



MND Energy Storage Germany

Virtual gas storage management system

Web Portal

User guide for subjects of settlement

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Approved: --
Version: 1.0
Date: 13. 12. 2017

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Used terms and acronyms

Gas day (“GD”)	Period of time from 06:00:00 o’clock of a calendar day to 06:00:00 o’clock of the next calendar day (using valid time for the Czech Republic).
Underground gas storage (“UGS”)	Facility into/from which is gas injected/withdrawn by transmission system operator and where gas is stored.
Virtual gas storage (“VGS”)	Virtual gas storage consists of multiple underground gas storages and is managed as one big virtual storage.
kWh	Kilowatt hour.
Nm ³	Normative cubic meter.
Firm capacity	A product with guaranteed injection/withdrawal capacities. Firm capacity specifies an amount of gas in kWh which may be injected/withdrawn into the virtual gas storage every gas day.
Nomination	A requirement specified by the customer to inject/withdraw gas into/from virtual gas storage.
Injection	The process that transports gas into the storage (from the transmission system).
Withdrawal	The process that transports gas from the storage (to the transmission system).
Fixed terms and conditions	Capacities that were purchased under the contract.
Terms and conditions	Current levels of capacity after adding all of additional products, current usage, transferred capacities and working gas volume.
Working gas volume (WGV)	Volume of purchased capacity in gas storage. Usually for period of one year or more.
Matching	Agreeing of nominated value with transmission system operator.
Allocation	Amount of gas (on a daily basis) which was injected/withdrawn into/from virtual gas storage. Injection is a positive number. Withdrawal is a negative number.
TSO	Transmission system operator for gas transmission.
Time series, time lines	Vector of values in specific sample (hourly sample, daily sample ...).
Report	Spreadsheet document in XLSX format (Microsoft Excel), with predefined structure of columns.
Nomination form	A web page where user can enter and submit nominations to all valid contracts on following 30 gas days.

1 Introduction

Every customer of MND Energy Storage Germany is able to access web portal of Energy Storage Nomination System and use its features to reach expected business goals.

GSN web portal will allow customers to:

- **Submit nominations** for several contracts at once using one form.
- **Transferring capacity or gas** to another contract or to other companies (injection, withdrawal, storage capacities and gas).
- **Displaying the history of the specified requirements for injection / withdrawal** in the context of the Virtual UGS.
- **Displaying history of past matchings** to the desired nominations and their results.
- **Receiving tabular documents** according to custom settings and rules, providing an update on the use of purchased services
- **Displaying of contractual information.**

This user manual describes web portal and most of its features.

2 Web portal - essentials

2.1 Contact information

In case of requesting any new access or changing the existing one, please contact the commercial dispatching MND Energy Storage using mail address: dispatching@mnd-es.de or using phone number: +420 420 775 875 907

2.2 Login to the system

Customer/user is able to Login to the GSN web portal via a web browser by entering <https://gsn.mnd-energystorage.de/> in the URL row.

After that the user will be automatically redirected to the login page. Here the customer is able to enter username and password and successfully login to the system.

ENTER YOUR LOGIN INFORMATION.

User Name

Password

Log in

Web portal login form

2.3 Subjects of Settlement home page

As soon as user is successfully logged in - the home page is displayed. In case that special privileges were granted to the user and the user can manage more customers (companies/business entities) at once - the list of companies is displayed.



SHIPPERS LIST

> Company 1

> Company 2

> Company 3

> Company 4

> Company 5

Subjects of Settlement selection screen

After selecting of a specific company by clicking, web portal redirects the user to the web page where the company and all of its contracts can be managed. To get back to the home page please click on the “Home” icon, located in the top navigation menu.

In case that user has successfully selected one company (of the list of companies) or in case that it is able to manage only one company - the following web page is displayed:

Screen displaying subject of settlement

- **Top menu**
 - **Home** - redirects to the home page (more described in the second part of this chapter).
 - **Change password** - redirects to a page where user can change password (more in chapter 2.4).
 - **Help** - redirects to a page where user can download web portal documentation (more in chapter 2.5).
- **User options**
 - **Logged user** - e-mail address of the user who is currently logged-in.
 - **Logout** - log the user out of the system.
 - **Language** - allows the user to select language of the web portal (more in chapter 2.7).
- **Main menu**
 - **Active contracts** - redirects the user to a web page with the list of active contracts (more in chapter 3.4).
 - **Archived contracts** - redirects the user to a web page with the list of inactive contracts (more in chapter 3.4).
 - **User reports** - redirects the user to a web page where customized reports can be created and managed (more in chapter 3.8).
 - **Transfer/lease capacity/gas** - allows the user to create gas/capacity transfer or to lease capacity (more in chapter 3.6).
- **Nomination and Allocation**
 - **Submit new nomination** - opens a web form designed to submit nomination on a specific gas day (more in chapter 3.1).
 - **Nomination messages history** - displays an overview of all submitted/received nominations (more in chapter 3.2).
 - **Matching messages history** - displays an overview of all received matchings (more in chapter 3.3).
- **Transfers/Lease**
 - **Transfer/lease capacity/gas** - allows the user to create gas/capacity transfer or to lease capacity (more in chapter 3.6).
 - **Receive gas capacity** - allows the user to receive gas/capacity transfer or capacity lease (more in chapter 3.7).

