



# GPCM Workshop: Storage

November 21, 2025

## The Leader in Energy Market Simulation Systems

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- Investment and M&A Strategy
- Environmental and Sustainability Goals
- Credible Risk Analysis
- Trading Strategy
- Policy Development and Assessment
- Energy Security

# GPCM - Workshop

# Storage

**November 21, 2025**

**Robert Kachmar**  
Senior Natural Gas Analyst



## Storage Workshop

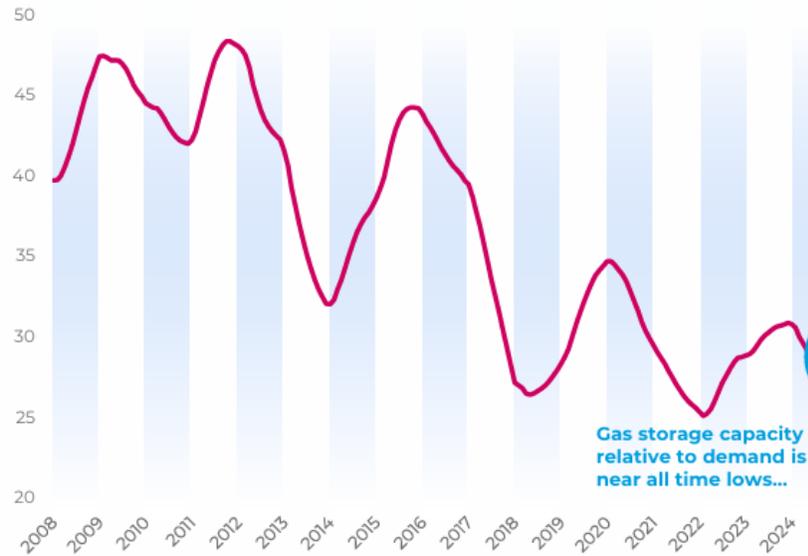
1. Days of Service
2. Increasing Storage Data
3. Increasing Storage Plan
4. Putting it all together
5. Summary

# GPCM Case Study - Storage

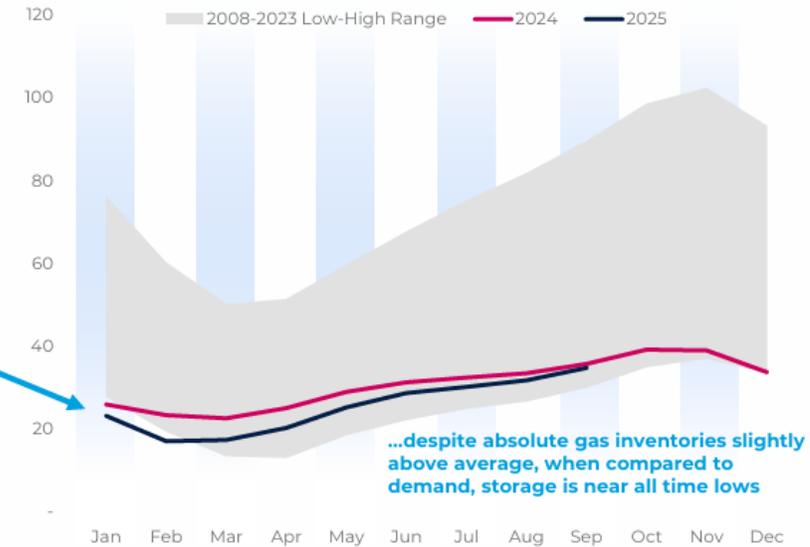
## Inadequate Natural Gas Storage Will Amplify Price Volatility

Lack of storage relative to demand, limited coal switching ability and renewable intermittency will amplify price volatility

**U.S. GAS STORAGE: DAYS OF LONG-TERM DEMAND COVER<sup>(1)</sup>**  
Storage / Daily Demand



**STORAGE EXPRESSED IN DAYS' DEMAND COVER<sup>(1)</sup>**  
Storage / Daily Demand



**UNDER THIS DYNAMIC, PRICE IS INCREASINGLY BECOMING THE ONLY MECHANISM THAT BALANCES INVENTORIES, CREATING A MORE VOLATILE GAS PRICING MARKET**



1. Source: EQT Internal analysis. Days of demand cover = Storage / Daily gas demand. Represents the days of gas demand available in storage.

