact Person: .....

Phone: ..... Fax: .....

E-mail: .....

2. Request for Storage Services under the Subscription Window of MMM YYYY : "Binding Request"

Start Date		15/04/YYYY	
Number of Contract Years	**[between Y and Y whole years]**		
Maximum Request for SBU's	**[number of units]**		**in multiples of 4 311 SBUs*
Minimum Request for SBU's	**[number of units]**		

Storage User hereby

Signing Date: ..... **Signing Date:** .....

Name : ..... **Name :** .....

Position: ..... **Position:** .....

Signature: ..... **Signature:** .....

By singing this SRFC, Storage User acknowledges and accepts all the provisions of the corresponding TCSW

To be sent by registered mail to
Fluxys Belgium SA
Mrs. Huberte Bettonville
Fax: +32 (0) 2 282 02 50
E-mail: info.storage@fluxys.com

[1] Examples which can be adapted by Storage Operator in line with the offer and allocation of the respective Storage Services

Example: for Additional Services

FLUXYS

Storage Services Request Form for Contracting (SRFC)

1. Storage User Information

Storage User : .....

Contact Person: .....

Phone: .....

Fax: .....

E-mail: .....

2. Request for Addtional Storage Services (ASS) under the Subscription Window of mmm-yyyy : "Binding Request"

Start Date		**dd/mm/20xx**
End Date		**dd/mm/20xx**
Maximum Request for Unit of ASS	**[number of units]**	

**in multiples of XX units*

3.Storage User hereby

Signing Date :	.....	**Signing Date:**	.....
Name :	.....	**Name :**	.....
Position :	.....	**Position:**	.....
Signature :	.....	**Signature :**	.....

By singing this SRFC, Storage User acknowledges and accepts all the provisions of the corresponding TCSW

To be sent by registered mail to
Fluxys Belgium SA
Mrs. Huberte Bettonville
Fax: +32 (0) 2 282 02 50
E-mail: info.storage@fluxys.com

ATTACHMENT H1.D – SERVICE CONFIRMATION FORM FOR CONTRACTING (SCFC)[2]

Service Confirmation Form for Contracting (SCFC)

FLUXYS

Storage User Name:	
Commercial Reference:	

Storage Services at Storage Installation of Loenhout	Number of Units	Initial Tariff (in EUR)	Start date	End date
SBU (Standard Bundled Unit)	XXX		15/04/YYYY	
DAM / NNS membership	YES / NO		16/04/YYYY	

Storage User:

Date:
Name:
Position:

Signature:

Date:
Name:
Position:

Signature:

Fluxys Belgium:

Date:
Name: **Huberte Bettonville**
Position: **Director Commercial Regulated**

Signature:

Date:
Name: **Pascal De Buck**
Position: **Member of the Executive Board**
General Director Commercial

Signature:

[2] Example which can be adapted by Storage Operator in line with the offer and allocation of the respective Storage Services

ATTACHMENT H1.E – SERVICES REQUEST FORM FOR ASSIGNMENT (SRFA)

SERVICES REQUEST FORM for ASSIGNMENT (SRFA)

To	Storage Operator	**Copy to**	Assignee or Assingor
Fax		**Fax**	
reference			
From	Assignor or Assignee		
Our reference		**N° of pages**	
Tel			
Fax			
Date / time	dd/mm/yyyy hh:mm		

Subject Secondary market for Storage : Services Assignment Request

Dear,

Hereby Storage Operator confirms the Storage Service Assignment from (Assignor) to (Assignee) with the following characteristics:

Service	Injection / Storage / Withdrawal / ….	
Nature	Firm /Conditional /….	
Quantity assigned	XXX	UNIT
Unit Price	XXX	€
Assignment Start date	From dd/mm/yyyy	
Assignment End date	To dd/mm/yyyy	
Type of Assignment	in accordance with Attachment 1 article 17.9 of the SSA	
Assignee	Company	

Rights and obligations related to this service will be transferred from Assignor to Assignee during this Assignment period in accordance with the attachment 1 article 17.9 of the SSA

Best regards,

(Signature Assignor)	name	function

(Signature Assignee).	name	function

yellow fields shall be filled in

ATTACHMENT H1.F – SERVICES CONFIRMATION FORM FOR ASSIGNMENT (SCFA)

SERVICES CONFIRMATION FORM for ASSIGNMENT (SCFA)

To	Assignor	**Copy to**	Assignee
Fax		**Fax**	
Your reference			
From	Storage Operator		
Our reference		**N° of pages**	
Tel			
Fax			
Date / time	dd/mm/yyyy hh:mm		

Subject Secondary market for Storage: Services Assignment Confirmation

Dear,

Hereby (Assignor) requests Storage Operator for a Storage Service Assignment from (Assignor) to (Assignee)