- **User reports**
 - User reports - feature of the web portal which enables users to manage user reports, create new custom user reports (xlsx reports) based on data stored in time series (more in chapter 3.8).
- **Active contracts**
 - List of active contracts (more in chapter 3.4).
- **Archived contracts**
 - List of inactive contracts (more in chapter 3.4).

2.4 Changing password

Users can change their password by clicking on the button “Change password”.



The web portal will redirect you to a form where you can change your password. If the user has a password assigned from MND Energy Storage Germany, the password change for security reasons after login for the first time is recommended.

CHANGE PASSWORD FORM

Logged Admin.

Current / old password

New password

Confirm new password

[Change password](#)

Form for changing the password

2.5 Help

User is able to download full documentation of web portal in English. Help button opens a web page containing both documents.



Help menu

2.6 Logout

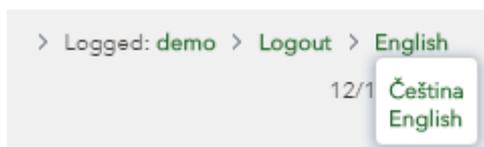
For logging out, there is “Logout” button. Web portal will display an info screen after successful logout.



User options

2.7 Switching the language

Web portal is multilingual. By default, the language option is set by your computer environment. User is able to change it at any time by clicking on the name of the language located in top menu.



Language selection menu

3 Working with Web portal

3.1 New Nomination

A nomination form is used for entering a request to move gas from the virtual stack inwards (injection) and outward (withdrawal). Through this form is possible to apply for individual gas storage contracts in the UGS that are active and signed between your company and MND Energy Storage Germany. The active contract means that the validity has not yet expired or begins in 30 days or less.

> NEW NOMINATION

Daily nomination

Firm capacity ContractA
 Firm capacity ContractB
 Interrup. ContractA
 Interrup. ContractB

Date	Nominated value [kWh]	Max. firm withdrawal capacity [kWh]	Max. firm injection capacity [kWh]
06 - 07		13	-1,000
07 - 08		13	-1,000
08 - 09		13	-1,000
09 - 10		13	-1,000
10 - 11		13	-1,000
11 - 12		13	-1,000
12 - 13		13	-1,000
13 - 14		13	-1,000
14 - 15		13	-1,000
15 - 16		13	-1,000
16 - 17		13	-1,000
17 - 18		13	-1,000
18 - 19		13	-1,000
19 - 20		13	-1,000
20 - 21		13	-1,000
21 - 22		13	-1,000
22 - 23		13	-1,000
23 - 24		13	-1,000
00 - 01		13	-1,000
01 - 02		13	-1,000
02 - 03		13	-1,000
03 - 04		13	-1,000
04 - 05		13	-1,000
05 - 06		13	-1,000

Screen for filling new mass nomination

The nomination form is used for following actions:

- 1) **Firm capacity - Nomination of the firm capacity** - a firm capacity nomination can be entered by usage the "Firm Capacity" tab of the nomination form. The following columns are located on the firm capacity tab:
 - **Nominated value [kWh]** – the lines present gas hours at which the nomination will be submitted. Injection capacity has to be filled as integer without sign, and withdrawal capacity as integer with the negative (minus) sign (e.g., "-5000").
 - **Max. Firm injection / withdrawal capacity [kWh]** - information about the final maximum nominal injection / withdrawal capacity for the firm capacity product.

Date	Nominated value [kWh]	Max. firm withdrawal capacity [kWh]	Max. firm injection capacity [kWh]
06 - 07	200,000	1,000,000	-7,500,000
07 - 08	200,000	1,000,000	-7,500,000
08 - 09	200,000	1,000,000	-7,500,000
09 - 10	200,000	1,000,000	-7,500,000
10 - 11	200,000	1,000,000	-7,500,000
11 - 12	200,000	1,000,000	-7,500,000
12 - 13	450,000	1,000,000	-7,500,000
13 - 14	450,000	1,000,000	-7,500,000
14 - 15	450,000	1,000,000	-7,500,000
15 - 16	450,000	1,000,000	-7,500,000

Filling mass nomination to firm capacity

2) Interruptible capacity - Nominate for Interruptible Capacity - the "Interruptible Capacity" tab of the nomination form is used for entering a nomination for Interruptible Capacity. The following columns are located on the interruptible capacity tab:

- **Requested interruptible capacity [kWh]** - value of injection / withdrawal to be sent as a request to purchase a complementary product of interruptible capacity
- **Offered unit price [EUR]** - price for 1 kWh of requested interruptible capacity
- **Nominated interruptible capacity [kWh]** - nominations for interruptible capacity
- **Max. available interrupt. injection / withdrawal with. capacity [kWh]** - the maximum amount of interruptible capacity that can be purchased (for the entire UGS)
- **Min. price of interrupt. injection / withdrawal capacity [EUR]** - minimum price that can be offered for 1 kWh. The offer should be the same or higher than this value.