# GPCM Case Study - Storage

- This Days of Long-Term Demand cover ratio puts into perspective how much demand growth has outpaced storage additions over the past 15 years
- There has been a major drive of late to add facilities, particularly in the Gulf Region, to act as balancing when LNG Export Facilities trip or go offline. Especially for extended periods of time.
  - Freeport LNG has had many issues in this regard
- A continued investment in storage assets, not just in the Gulf, but nationwide is needed to add flexibility back into the natural gas market. While also cushioning consumers from significant price spikes as extreme weather events like Winter Storm Uri and Elliott become more common

# GPCM Case Study - Scope

- Make a new Scenario
- Familiarize ourselves with the Fields and Functionality of “Storage Data”
  - Make New
  - Filter EIA Region for South Central
    - Increase “Working Capacity” by 2x
    - Increase “Max Inj Rate” and “Max With Rate” by 1.5x
- Familiarize ourselves with the “Storage Plan Form”
  - Make New
  - Filter EIA Region for South Central
    - Increase “Max Qty”
- Control Panel Selections
- Execute



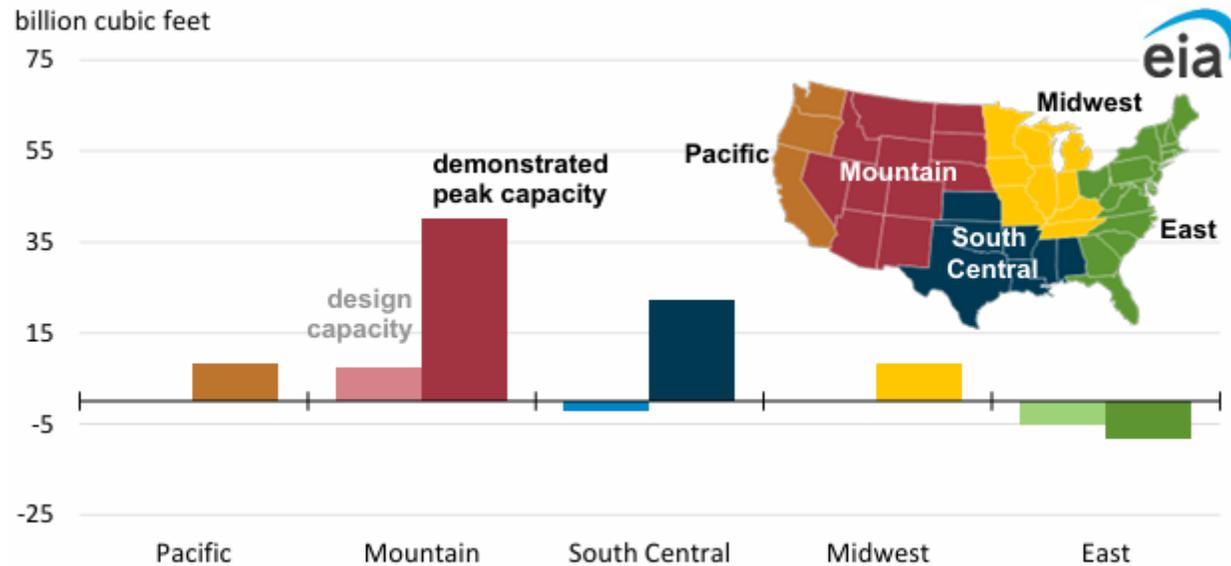
## Storage Workshop

1. Days of Service
2. Increasing Storage Data
3. Increasing Storage Plan
4. Putting it all together
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# The EIA 191 Report

Historically released on an annual basis, with the most recent release in May 2025. This report tracks changes in “Working Gas Capacity” as well as “Peak Day Capacity” but also includes important information like Location, Storage Type, and Owner. This is the information that populates GPCM’s “Storage Data” Form after being loaded into Access.

Figure 1. Changes in natural gas storage capacity by storage region (2023–24)



Data source: U.S. Energy Information Administration, Form EIA-191, Monthly Underground Natural Gas Storage Report  
Note: Measures of capacity reflect final revised values as published in the [Underground Natural Gas Storage Capacity Report](#).

# Storage Data

- Access Ribbon - Scenario Drop Down
  - Make a New Scenario
  - Call it Storage Workshop
- Double Click on Storage Data “25Q3base”

Control Panel - RBAC, Inc.