Service	Injection / Storage / Withdrawal / ….
Nature	Firm /Conditional /….
Quantity assigned	XXX
Price	XXX
Assignment Start date	From dd/mm/yyyy
Assignment End date	To dd/mm/yyyy
Type of Assignment	in accordance with Attachment 1 article 17.9 of the SSA

Rights and obligations related to this service will be transferred from Assignor to Assignee during this Assignment period in accordance with the attachment 1 article 17.9 of the SSA

Best regards,

(Signature Assignor)	name	function

(Signature Assignee).	name	function

yellow fields shall be filled in

ATTACHMENT H1.G – ADDITIONAL CONDITIONS GAS PLEDGE

1. DEFINITIONS

1.1 Definitions

(a) Unless expressly defined in this attachment, words and expressions used in this attachment shall have the same meaning as set out in the Standard Storage Agreement.

(b) In addition, following definitions specifically apply to this attachment:

Secured Obligations means in relation to the Storage User, all present and future obligations and liabilities, whether actual or contingent, whether owed jointly or severally, of the Storage User to the Storage Operator under or in connection with this Standard Storage Agreement as amended from time to time.

Security means any mortgage, pledge, floating charge (*gage sur fonds de commerce/pand op handelszaak*), right of retention, privilege, right of set-off or other third party right or interest including assignment by way of security, reservation of title or any other security interest of any kind however created or arising or any other agreement or arrangement (including a sale and repurchase agreement) that has a similar effect.

2. REPRESENTATIONS AND WARRANTIES

2.1 Representations and warranties of the Storage User

The Storage User represents and warrants to the Storage Operator that, on the date on which the Gas Pledge is created in accordance with Article 14.3 of the Standard Storage Agreement:

(a) it owns the Pledged Natural Gas free and clear of any Security, other than the Gas Pledge and by operation of law. There is no floating charge (*gage sur fonds de commerce/pand op handelszaak*) or similar foreign law security in existence on its business, nor any mandate to create the same;

(b) the Pledged Natural Gas is not subject to any seizure (*saisie/beslag*) or other enforcement measure;

(c) the Gas Pledge does not violate any contractual or other obligation binding upon the Storage User; and

(d) the Gas Pledge constitutes legally binding obligations for the Storage User, enforceable in accordance with its terms and creates a valid first ranking pledge (*gage de premier rang/pand in eerste rang*) over the Pledged Natural Gas.

2.2 Continuing representations and warranties

The representations and warranties contained in Article 2.1 (*Representations and Warranties*) are made on the date on which the Gas Pledge is created in accordance with Article 14.3 of the Standard Storage Agreement and are deemed to be repeated so that they remain accurate at any time until the Gas Pledge shall have been finally discharged in accordance with Article 5 (*Discharge of the Gas Pledge*).

3. UNDERTAKINGS

3.1 Undertakings of the Storage User

(a) The Storage User procures that no executory seizure (*saisie exécutoire/uitvoerend beslag*) shall be made on the Pledged Natural Gas, and that any conservatory seizure (*saisie conservatoire/bewarend beslag*) thereon shall be lifted within thirty (30) Business Days of its first being made.

(b) The Storage User shall cooperate with the Storage Operator and within three (3) Business Days of such request sign or cause to be signed all such further documents and take all such further action as the Storage Operator may from time to time reasonably request to:

(i) create, perfect and protect the Gas Pledge whether under Belgian law or under any other law that may be applicable;

(ii) facilitate the enforcement of the Gas Pledge or the exercise of any rights vested in the Storage Operator; and

(iii) carry out the provisions and purpose of the Gas Pledge.

(c) The Storage User undertakes to make the Gas Pledge enforceable against third parties. All costs related thereto, including the costs for the creation, shall be borne by the Storage User. If the Storage Operator has advanced such costs, the Storage User undertakes to reimburse such costs to the Storage Operator within ten (10) Business Days.

3.2 Negative undertakings

The Storage User undertakes not to:

(a) create or permit the existence of any Security (other than the Gas Pledge) in respect of the Pledged Natural Gas or any part thereof (irrespective of whether such Security would rank behind the Gas Pledge); and

(b) take any action that could negatively influence the Gas Pledge or its value.

4. SCOPE OF THE GAS PLEDGE

4.1 Continuing security

(a) The Gas Pledge shall be a continuing security, shall remain in force until expressly released in accordance with Article 5 (*Discharge of the Gas Pledge*), and shall in particular not be discharged by reason of the circumstance that at any time no Secured Obligations exist or are due.

(b) The Storage Operator may at any time without discharging or in any way affecting the Gas Pledge:

(i) grant the Storage User any time or indulgence;

(ii) concur in any moratorium of the Secured Obligations;

(iii) amend, including by novation, the terms and conditions of the Secured Obligations;

(iv) abstain from taking or perfecting any other security and discharge any other security; and

(v) abstain from exercising any right or recourse or from proving or claiming any debt and waive any right of recourse.