Date	Requested interruptible capacity [kWh]	Offered unit price [EUR]	Nominated interruptible capacity [kWh]	Max. available interrupt. inj. capacity [kWh]	Max. available interrupt. with. capacity [kWh]	Min. price of interrupt. inj. capacity [EUR]	Min. price of interrupt. with. capacity [EUR]
06 - 07	100,000	0.010	10,000	56,500,000	-4,746,000	0.010	0.010
07 - 08	100,000	0.010	10,000	56,500,000	-4,746,000	0.010	0.010
08 - 09	100,000	0.010	10,000	56,500,000	-4,746,000	0.010	0.010
09 - 10	100,000	0.010	10,000	56,500,000	-4,746,000	0.010	0.010
10 - 11	100,000	0.010	10,000	56,500,000	-4,746,000	0.010	0.010
11 - 12	100,000	0.010	10,000	56,500,000	-4,746,000	0.010	0.010
12 - 13	100,000	0.010	10,000	56,500,000	-4,746,000	0.010	0.010
13 - 14	100,000	0.010	10,000	56,500,000	-4,746,000	0.010	0.010

Completed nomination and request for interruptible capacity

The nomination form includes the following functions:

- Daily nomination** - calculates the entered value in the writable cells of the form (ie. the hours which they can be nominated) in same ratio (but the last cell), that the sum of filled cells equals the entered value

Daily nomination

Function for hourly recalculation

- Using clipboard** - when working with “nomination form user may use clipboard to copy paste values from/to MS Excel.

	A	B	C	D
1	500000			
2	500001			
3	500002			
4	500003			
5	500004			
6	500005			
7	500006			
8	500007			
9	500008			
10	500009			
11	500010			

Values on list in Microsoft Excel application

By selecting the required block of values is possible to copy and paste into the appropriate areas of the nomination form.

Date	Nominated value [kWh]	Max. firm withdrawal capacity [kWh]	Max. firm injection capacity [kWh]
06 - 07	500,000	45,000	-100,000
07 - 08	500,001	45,000	-100,000
08 - 09	500,002	45,000	-100,000
09 - 10	500,003	45,000	-100,000
10 - 11	500,004	45,000	-100,000
11 - 12	500,005	45,000	-100,000
12 - 13	500,006	45,000	-100,000
13 - 14	500,007	45,000	-100,000
14 - 15	500,008	45,000	-100,000
15 - 16	500,009	45,000	-100,000
16 - 17	500,010	45,000	-100,000

Values in first row copied from Microsoft Excel application

- **Copy values** - user may as well select one or more cells and extend the selection in any direction to copy values.

15 - 16	1,000,000	45,000	-100,000
16 - 17	1,000,000	45,000	-100,000
17 - 18		45,000	-100,000
18 - 19		45,000	-100,000
19 - 20		45,000	-100,000
20 - 21		45,000	-100,000

Selecting cell displays blue frame

First enter a numeric value in any cell, then click the left mouse button on this cell. The web portal displays a blue border around the cell which has a blue square in the right corner. Clicking on the blue square and dragging anywhere in the editable cells will paste the value.

15 - 16	1,000,000	45,000	-100,000
16 - 17	1,000,000	45,000	-100,000
17 - 18	1,000,000	45,000	-100,000
18 - 19	1,000,000	45,000	-100,000
19 - 20	1,000,000	45,000	-100,000
20 - 21	1,000,000	45,000	-100,000
21 - 22	1,000,000	45,000	-100,000

By this function has values copied to other cells

When you press the "Submit nomination" button all values from all nomination tabs will be sent.

3.2 Nomination overview

The table “Nomination overview” displays all nominations entered by users. The table contains following columns:

- **ID** - unique identifier.
- **Gas Day** - gas day which the nomination was submitted for.
- **Received at** - CET/CEST time when the nomination was received by the system.
- **Status** - determines the status of the nomination:
 - **Received** - nomination was just received.
 - **Waiting** - nomination was received. Requested values were saved into proper time series and the system is waiting to finally process the nomination during next acceptance window.
 - **Processedby NAOS or Processed** - nomination has been processed by computing core.
 - **Waiting for decision** - nomination is waiting for dispatcher’s decision.
 - **Accepted** - nomination was accepted.
 - **Matching requested** - nomination was accepted and matching from TSO was requested.
 - **Overchanged** - nomination was changed by another nomination for the same gas day.
- **Message ID** - unique identifier of the message generated by market operator.