File **GPCM** Home Create External Data Database Tools Help Tell me what you want to do

Database **Scenario** Builders Data\_Inputs Execute Reports Windows Help View Form View Import from Excel Export to Excel Cut Copy Paste Saved Record Refresh All Ascend Descend

**GPCM® Market Simulator for North American Gas & LNG™** *Developer Mode*  
Version 13.4.6+2025.49

Scenario 25Q3base Linked Database C:\RBAC\GPCM\Databases\Storage Workshop\25Q3base.acddb Split?  Size(MB) 1,032

**Scenario Subcases**

Supply:	25Q3base	Storage_Available:	25Q3base
Demand:	25Q3base	Storage_Plan:	25Q3base
Pipeline_Available:	25Q3base	<b>Storage_Data:</b>	<b>25Q3base</b>
AutoExpand_Data:	25Q3base	Storage_Link:	25Q3base
Pipeline_Zone:	25Q3base	Balancing Case:	25Q3base
Pipeline_Link:	25Q3base	CO2 Case:	25Q3base
Supply_Link:	25Q3base	Crossborder Case:	25Q3base
Demand_Link:	25Q3base		
Interconnect_Link:	25Q3base		

Note: Entries in red have been modified since this scenario was last run.

**Execution Parameters**

Scenario Start:	Jan-2018
Scenario Finish:	Dec-2050
Discount Rate:	0.0700
Continuation?	<input type="checkbox"/>
Based on:	
Continued From:	
Autoexpand?	<input checked="" type="checkbox"/>

Note: Auto-Expansion settings are now defined at the pipeline zone level using the AutoExpand Data table.

**Execution Summary**

Start Time:	10/30/2025 2:25 pm
Run Time:	4737
# of Variables:	5,728,282
# of Equations:	2,673,076

Real \$ Year for linked DB is 2024

**Description**

# Storage Data

Storage Data Case - RBAC, Inc.

File GPCM Home Create External Data Database Tools Help Tell me what you want to do

Database Scenario Builders Data\_Inputs Execute Reports Windows Help

View Form View **Datasheet View** Import from Excel Export to Excel Cut Copy Paste Can't Undo Refresh All Ascending Descending Filter By Selection Filter By Form Toggle Filter Get Help Visual Basic

Storage Data Stor Ayail Stor Plan Stor Links Compare **Make New** Rename Delete Close

Storage_Data	Storage Facility	Eff Date	Working Capacity	Max Inj Rate	Inj Loss	Inj Cost	Max WD Rate	WD Loss	WD Cost	Country	State	County	Census Region	AGA Region	EIA Region	Storage Field Type	Owner	Owner Type
25Q3base															South Central			
25Q3base	Ada	Jan-1998	12,000	200	0.00%	\$0.055	330	2.50%	\$0.033	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Apr-2005	14,000	218	0.00%	\$0.055	360	2.50%	\$0.033	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Apr-2007	14,000	178	0.00%	\$0.055	295	2.50%	\$0.033	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Jan-2011	14,000	148	1.50%	\$0.035	295	2.50%	\$0.035	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Jan-2012	13,000	148	1.50%	\$0.035	295	2.50%	\$0.035	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Oct-2015	13,200	148	1.50%	\$0.035	295	2.50%	\$0.035	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Feb-2016	13,200	180	1.50%	\$0.035	360	2.50%	\$0.035	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Dec-2016	14,140	180	1.50%	\$0.035	360	2.50%	\$0.035	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE

- Make a New Storage Data Case
  - Name it “Storage Workshop”
  - Click Make New
- Once back in the form Filter for the “South Central” EIA Region
  - Should have 694 records, with many Storage Fields have multiple records to represent changes over time
- In the Access Ribbon Select “Datasheet View”

MAKE NEW STORAGE DATA CASE

New\_Case\_Name: Storage Workshop

Based\_On\_Case: 25Q3base

**Make New** Cancel

# Storage Data

Storage Data Case - RBAC, Inc.

File GPCM Home Create External Data Database Tools Help **Form Datasheet** Tell me what you want to do

Views Themes Colors Add Existing Fields Property Sheet Chart Settings Background Color Alternate Row Color Conditional Formatting