4.2 Preservation of the Gas Pledge

In the event of an assignment, transfer, subrogation or novation of all or any of the rights and obligations under the Standard Storage Agreement, including (without limitation) for the purpose of article 1278 of the Belgian Civil Code, the Storage Operator shall preserve all of its rights with respect to the Pledged Natural Gas (including, for the avoidance of doubt, for the benefit of any transferee), so that the security created by this Gas Pledge shall be automatically transferred to the assignee or transferee or, as the case may be, remain with the Storage Operator.

5. DISCHARGE OF THE GAS PLEDGE

(a) The Gas Pledge shall be discharged by, and only by, the express release thereof granted by the Storage Operator or by means of a final court decision which can no longer be appealed ordering the release of the Gas Pledge.

(b) The Gas Pledge shall be released six (6) months after the Storage Operator has declared that all Secured Obligations have been fully and finally discharged and there is no possibility of any further Secured Obligations coming or re-entering into existence.

(c) Any release or discharge of the Gas Pledge shall be null and void and without effect if any payment received by the Storage Operator and applied towards satisfaction of all or part of the Secured Obligations:

(i) is avoided or declared invalid as against the creditors of the maker of such payment; or

(ii) becomes reimbursed by the Storage Operator to a third party; or

(iii) proves not to have been effectively received,

and the Storage Operator shall be entitled to enforce the Gas Pledge as if such release or discharge had not occurred.

6. DUTIES OF THE STORAGE OPERATOR

(a) Neither the Storage Operator nor its officers, directors, employees or any party acting as attorney in its name and on its behalf shall be liable for any acts or omissions with respect to the enforcement of the Gas Pledge or the losses arising in connection with the exercise of any of its rights, powers and discretions under the Standard Storage Agreement, save for liabilities and expenses arising from its gross negligence (*faute lourde/zware fout*) or wilful misconduct (*fraude/bedrog*).

(b) The Storage Operator shall not be under any obligation to take any steps necessary to preserve any rights under the Gas Pledge against any other parties but may do so at its option.

7. WAIVER

No failure or delay by the Storage Operator to exercise any right, power or remedy under the Standard Storage Agreement shall operate as a waiver thereof nor shall any single or partial exercise of any right under the Standard Storage Agreement exclude the further or other exercise of such right or any other right under the Standard Storage Agreement by the Storage Operator. The remedies provided in this agreement are cumulative and are not exclusive of any remedies provided by law.

8. MISCELLANEOUS

(a) In case of enforcement, the Storage Operator shall address a petition to the Presiding Judge of the Commercial Court to obtain the authorisation to sell the pledge. For reasons of objectivity, non-discrimination and transparency the Storage Operator shall indicate in such petition that it prefers a public sale on the gas market [Hub-ZTP].

(b) The Storage Operator shall reasonably aim to achieve that the value of the quantity of the Pledged Natural Gas expressed in MWh which shall be sold in case of enforcement, shall at least be equal to the amount of the payable invoices of the Storage User after completion of the sales.

(c) The Storage Operator shall offer the Pledged Natural Gas of the Storage User on the gas market [Hub-ZTP] in negotiable parts going from 1 000 MWh to 5 000 MWh on a daily basis (unless otherwise determined on the basis of the market conditions then in force), and during the number of days necessary to settle the amount of the payable invoices.

9. APPLICABLE LAW

For the sake of clarity, the Gas Pledge and the enforcement of the Gas Pledge shall be governed by and interpreted in accordance with the laws of Belgium.

ATTACHMENT H2 – Data Platforms

ATTACHMENT H2.A – TERMS AND CONDITIONS FOR ACCESS AND USE OF ELECTRONIC DATA PLATFORM FOR STORAGE

These standard terms and conditions (the "**Agreement**") for access to Fluxys Belgium's Electronic Data Platform for Storage applications are entered into between:

1. **FLUXYS BELGIUM NV/SA**, a public limited company organized and existing under the laws of Belgium, having its registered office at 1040 Brussels, Avenue des Arts 31, entered in the registry for legal entities under the number 0426.047.853, here duly represented by

   [First name, Surname, position]
   [First name, Surname, position]

   Hereafter referred to as "**Storage Operator**"

AND

2. XXXXXXXXXX, a company organised and existing under the laws of XXXXXX, having its registered office at XXXXXXXXXXXXXXXXX, entered with the Company Register under the number XXXXXXX, here duly represented by

   XXX

   Hereafter referred to as "**Storage User**"

Storage Operator and Storage User may hereafter be individually referred to as a "**Party**" and collectively as the "**Parties**".

WHEREAS:

A. The Parties have entered into a Standard Storage Agreement on XXXXXXX (the "SSA").

B. In the framework of the SSA, Storage Operator is willing to offer Storage User access to and use of the internet application EDP-Storage (including Extranet Data and Webtrack Data) and Storage User is willing to have access to and use this application under the terms and conditions as set forth in this Agreement. Such access will be granted to Storage User who identifies and authenticates itself through digital signature technology, as further specified in the Agreement. This Agreement

describes in further detail under which conditions access is granted to Extranet Data and Webtrack Data, and under which conditions the digital signature certificates are to be procured and used.