NOMINATION OVERVIEW

ID ▾	Gas Day	Received at	Status	Message ID	
5493941	10/5/2017	10/5/2017 11:30:23 AM	Overchanged	NOMINT20141114A00003	⋮.. ^
5483941	10/28/2017	10/4/2017 6:13:06 PM	Waiting		⋮..
5473941	10/9/2017	10/4/2017 6:07:58 PM	Matching requested		⋮..
5463941	10/4/2017	10/4/2017 12:39:21 PM	Matching requested	NOMINT20141114A00003	⋮..
5453941	10/4/2017	10/4/2017 12:38:21 PM	Overchanged	NOMINT20141114A00003	⋮..
5443941	10/4/2017	10/4/2017 12:34:43 PM	Overchanged	NOMINT20141114A00003	⋮..
5423941	10/4/2017	10/4/2017 12:19:21 PM	Overchanged	NOMINT20141114A00003	⋮..
5413941	10/4/2017	10/4/2017 11:23:45 AM	Matching requested	NOMINT20141114A00003	⋮..
5293941	10/4/2017	10/3/2017 4:57:51 PM	Matching requested		⋮.. ▾

Table with overview of sent nominations

User may click on the settings icon to display details of nomination message.

NOMINATION OVERVIEW

BASIC

ID	5303941
Gas Day	10/4/2017
Status	Matching requested
Message ID	NOMINT20141114A00003
Source	nomint - dnes.xml

NOMINATED TO CONTRACTS

Total count: 456

Hour	Contract	Contract Type	Nominated Value	Accepted Value	Matched Value
06-07	TestContract...	Interruptible capacity	666	666	--
07-08	TestContract...	Interruptible capacity	2,000	2,000	--
08-09	TestContract...	Interruptible capacity	2,000	2,000	--
09-10	TestContract...	Interruptible capacity	2,000	2,000	--
10-11	TestContract...	Interruptible capacity	2,000	2,000	--
11-12	TestContract...	Interruptible capacity	2,000	2,000	--
12-13	TestContract...	Interruptible capacity	2,000	2,000	--
13-14	TestContract...	Interruptible capacity	2,000	2,000	--

RECIEVED MATCHINGS

Total count: 0

Hour	Status	Message ID

Nomination message detail

Nomination detail contains following elements:

Basic - Provides basic information about the nomination.

- **ID** - unique identifier of nomination message.
- **Gas Day** - gas day when nomination was submitted.
- **Status** - status of nomination message (same types as in the overview).
- **Message ID** - unique identifier generated by the market operator.
- **Source** - name of the nomination source - usually a file name.

Nominated to contracts - in case that customer has several valid contracts this section will contain a list of values, each nominated value will be assigned to exactly one contract.

- **Contract** - name of the contract.

- **Contract type** - type of the contract.
- **Nominated value** - value nominated on contract.
- **Accepted value** - value accepted by dispatcher of MND Energy Storage.
- **Matched value** - resulting value negotiated between MND GSN and transmission system operator.

Received matchings

- **Received at** - CET/CEST time indicating when the matching message from TSO was received.
- **Status**
 - **Received** - matching was just received but not processed.
 - **Saved** - matching was processed and saved to database.
 - **Error** - matching procedure was aborted.
- **Message ID** - unique identifier of the message generated by transmission system operator.

3.3 Matching overview

Matching overview web page displays a table of all matching messages received from transmission system operator. The table contains following columns:

- **ID** - unique identifier.
- **Gas Day** - gas day of matching message.
- **Received at** - CET/CEST time indicating when the matching message from TSO was received.
- **Status:**
 - **Received** - matching was just received but not processed.
 - **Saved** - matching was processed and saved to database.
 - **Error** - matching procedure was aborted.
- **Message ID** - unique identifier of the message generated by transmission system operator.

MATCHING OVERVIEW

Id ▼	Gas Day	Recieved at	Status	Message ID	
1303824	9/7/2017	9/7/2017 4:27:02 PM	Saved	DELRES20170906A1521490	⋮..
1293824	9/7/2017	9/7/2017 4:17:55 PM	Saved	DELRES20170906A1521490	⋮..
1283824	9/7/2017	9/7/2017 3:00:09 PM	Saved	DELRES20170906A1521490	⋮..
1273824	9/7/2017	9/7/2017 2:36:19 PM	Saved	DELRES20170906A1521490	⋮..
1263824	9/7/2017	9/7/2017 2:31:20 PM	Saved	DELRES20170906A1521490	⋮..
1253824	9/7/2017	9/7/2017 2:28:36 PM	Saved	DELRES20170906A1521490	⋮..
1243824	9/7/2017	9/7/2017 2:00:22 PM	Saved	DELRES20170906A1521490	⋮..
1233824	9/7/2017	9/7/2017 1:56:38 PM	Saved	DELRES20170906A1521490	⋮..
1223824	9/7/2017	9/7/2017 1:02:25 PM	Saved	DELRES20170906A1521490	⋮..

Table containing accepted matching message overview

User may click on the settings icon to display details of nomination message.