Storage Data	Storage Facility	Eff Date	Working	Max Inj Rate	Inj Loss	Inj Cost	Max WD Rate	WD Loss	WD Cost	Country	State	County	Census Region	AGA Region	EIA Region	Storage Field T	Owner	Owner Type
25Q3base	Ada	Jan-1998	12,000	200	0.00%	\$0.055	330	2.50%	\$0.033	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Apr-2005	14,000	218	0.00%	\$0.055	360	2.50%	\$0.033	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Apr-2007	14,000	178	0.00%	\$0.055	295	2.50%	\$0.033	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Jan-2011	14,000	148	1.50%	\$0.035	295	2.50%	\$0.035	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Jan-2012	13,000	148	1.50%	\$0.035	295	2.50%	\$0.035	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Oct-2015	13,200	148	1.50%	\$0.035	295	2.50%	\$0.035	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Feb-2016	13,200	180	1.50%	\$0.035	360	2.50%	\$0.035	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Dec-2016	14,140	180	1.50%	\$0.035	360	2.50%	\$0.035	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Ada	Nov-2018	12,600	180	1.50%	\$0.035	360	2.50%	\$0.035	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
25Q3base	Alden	Jan-1998	4,200	70	1.00%	\$0.042	134	2.50%	\$0.025	USA	KS	Rice	WNC	Producing	South Central	Depleted Field	Southern Star Cent	PIPE
25Q3base	Alden	Jan-2011	4,200	67	1.50%	\$0.035	134	2.50%	\$0.035	USA	KS	Rice	WNC	Producing	South Central	Depleted Field	Southern Star Cent	PIPE
25Q3base	Ambassador	Jan-2001	651	1	1.00%	\$0.026	1	2.50%	\$0.038	USA	TX	Clay	WSC	Producing	South Central	Depleted Field	Cago Inc	PMER
25Q3base	Ambassador	Jan-2011	651	1	1.50%	\$0.035	1	2.50%	\$0.035	USA	TX	Clay	WSC	Producing	South Central	Depleted Field	Cago Inc	PMER
25Q3base	Ambassador	Jan-2015	1	1	1.50%	\$0.035	1	2.50%	\$0.035	USA	TX	Clay	WSC	Producing	South Central	Depleted Field	Cago Inc	PMER
25Q3base	Amory	Jan-1998	1,481	8	1.50%	\$0.035	35	2.50%	\$0.035	USA	MS	Monroe	ESC	Producing	South Central	Depleted Field	Atmos Energy	LDC

- Click in the upper left-hand corner of the datasheet form and much like an excel document, this will highlight the entire data set.
- From there you can copy/paste to excel and delete every record but the most recent for each storage facility (this was a bit tedious so I won't walk you through that).
- Once that is completed, copy that dataset and paste it right next to the existing.

# Storage Data

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S
1	Storage_Data	Storage Facility	Eff Date	Working Capacity	Max Inj Rate	Inj Loss	Inj Cost	Max WD Rate	WD Loss	WD Cost	Country	State	County	Census Region	AGA Region	EIA Region	Storage Field Type	Owner	Owner Type
2	25Q3base	Ada	Nov-2018	12,600.00	180.00	1.50%	\$0.04	360.00	2.50%	\$0.04	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
3	25Q3base	Alden	Jan-2011	4,200.00	67.00	1.50%	\$0.04	134.00	2.50%	\$0.04	USA	KS	Rice	WNC	Producing	South Central	Depleted Field	Star Central Corp	PIPE
4	25Q3base	Ambassador	Jan-2015	1.00	0.50	1.50%	\$0.04	1.00	2.50%	\$0.04	USA	TX	Clay	WSC	Producing	South Central	Depleted Field	Cago Inc	PMER
5	25Q3base	Amory	Oct-2017	994.00	12.50	1.50%	\$0.04	25.00	2.50%	\$0.04	USA	MS	Monroe	ESC	Producing	South Central	Depleted Field	Atmos Energy	LDC
6	25Q3base	Arcadia	Jul-2023	13,800.00	450.00	1.50%	\$0.04	900.00	2.50%	\$0.04	USA	LA	Bienville	WSC	Producing	South Central	Salt Dome	Arcadia Gas Storage, LLC	PMER

- Once the duplicate records have been deleted and the records we want have been copied over, we can begin editing.
- We need to Change:
  - Case Name to “Storage Workshop”,
  - “Effective Date” to Apr-2026,
  - Multiple Working Capacity by 2,
  - Multiply Max Inj/WD Rate by 1.5.
- You can then go back to Access and paste these values back in at the bottom of the dataset