IT HAS BEEN AGREED THAT:

1. DEFINITIONS

1.1. The terms and expressions used in this Agreement will have the same meaning as given to them in the SSA. In addition, the terms and expressions below will have the following meaning in this Agreement:

Application means the internet application "Electronic Data Platform for Storage" or ("EDP-Storage"), provided by Storage Operator to Storage User under the terms and conditions of this Agreement, which allows the Storage User access to and use Extranet Data and Webtrack Data.

Certificate means a data record produced by a Certification Authority that, at least:

(i) identifies the Certification Authority;

(ii) identifies or names the subscriber;

(iii) contains the subscribers' public key;

(iv) identifies the Certificates' operational period;

(v) contains a serial number; and,

(vi) is digitally signed by the Certification Authority.

Certificate Revocation List or **CRL** means a periodically issued list, digitally signed by the relevant Certification Authority, of Certificates that have been suspended or revoked by that Certification Authority prior to their expiration date.

Certification Authority means an entity authorized to issue, manage, revoke and renew Certificates.

Data includes

(i) The Extranet Data;

(ii) The Webtrack Data.

Extranet Data: means the system part of the Application, as evolving from time to time, which allows Storage User to consult Extranet Data regarding the Services Storage User contracted for and include mainly data for the future:

(i) the Subscribed Capacity, including Injection Capacity, Storage Volume and Withdrawal Capacity rights. These capacity rights are given on a daily basis;

(ii) The Real Capacities, including Real Injection Capacity, Real Storage Volume, Real Withdrawal Capacity; These real capacities are given on a hourly basis;

(iii) Gas In Storage.

Intellectual Property Rights means patents, trade marks, service marks, logos, get-up, trade names, internet domain names, rights in designs, copyright (including rights in computer software) and moral rights, database rights, semi-conductor topography rights, utility models, rights in know-how and other intellectual property rights, in each case whether registered or unregistered and including applications for registration, and all rights or forms of protection having equivalent or similar effect anywhere in the world.

Public Key Infrastructure or **PKI** means the architecture, organisation, techniques, practices and procedures that collectively support the implementation and operation of a certificate-based public key cryptographic system.

Reader means a physical person linked to Storage User's Certificate who is entitled to consult the Application.

Services means the Storage Services which the Storage User has acquired in the Storage operated by the Storage Operator by means of a SSA concluded with Storage Operator or by means of an assignment concluded with another Storage User with regard to such services.

Validator means a physical person linked to Storage User's Certificate who is entitled to:

(i) consult Extranet Data and Webtrack Data; and

(ii) create, edit and submit Data to Storage Operator for the account of Storage User on Extranet Data and Webtrack Data.

Webtrack Data: means the system part of the Application, as evolving from time to time, which allows Storage User to consult webtrack data regarding the Services Storage User contracted for and include mainly data in the past on:

(i) Gas in Storage;

(ii) Energy allocation; and

(iii) Metering data.

Working Hours means from Monday to Friday between 9 am and 5 pm, except during bank holidays or Storage Operator's general holiday.

1.2 Plural forms include the singular and vice versa;

1.3. Contact Details:

(i) Storage Operator:
Fluxys Belgium
Commercial Department
Kunstlaan 31 Avenue des Arts
1040 Brussels
Tel.: +32 2 282 7132
E-mail: info.storage@fluxys.com

(ii) Storage User:
XXX
XXX
XXX
XXX
XXX

2. SUBJECT

2.1. Storage Operator offers Storage User access to and use of the Application and Storage User accepts the terms and conditions for access to and use of the Application as set forth in this Agreement.

2.2 Storage Operator will make the Application accessible to Storage User on a non-exclusive and non-transferable basis as from the moment Storage User has become a certified Storage User according to the procedure as set out in article 5 of this Agreement.

2.3 This Agreement does not alter nor affect the Parties' rights and obligations under the SSA, unless expressly provided for. In case of inconsistency between this Agreement and the SSA, the SSA will prevail at any time. All issues not specifically or in full provided for in this Agreement will be governed by the respective provisions of the SSA, which will be fully applicable, possibly in addition to the terms of this Agreement. Also, the Data obtained through the Application can under no circumstances amend, restrict or extend the Parties' rights and obligations under the SSA.

2.4 The Application is accessible through the internet. In this regard, Storage User acknowledges that the internet is an open international network whose characteristics and particularities are well known to it. Storage User agrees that Storage Operator will not be held liable for any (direct or indirect) damage Storage User might incur due to the use of the internet. Storage Operator reserves the right to modify at any time the electronic means of communication used for the services offered through the Application.