MATCHING OVERVIEW

BASIC

ID	1263824
Gas Day	9/7/2017
Status	Saved
Message ID	DELRES20170906A1521490
Source	delres.xml

MATCHING TO CONTRACTS

Total count: 384

Hour	Contract	Contract Type	Matched Value
02-03	TestContractNominace	Firm capacity	40,000
03-04	TestContractNominace	Firm capacity	40,000
04-05	TestContractNominace	Firm capacity	40,000
05-06	TestContractNominace	Firm capacity	40,000
06-07	TestContractNominace	Firm capacity	40,000
07-08	TestContractNominace	Firm capacity	40,000
08-09	TestContractNominace	Firm capacity	40,000
09-10	TestContractNominace	Firm capacity	40,000
10-11	TestContractNominace	Firm capacity	40,000

NOMINATION

Nomination

Matched and confirmed



Matching message detail

Detail of a matching message contains the following elements:

Basic - provides basic information about the matching message

- **ID** - unique identifier of matching message.
- **Gas Day** - gas day of matching message.
- **Status** - status of matching message (same types as in the overview).
- **Message ID** - unique identifier generated by transmission system operator.
- **Source** - name of the matching source - usually a file name.

Matching to contracts - in case that customer has several valid contracts this section will contain a list of values, each matched value will be assigned to exactly one contract.

- **Contract** - name of the contract.
- **Contract type** - type of the contract.
- **Matched value** - resulting value negotiated between MND GSN and transmission system operator.

Nomination - link to the list of nominations connected with selected matching message.

3.4 Screen active/archived contracts

User can browse through all valid/archived contracts on the active/archived contract screen. The screen contains following information:

- **Injection capacity in kWh** - injection capacity of the contract for current gas day.
- **Withdrawal capacity in kWh** - withdrawal capacity of the contract for current gas day.
- **Working gas volume in kWh or Nm³** - contracted level of working gas volume for current gas day.

Contract screen contains set of time series:

- **Time series (IC, WC, WGV, CBA)**
 - **Injection capacity in kWh** - contracted injection capacity per each gas day.
 - **Withdrawal capacity in kWh** - contracted withdrawal capacity per each gas day.
 - **Working gas volume in kWh** - contracted working gas volume per each gas day (in kWh).
 - **Working gas volume in kWh or Nm³** - contracted working gas volume per each gas day (in Nm³).
 - **CBA %** - contract balance account (in percentage). 100% means that level of used working gas volume has reached its maximum.

- **Firm capacity**
 - **Time series (Nomination, Matching, Allocation)**
 - **Nominated values in kWh** - original values sent by customer
 - **Matched values in kWh** - matching values received from transmission system operator.
 - **Allocated values in kWh** - amount of gas transferred between transmission system operator and virtual gas storage.
 - **CBA In %** - actual level of contract balance account (gas stored in virtual gas storage).

- **Interruptible capacity** - (is active only in case that customer has signed interruptible capacity framework).
 - **Time series (Request capacity, Nomination, Matching, Allocation)**
 - **Nominated values in kWh** - original values sent by customer
 - **Matched values in kWh** - matching values received from transmission system operator.
 - **Allocated values in kWh** - amount of gas transferred between transmission system operator and virtual gas storage.
 - **Requested capacities in kWh** - interruptible capacities requested on the nomination form.

- **Intraday interruptible capacity** - (is active only in case that customer has signed interruptible capacity framework).
 - **Time series (Request capacity, Nomination, Matching, Allocation)**
 - **Nominated values in kWh** - original values sent by customer
 - **Matched values in kWh** - matching values received from transmission system operator.
 - **Allocated values in kWh** - amount of gas transferred between transmission system operator and virtual gas storage.
 - **Requested capacities in kWh** - intraday interruptible capacities requested on the nomination form.
 - **CBA in %** - actual level of contract balance account (gas stored in virtual gas storage).

All time series and their values are displayed in a table mode. Please see chapter “Quick Table 3.5”.

> CONTRACT GERMANY (CBA 93.1 %)

<div style="border-bottom: 1px solid #ccc; padding-bottom: 5px;"> CONTRACTUAL DATA </div> <ul style="list-style-type: none"> > Valid from 3/1/202 > Valid to 3/31/202 > Terms / conditions for gas day 13.01.202 12:00 > Injection capacity kWh > Withdrawal capacity kWh > Working gas volume kWh > Time series (IC, WC, WGV, CBA) 	<div style="border-bottom: 1px solid #ccc; padding-bottom: 5px;"> FIRM CAPACITY </div> <ul style="list-style-type: none"> > Time series (Nomination, Matching, Allocation) <div style="border-bottom: 1px solid #ccc; padding-bottom: 5px; margin-top: 10px;"> INTERRUPTIBLE PART </div> <ul style="list-style-type: none"> > Time series (Requested capacity, Nomination, Matching, Allocation) <div style="border-bottom: 1px solid #ccc; padding-bottom: 5px; margin-top: 10px;"> INTRADAY INTERRUPTIBLE PART </div> <ul style="list-style-type: none"> > Time series (Requested capacity, Nomination, Matching, Allocation)
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3.5 Quick Table

Quick table is used to display and eventually modify values of time series. Time series are displayed in separate columns. Each row contains a value computed using aggregation function.

Following controls may be used in quick table:

- **From - To** - range of data cached and displayed in quick table.
- **Rows** - sample for each row in the table (hours, days, weeks ...).
- **Aggregation of row values** - aggregation function used in case that original sample of data stored in time series is different from selected sample. Please see “Rows” option.
- **Export button** - exports selected data into xlsx file.

> FIRM CONTRACTUAL DATA

Display chart

From 12/12/2017 6:00 AM To 12/13/2018 12:00 AM Rows Hours
 Aggregation of row values Average Export

Date and time	Injection Capacity [kWh/d]	Withdrawal Capacity [kWh/d]	Working Gas Volume [kWh/d]	Working Gas Volume [Nm3/d]
1/12/2018 21 - 22	1,042,000.000	-1,503,000.000	2,224,000,000.000	--
1/12/2018 22 - 23	1,042,000.000	-1,503,000.000	2,224,000,000.000	--
1/12/2018 23 - 00	1,042,000.000	-1,503,000.000	2,224,000,000.000	--
1/13/2018 00 - 01	1,042,000.000	-1,503,000.000	2,224,000,000.000	--
1/13/2018 01 - 02	1,042,000.000	-1,503,000.000	2,224,000,000.000	--
1/13/2018 02 - 03	1,042,000.000	-1,503,000.000	2,224,000,000.000	--
1/13/2018 03 - 04	1,042,000.000	-1,503,000.000	2,224,000,000.000	--
1/13/2018 04 - 05	1,042,000.000	-1,503,000.000	2,224,000,000.000	--
1/13/2018 05 - 06	1,042,000.000	-1,503,000.000	2,224,000,000.000	--
1/13/2018 06 - 07	1,042,000.000	-1,503,000.000	2,224,000,000.000	--
1/13/2018 07 - 08	1,042,000.000	-1,503,000.000	2,224,000,000.000	--
1/13/2018 08 - 09	1,042,000.000	-1,503,000.000	2,224,000,000.000	--
1/13/2018 09 - 10	1,042,000.000	-1,503,000.000	2,224,000,000.000	--
1/13/2018 10 - 11	1,042,000.000	-1,503,000.000	2,224,000,000.000	--

Quick table

- **Display chart button** - switches the display mode into chart view:
 - **From** - start date.
 - **Range** - range of data projected into chart.
 - **Arrows <>** - moves the range of displayed data.
 - **Period** - sample of displayed data.
 - **Aggregation of values** - aggregation of values (in each time series separately) base on selected sample.
 - **Aggregation of time series** - aggregation of all values of all time series.
 - **Names of the displayed time series** - each time serie may be hidden by clicking on the name of time serie in the legend of the chart.