2.5 Storage Operator reserves the right at any moment to make all modifications likely to improve or expand the operation of the Application or simply to ensure its maintenance. Storage Operator will notify Storage User in due time of any change in the Application.

3. TERM & TERMINATION

3.1. Term

The Agreement enters into force on the date of execution by both Parties and will remain in force and effect until terminated by either of the Parties in accordance with the terms of this Agreement.

3.2 Termination

3.2.1 Storage Users may terminate the Agreement at any time, given a one (1) months' notice by registered mail.

3.2.2 Storage Operator may terminate the Agreement at any time in writing with immediate effect and as of right in case:

(i) of termination of the SSA, for whatever reason;

(ii) Storage User has committed a material breach under this Agreement, which has not been remedied within eight (8) calendar days as from receipt of notice hereto; or,

(iii) of a default or breach by Storage User, not capable of remedy, it being understood that the use of the Application by Storage User which adversely affects the smooth operation or the image or the reputation of Storage Operator (a.o. undue or fraudulent use of the Data and/or Application), will be considered as a breach not capable of remedy with respect to the use of the data platform.

(iv) a binding decision of a competent authority, such as the CREG, regarding amongst others: the refusal to integrate certain costs in Storage Operator's regulated tariffs or the validity and/or the regulatory regime of the present Agreement.

Termination taking place in accordance with article 3.2.2 of this Agreement will take place without the need for a court's intervention and without compensation for termination being due by the terminating Party.

4. FEE

4.1 Access and use of the Application will be free of charge except where expressly otherwise provided for.

5. ACCESS & USE OF THE APPLICATION

5.1 Access to the Application

5.1.1 Storage Operator grants Storage User a temporary, personal, non-transferable and non-exclusive right to use the Application for internal business purposes only, in accordance with the technical stipulations communicated to Storage User and only in the framework of the performance of the SSA and its Services subscribed there under.

5.1.2 Access to the Application is based on digital Certificates. In order to access the Application, the Storage User must first at its own expense and risk apply to an accepted Certification Authority, which for the purposes of this Agreement shall either be Verisign Inc. or GlobalSign N.V., or their Affiliated Companies, in order to obtain one or more Certificates. Storage User must at its own expense and risk:

(i) apply for and obtain a Certificate; and,

(ii) purchase all necessary hardware, software and licences, if any, for the use of the Certificate and/or Application. All costs related to the application and administration of the Certificate, including but not limited to the issuance, renewal and/or revocation of the Certificate, will be paid by Storage User.

5.1.3 To obtain access to the Application, Storage User can only use a Certificate of category [1] issued by VeriSign or Globalsign. Certificates issued by any other Certification Authority will not be accepted.

5.1.4 If Storage User has obtained a Certificate, Storage User must apply for access to the Application by:

(i) returning a signed copy of this Agreement and the filled out and signed "EDP-Storage access form" as enclosed to this Agreement as Appendix 1; and,

(ii) communicating the public key of its Certificate to Storage Operator.

5.1.5 The "EDP-Storage access form" must contain the following information:

(i) whether Storage User's Certificate is generic (i.e. in the name of Storage User) or nominative (i.e. in the name of specific physical person);

(ii) If Storage User's Certificate is nominative, the full identity of the physical person; and, the role attached to the Certificate or granted to such physical person using the private key associated to such Certificate, i.e. guest, Reader, or Validator.

5.1.6 Upon receipt of Storage User's duly filled out "EDP-Storage access form", Storage Operator will handle Storage User's access request and will do its reasonable efforts to grant Storage User access to the Application as soon as possible. In principle, access will be granted within ten (10) working days as from the access request but this timing is only indicative and is under no circumstances binding towards Storage Operator. If access is granted, Storage Operator will provide Storage User a manual on the use of the Application, which may be amended from time to time.

5.1.7 Based on the public key and the information provided for by Storage User in the "EDP-Storage access form", Storage Operator will configure its systems to grant access to the Application to any person using Storage User's (private) keys matching the public keys mentioned in Storage User's

Certificates and limited to the role attached to such Certificate as mentioned in the "EDP-Storage access form".

5.1.8 Only one Validator may be mentioned in connection with each Certificate supplied by Storage User.

5.1.9 Storage User undertakes to inform Storage Operator immediately upon any change in the power or capacity of any of its Readers or Validators.

5.1.10 Storage User's usage of the Application and the actions performed under this Agreement will be logged and stored by Storage Operator for monitoring and analysis purposes and for as long as Storage Operator deems it necessary.

5.1.11 Storage User itself must provide, at its own expense and its own risk, all hardware required to use and access the Application. In order to so, Storage User shall have:

(a) a PC with an operating system such as Windows XP;

(b) a modem; and,

(c) access to the internet via an internet-browser: Internet Explorer from version 6.0.