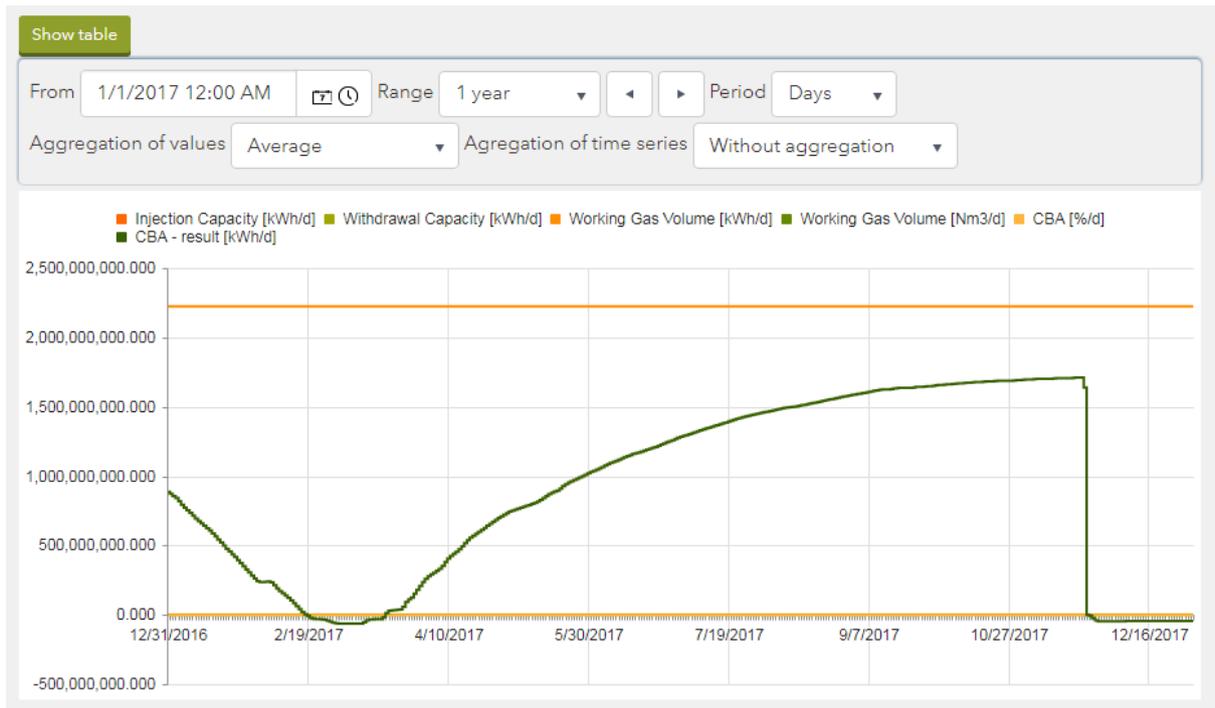


Chart component

3.6 Transfer/lease capacity/gas

Customer may transfer gas or transfer/lease injection capacity, withdrawal capacity and working gas volume on specific gas day. Transfers/leases can be initiated using “Transfer/Lease Capacity/Gas” web page.

➤ TRANSFER/LEASE CAPACITY/GAS

Select a contract I agree with Terms. [View Terms and Conditions](#)

TRANSFER/LEASE CAPACITY

TIME PERIODS ⓘ

From To

Amount of transferred/leased injection capacity kWh

Amount of transferred/leased withdrawal capacity kWh

Amount of transferred/leased WGV kWh

Type Transfer Lease

TRANSFER GAS

Day of Gas Transfer

Amount of transferred gas kWh

Screen transfer/lease capacity/gas

Common part (obligatory for both - gas and capacity transfers):

- **Select a contract** - source contract from which capacities or gas will be transferred.
- **I agree with Terms** - agreement of terms and conditions.

Transfer / lease capacity (Left part):

- **Date From - To** - start date/end date (date represents gas day) of capacity transfer.
- **Amount of transferred / leased injection capacity** - the amount of injection capacity in kWh, which will be transferred/leased to another contract or other customer.
- **Amount of transferred / leased withdrawal capacity** - the amount of withdrawal capacity in kWh, which will be transferred/leased to another contract or other customer.
- **Amount of transferred / leased WGV** - the amount of working gas volume in Nm3, which will be transferred/leased to another contract or other customer.
Note: customer can transfer / lease one or more types of capacity (working gas volume, injection and withdrawal) within single action.
- **Type {Transfer, Lease}** - determines whether capacities will be transferred or leased.
- **Button Transfer/Lease capacity** - submits transfer/lease request to the system and generates Unique ID of the transfer/lease.

CONFIRMATION



You are creating transfer of capacities with following properties:

Contract:	Contract 1
Unique ID:	c8742ae6-6acc-42e4-8c1c-dd58d5be5f4d
Type:	Transfer
From:	18.12.2017 06:00
To:	21.12.2017 06:00
Amount of transferred/leased injection capacity:	150 000 kWh
Amount of transferred/leased withdrawal capacity:	0 kWh
Amount of transferred/leased WGV:	0 kWh

Complete transfer?

Recapitulation box before submitting transfer / lease

At this stage of capacity transfer/lease the task can be canceled by clicking on “No” button or confirmed by clicking on “Yes” button. In case that task is confirmed the unique ID identifying capacity transfer/lease is generated. User is kindly asked to carefully save generated ID.

CONFIRMATION

Transfer of capacities was completed with following unique ID:

c8742ae6-6acc-42e4-8c1c-dd58d5be5f4d

PLEASE SAVE FOLLOWING UNIQUE ID!



Window containing unique key of transfer / lease

(Right part) Transfer gas

- **Day of Gas Transfer** - date when specified amount of gas will be transfer from selected contract.
- **Amount of transferred gas** - the amount of gas in kWh, which will be transferred from selected contract to other contract or possibly other customer.
- **Button Transfer gas** - submits gas transfer to the system and generates Unique ID of gas transfer.

CONFIRMATION

You are creating gas transfer with following parameters.

Contract:	Contract 1
Unique ID:	04049317-68f1-4268-8a28-4bdcaa5f9155
Day of Gas Transfer:	18.12.2017 06:00
Amount of transferred gas:	20 000 kWh

Confirm transfer?

At this stage of gas transfer the task can be canceled by clicking on “No” button or confirmed by clicking on “Yes” button. In case that task is confirmed the unique ID identifying gas transfer is generated. User is kindly asked to carefully save generated ID.

CONFIRMATION

Gas transfer was completed with following unique ID:
04049317-68f1-4268-8a28-4bdcaa5f9155

PLEASE SAVE FOLLOWING UNIQUE ID!

Recapitulation containing unique identifier of gas transfer

3.7 Receive capacity / gas

Unique ID identifying gas/capacity transfer/lease is necessary to receive gas or capacities transferred from other contract or possibly other customer. At first user has to specify

“Unique ID” than select a contract where gas/capacities will be accepted.

➤ RECEIVE CAPACITIES/GAS

Unique ID

ⓘ

Verify Unique ID

Window for transfer/lease receive

- **Unique ID** - in this field is filled key of transfer / lease that was displayed when you create a transfer/lease. If you are converting capacity / gas from other companies, so it is necessary to ask for the key that company.
- **Verify Unique ID button** - button to verify the validity of the entered key.

By filling unique id and clicking on the "Verify Unique ID" will be required to validate the transfer / transmission. If the validation is successful they will be added following items:

- **Destination contract** - contract where accepted gas/capacities will be transferred.
- **Receive capacities / gas to new contract** - using this option customers requests from MND to create new contract where capacities will be transferred.
- **Unique ID** - Unique ID identifies gas/capacity transfer/lease.
- **I agree with Terms** - agreement of terms and conditions.
- **Verify transfer / lease** - submits a request to verify and transfer gas/capacities to MND.

DELIVERY CONFIRMED ×

You are creating gas transfer with following parameters.

Contract:	Contract 1
Unique ID:	91e204c3-687b-45b9-8b99-3315f56e8716
Day of Gas Transfer:	31.08.2017 22:00
Amount of transferred gas:	40 000 kWh

Confirm transfer?

Yes No

At this stage of gas/capacities acceptance process the task can be canceled by clicking on “No” button or confirmed by clicking on “Yes” button. After the task is confirmed - the sales department of MND Energy Storage will receive an e-mail notification with all gas/capacity transfer parameters and will approve / not approve the transaction. User/Customer will be notified via email as soon as gas/capacities will be transferred.

CONFIRMATION

Transfer/lease of capacities/gas was successfully accepted.

Ok (5)

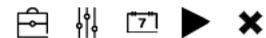
3.8 User reports

User may create custom reports and let the system generate them in MS XLSX format periodically (or just once). All generated reports can be downloaded directly from the web portal or sent by the system to the user via email.

“User reports” web page is located in the top menu of web portal.



> Report



New report

User may create new report template by clicking on “New report” function.

PARAMETERS

Report name

Description

COLUMNS

Selected columns

New column

Save Close

- **Report name** - name the report.
- **Description** - description of the report used only for customer purposes.
- **Selected column** - set of time series. Values of each time series will be exported in separate column. User may select one or more time series and modify their name exported in the header of report.
 - **Column setup** - column setting.

COLUMNS

Selected columns

New column

COLUMN SETUP

Column name

Aggregation functions ⓘ

Description

Save Cancel

- **Column name** - name of the exported column.
- **Aggregation functions** - aggregation function used in case that values are re-sampled into different sample from original (stored in time series).
- **Description** - description of the column (not used in the report).
- **Save button** - saves the template.
- **Close button** - cancel all changes and closes the form.

As soon as report definition is saved user is redirected back to the list of reports where user can download, modify or delete any of already existing reports.

- **Folder** (or clicking directly on the name of report) - redirects user to a screen with the list of generated reports.

> REPORT

LIST OF GENERATED REPORTS

Generate	Export from	Export to	Task name	State	
12/13/2017 1:44:05 PM	11/13/2017	12/13/2017	Report	OK - Published	

⏪
⏩
1
⏪
⏩
1 - 1 of 1 items

Generate report
Automatic report generation

This screen displays all generated reports, which can be downloaded and saved directly by clicking on the folder icon.

- **Generate a report** - generates a new report from the template. **“Play button”**.
- **Automatic report generation** - opens a scheduler where user can setup automatic exports of the report (“Settings button”).
- **Settings**- redirects a user to the setting of user reports.
- **Calendar** - redirects a user to the scheduler - to automatically generate reports.

AUTOMATIC REPORT GENERATION

New task

GENERAL SETTINGS

Name of the task

Task 2017-12-13-13-45-02

Active

Start date

12/13/2017 1:45 PM



Sample

Days

Frequency

Daily

Export data range

Actual day

SEND REPORT TO EMAIL ADDRESS(ES) (OPTIONAL)

Email addresses [?](#)

Email body

Save

Close

- **Name of the task** - unique identifier of the task.
- **Active** - in case that task is active - report will be automatically generated.
- **Start date** - the very first date when the report will be generated.
- **Sample** - sample of data in generated report.
- **Frequency** - identifies how often the report should be generated.
- **Export data range** - range of data exported in the report (for example 1 year of data range in daily sample will contain 365 values).
- **E-mail address** - email address or set of email addresses separated by comma - identifying where generated report will be send.
- **E-mail body** - body of the email.
- **Save button** - saves the setup of scheduled task.
- **Close button** - cancels all changes of the scheduled task.
- **Play** - generates report immediately.

GENERATE REPORT

PARAMETERS

Export data range - from

Export data range - to

Sample

SEND REPORT TO EMAIL ADDRESS(ES) (OPTIONAL)

Email addresses ?

Email body

Generate report

Close

- **Export data range (From - To)** - range of exported data.
- **Sample** - sample of exported data (hours, days, weeks ...).
- **E-mail address** - email address or set of email addresses separated by comma - identifying where the generated report will be send.
- **E-mail body** - body of the email.
- **Generate report button** - generates report immediately.
- **Close button** - closes web page and opens list of reports.

Cross - deletes selected report.



> Report

New report