These requirements may be modified by Storage Operator from time to time, given possible technological evolutions. Such modifications will be notified to the Storage User by Storage Operator in accordance with article 9.6 of this Agreement.

5.2 Intellectual Property Rights

The Intellectual Property Rights associated with the Application and its component parts belong exclusively to Storage Operator and/or its licensors. Storage User undertakes to respect the concerned rightholders' Intellectual Property Rights to works, computer software and databases, made available to it, in whatsoever form, with due regard to applicable national and international copyright, software and database protection laws.

5.3 Availability of the Application

5.3.1 The Application is intended to be accessible 24 hours per day and 7 days per week, except as otherwise indicated. Assistance in case of technical problems or unavailability of the Application for whatsoever reason or the helpdesk will only be assured during Working Hours. Storage Operator reserves the right at any moment to suspend or otherwise limit the availability of part or all of the Application from time to time to make all modifications likely to improve or expand the operation of the Application or simply to ensure its maintenance. Storage Operator will notify Storage User in due time of any change in the Application or any such unavailability and will use its reasonable endeavours to keep the unavailability to a minimum.

5.3.2 The unavailability of the Application and in general of EDP-Storage, whether or not due to "Force Majeure", will not affect Storage User's rights under the SSA.

5.3.3 Storage Operator may block Storage User's access to the Application at any time, with immediate effect and as of right, without giving right to compensation and without affecting the Parties' rights and obligations under the SSA:

(i) In case of termination of this Agreement for whatever reason;

(ii) If Storage User's Certificate is revoked or suspended for whatever reason and published as such on a CRL;

(iii) Upon Storage User's written request to block or delete its account for whatever reason; and,

(iv) For technical reasons affecting Storage Operator's IT-system(s).

5.4 **Access to Data**

5.4.1. For the avoidance of doubt, Storage Operator grants the Storage User a temporary, personal, non-transferable and non-exclusive right to use the Application, including the Data, for internal business purposes only, in accordance with the technical stipulations communicated to the Storage User and only in the framework of the performance of the SSA and the ACS.

5.4.2. The Storage User's Data retrieval by using the Application and the actions performed under the Agreement will be logged and stored by Storage Operator for monitoring and analysis purposes and as long as Storage Operator it deems necessary.

6. LIMITATION OF LIABILITY

6.1 **Storage Operator's liability**

6.1.1 Storage Operator makes no warranty that access to or functioning of the Application will be uninterrupted, timely, secure, effective, and reliable or error free, since the provision of the services under this Agreement depends amongst others on the proper functioning of the telecommunications network/internet. The use of the Application and Data is at Storage User's own discretion and risk. Storage User alone is responsible for any damage to its or others' computer system/s, telephone/s, fax or other devices or loss of Data.

6.1.2 Storage Operator shall make no warranty and will not be liable as to the up-dating, the correctness, the accuracy, or completeness of the Data provided on and the good working of the Application and/or the Certificates. The Storage User acknowledges that the Data may not always be checked and /or validated by Storage Operator. For the avoidance of doubt, the lack of availability of the Application will under no circumstances affect Parties' rights and obligations under the SSA or with regard to the Services.

6.1.3 Storage User acknowledges that the security of the PKI and related procedures are not the responsibility of Storage Operator, Storage Operator being a third party to the PKI.

6.1.4 Storage Operator will under no circumstances and to the extent permitted by applicable law, be liable to Storage User for any direct or indirect, material or immaterial damage, of whatever nature, suffered by Storage User arising out of or in connection with this Agreement, including but not limited to loss of profits, loss of business expectations or opportunities, loss of contract, damage to third parties or any other consequences that might result from the inaccuracy of the Application, the lack of availability of the Application, the use of the Application provided under this Agreement or the use of Certificates.

6.1.3 Storage Operator will only be liable towards Storage User for direct damages resulting from its wilful misconduct regarding the Application.

6.2 **Storage User's liability**

6.2.1 Storage User is the sole responsible with regard to the use of:

(i) the Data

(ii) the Certificate; and,

(iii) the Application in general.

For the avoidance of doubt, Storage User alone is responsible for the administration, including but not limited to the application, revocation and/or suspension-, distribution, circulation, copying of its Certificate and/or private key and for the use of its Certificate by all (un)authorised persons and/or third parties. Storage User must take all appropriate measures to secure its Certificate and the related private keys.

6.2.2 Storage User acknowledges that Storage Operator may rely on the Certificate, which has not been published on the CRL, to grant access to the Application.

6.2.3 Storage User will hold harmless and indemnify Storage Operator for any claim by any third party, including the data subject, relating to the use of the Application, the use of the Certificate by (un)authorised persons, the transfer of personal data to Storage Operator and in general relating to this Agreement and for any claims, demands and liabilities for any direct or indirect, material or immaterial damages which Storage Operator may suffer due to any gross negligence or wilful misconduct by Storage User, its representative or third party that is directly or indirectly involved in the performance of this Agreement.

6.3 **Warranties**

Storage User warrants and guarantees that the Validator is authorised to legally bind Storage User, including but not limited to in conformance with any statutory provision.

7. FORCE MAJEURE

7.1 Without prejudice to article 6 of this Agreement, neither Party shall be liable, in contract or in tort, to the other Party for any default or delay in performance of any of its obligations under this Agreement which is due to reasons or events beyond its reasonable control, which prevents such Party wholly or in part from fulfilling its obligations under this Agreement. Those events include, but are not limited to: acts of God, perils of the sea or air, fire, flood, drought, explosion, sabotage, accident, embargo, riot, civil commotion, including acts of local government and parliamentary authority; breakdown of equipment and labour disputes of whatever nature and for whatever cause arising including (but without prejudice to the generality of the foregoing) work to rule, overtime bars, strikes and lockouts and whether between either of the Parties and any or all of their employees and/or any other employer and any or all of their employees and/or between any two or more groups of employees (and whether of either of the Parties or any other employer). Hacking or malicious interference of third parties prejudicing the electronic facilities and/or the Application of Storage Operator and software, hardware, telecommunication or other network failures, interruption, disruptions, malfunctions

or computer viruses shall likewise be considered as Force Majeure for Storage Operator.

7.2 Promptly upon the occurrence of an event that a Party considers may subsequently lead it to claim Force Majeure relief under this Agreement on account thereof, the Party affected shall give notice to such effect to the other Party, describing such event and the obligations performance of which could reasonably be expected to be delayed or prevented thereby.

7.3 In the event any Party claims Force Majeure relief under this Agreement, it shall promptly notify the other Party in writing of the event of Force Majeure, its expected duration, the estimated effect thereof upon the affected Party's ability to perform its obligations hereunder and the actions that will be undertaken to remedy the Force Majeure event. The affected Party shall promptly notify the other Party when the Force Majeure event has ceased to affect its ability to perform its obligations pursuant to this Agreement.

7.4 Each Party shall use all reasonable efforts to correct and remedy a Force Majeure event, which affects its performance under this Agreement. Neither Party, however, will be required to resolve a strike, lockout or other labour dispute in any manner in which it does not deem advisable.

8. LEGISLATION ON THE PROTECTION OF PRIVACY

8.1 The operation of its IT-system and the Application and the execution of other contractual obligations may require that Storage Operator processes personal data, such as data relating to Storage User's employees using the Application or applying for access, within the meaning of European and/or Belgian data protection legislation. Where applicable, Storage Operator undertakes to comply with the applicable legal and statutory data protection provisions. Storage Operator is dedicated to the fair processing of personal data.

8.2 The personal data is processed by Storage Operator and/or by Storage Operator's Affiliate, in its/their capacity as controller(s), for the following purposes:

(i) access administration and control of the Application;

(ii) Storage User relationship management;

(iii) the prevention of abuse and fraud;

(iv) for statistical purposes;

(v) for evidence purposes; and,

(vi) for compliance with its legal and regulatory obligations.

8.3 Furthermore, Storage User acknowledges and approves that personal data may be communicated to a hosting services provider with whom Storage Operator has made appropriate agreements regarding the protection of personal data. The data subject likewise has the right to consult its personal data by contacting Storage Operator in writing, or, where appropriate, to ask for rectification of the data that concerns it. The data subject also has the right to object to the processing of its personal data, according to applicable data protection legislation.

8.4 Where applicable, Storage User warrants and represents that:

(i) it will solely communicate personal data to Storage Operator, on having given the data subject the appropriate legal information as regards the data processing; and,

(ii) the data subject has given its unambiguous consent to transfer its personal data to countries outside the European Economic Area which may not have well developed data protection legislation when compared to European law.

8.5 As required by applicable data protection legislation, Storage Operator follows adequate security procedures and takes measures to ensure that the personal data processed is not lost, misused, altered, damaged or destroyed or accidentally disclosed to a third party. Storage Operator will not disclose personal data to any other third party unless it is requested to do so by law or by the CREG.

9. MISCELLANEOUS

9.1 Assignment

Storage User may not transfer or assign, part or all, of its rights and obligations under (a part of) the Agreement.

9.2 Severability

If any of the provisions of this Agreement is invalid or unenforceable, the remaining (part of the) provision(s) remain(s) valid and enforceable.

In the event of such invalidity or unenforceability, the Parties must try to replace the invalid or unenforceable provision by a valid and enforceable provision that is as close as possible to the meaning and economic effect of the original provision.

9.3 Waiver

Failure or neglect by a Party to enforce at any time any of the provisions hereof shall not be construed nor shall be deemed to be a waiver of the Parties' rights hereunder nor in any way affect the validity of the whole or any part of this Agreement, nor prejudice Parties' rights to take subsequent action.

9.4 Headings

All headings in the Agreement are inserted only for the convenience and ease of reference and are under no circumstances to be considered to define or limit the scope of any provision, article or paragraph of the Agreement.

9.5 Confidentiality

The Parties undertake to keep confidential all confidential data which they are informed of as part of the negotiations, performance and the execution of the Agreement, in compliance with applicable legislations and with their internal guidelines, if any.

The Agreement and all information obtained hereunder by one Party from the other Party shall be treated as confidential. If, and only to the extent that, such disclosure is required for the proper performance of their obligations in relation to the Agreement, such confidential information may be disclosed to their appointed members, staff, employees, agents, contractors, consultants and/or certificate holders. In such case, such disclosing Party shall cause its appointed members, staff, employees, agents, contractors, consultants and/or certificate holders to treat the information in accordance with the present confidentiality provisions. The Parties shall exercise due precaution to avoid improper disclosures of confidential information.

No Party shall disclose confidential information to any third party without the prior written consent of the other Party, which shall not unreasonably be withheld. No prior written consent is required for disclosure of confidential information obtained under the Agreement to an Affiliated Company, provided that such release of information is required for such Party's proper performance under the Agreement and subject to the first paragraph of the present article. In such case, the releasing Party shall ensure that its Affiliated Company shall execute written undertakings as to confidentiality.

This confidentiality obligation shall not apply to information which:

(i) is publicly available at the time it is made available to the receiving Party or subsequently becomes generally available to the public other than as a result of disclosure or other act or omission by the receiving Party or any of its employees or otherwise contrary to its obligations of confidentiality;

(ii) was available (as can be demonstrated by its written records) to the receiving Party or to any of its employees, prior to the supply of such confidential information by the other Party, and which is free of any restrictions as to its use for disclosure; or

(iii) the relevant Party is required by applicable law, regulation or by the requirements of any regulatory or other authority or court order to disclose. In the latter case, the relevant Party must inform its counterparty of any such obligation and disclosure.

Where disclosure is made to any third party, appropriate safeguards shall be made as a prerequisite to such disclosure to prevent said third party from making any further disclosure of such information without the written consent of the Parties.

9.6 Modifications

Storage Operator reserves the right to modify the Agreement, after approval of the CREG, at any time, subject to notifying the Storage User by appropriate means, including electronic means of communication.

Such modification shall enter into force fourteen (14) calendar days from the date of its notification to Storage User, if Storage User has not explicitly signalled by registered mail that it refuses to be bound by the new conditions within that deadline.

If Storage User does not agree with such modification, Storage User may terminate the Agreement in writing with immediate effect on the day the modification would have come into effect.

9.7 **Governing Law and Jurisdiction**

9.7.1 This Agreement shall be governed by, interpreted and construed in accordance with the laws of the Kingdom of Belgium. The application of the United Nation Convention on Contracts for the International Sale of Goods to this Agreement is explicitly excluded.

9.7.2 Any disputes relating to (the interpretation, execution, dissolution or cancellation of) the Agreement will be submitted to the exclusive jurisdiction of the courts of Brussels.

* * *

The Agreement is made up in Brussels on …….. in two (2) original copies; each Party acknowledges receiving one (1) original copy.

FOR THE PARTIES:

STORAGE USER:

Name: XXX
Function: XXX

FLUXYS BELGIUM:

Name:	XXX	Name :	XXX
Function:	XXX	Function:	XXX

Appendix 1: "EDP-Storage access form"

ELECTRONIC DATA PLATFORM FOR STORAGE ACCESS FORM

DETAILS OF REQUEST

Request type

Certificat to (re)-acknowledge (*)	
Change of Roles attached to certificate	
Delete Storage User account	

General certificate information

Name	
Surname	
Nationality (country)	
E-mail address	
Postal address	
Telphone number	
Mobile number	
Fax number	
Official name of company or organisation that employs requester	
Certicicate type	

Roles attached to certificate

- Reader
- Validator

(*) please mail the puble key of your personal certificate to (re) acknowledge as an attachement to this form to info.storage@fluxys.com

REQUESTER / CONTACT PERSON

Name and Surname	
Date and Signature	

DISCLAIMER

The Electronic Data Platform for Storage is a webplatform composed of several applications that are dedicated to registered Storage User having Storage Services in Execution. All action performed within the Electronic Data Platform for Storage are logged and stored for monitoring, analysiss and evidence purposes. This process may require that Fluxys Belgium obtains and processes personal data, which may be confidential. By entering this platform you acknowledge and agree that Fluxys Belgium may process your personal data in accordance with the applicable data protection legislation in Belgium. Fluxys will only use the abtained information for the above purposes and will not disclose your data to another third party unless required to do so by law or the regulator. All requests and/or transactions performed by Fluxys Belgium's Storage Users having acces to the Application(s) are conform the terms and conditions for access and use of the Electronic Data Platform for Storage and the SSA which will fully apply.