U	V	W	X	Y	Z	AA	AB	AC	AD	AE	AF	AG	AH	AI	AJ	AK	AL	AM
Storage_Data	Storage Facility	Eff Date	Working Capacity	Max Inj Rate	Inj Loss	Inj Cost	Max WD Rate	WD Loss	WD Cost	Country	State	County	Census Region	AGA Region	EIA Region	Storage Field Type	Owner	Owner Type
Storage Workshop	Ada	Apr-2026	25,200.00	270.00	1.50%	\$0.04	540.00	2.50%	\$0.04	USA	OK	Pontotoc	WSC	Producing	South Central	Depleted Field	CenterPoint Energy	PIPE
Storage Workshop	Alden	Apr-2026	8,400.00	100.50	1.50%	\$0.04	201.00	2.50%	\$0.04	USA	KS	Rice	WNC	Producing	South Central	Depleted Field	Star Central Corp	PIPE
Storage Workshop	Ambassador	Apr-2026	2.00	0.75	1.50%	\$0.04	1.50	2.50%	\$0.04	USA	TX	Clay	WSC	Producing	South Central	Depleted Field	Cago Inc	PMER
Storage Workshop	Amory	Apr-2026	1,988.00	18.75	1.50%	\$0.04	37.50	2.50%	\$0.04	USA	MS	Monroe	ESC	Producing	South Central	Depleted Field	Atmos Energy	LDC
Storage Workshop	Arcadia	Apr-2026	27,600.00	675.00	1.50%	\$0.04	1,350.00	2.50%	\$0.04	USA	LA	Bienville	WSC	Producing	South Central	Salt Dome	Arcadia Gas Storage, LLC	PMER

# Control Panel

Control Panel - RBAC, Inc.

File **GPCM** Home Create External Data Database Tools Help Tell me what you want to do

Database Scenario Builders Data\_Inputs Execute Reports Windows Help View Form View Import from Excel Export to Excel Cut Copy Paste Can't Undo Refresh All Ascend Descend

**GPCM® Market Simulator for North American Gas & LNG™** *Developer Mode*  
Version 13.4.6+2025.49 Exit

Scenario  Linked Database  Split?  Size(MB)

Scenario Subcases		Execution Parameters		Execution Summary	
Supply:	<input type="text" value="25Q3base"/>	Storage_Available:	<input type="text" value="25Q3base"/>	Scenario Start:	<input type="text" value="Jan-2018"/>
Demand:	<input type="text" value="25Q3base"/>	Storage_Plan:	<input type="text" value="25Q3base"/>	Scenario Finish:	<input type="text" value="Dec-2040"/>
Pipeline_Available:	<input type="text" value="25Q3base"/>	Storage_Data:	<input type="text" value="Storage Workshop"/>	Discount Rate:	<input type="text" value="0.0700"/>
AutoExpand_Data:	<input type="text" value="25Q3base"/>	Storage_Link:	<input type="text" value="25Q3base"/>	Continuation?	<input type="checkbox"/>
Pipeline_Zone:	<input type="text" value="25Q3base"/>	Balancing Case:	<input type="text" value="25Q3base"/>	Based on:	<input type="text"/>
Pipeline_Link:	<input type="text" value="25Q3base"/>	CO2 Case:	<input type="text" value="25Q3base"/>	Continued From:	<input type="text"/>
Supply_Link:	<input type="text" value="25Q3base"/>	Crossborder Case:	<input type="text" value="25Q3base"/>	Autoexpand?	<input checked="" type="checkbox"/>
Demand_Link:	<input type="text" value="25Q3base"/>	Note: Entries in red have been modified since this scenario was last run.		Note: Auto-Expansion settings are now defined at the pipeline zone level using the AutoExpand Data table.	
Interconnect_Link:	<input type="text" value="25Q3base"/>			Real \$ Year for linked DB is 2024	
Description					
<div style="border: 1px solid black; height: 150px;"></div>					

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Once you have made all your edits and pasted the new data back into your dataset, make sure to come back into the control panel and select your new storage data case in that dropdown.

This is a best practice habit to ensure the correct sub-cases are always selected when you execute your scenario.



## **Storage Workshop**

1. Days of Service
2. Increasing Storage Data
- 3. Increasing Storage Plan**
4. Putting it all together
5. Summary

# Storage Plan

- There is a plan for each storage facility within GPCM.
- This plan consists of monthly records with a Minimum Quantity and a Maximum Quantity as well a lot of the same information such as location data from the Storage Data form.
- In the historical period, the Minimum and Maximum quantities are equal, because we know what the ending balances were for that period. However, in the future we use a 5-year average of the Minimum and Maximum quantities that field experienced. This average creates our “Plan” for how that facility will operate in the future. While we don’t have access to individual storage contracts or the information within them, we use this average as a proxy for ratchet information.
  - ❖ A “Ratchet” is a monthly contracted volume that a storage field must be at. In a typical Depleted Well Field, with one injection season and one withdrawal season, Ratchets and Storage Levels dictate how much gas can be injected or withdrawn.
- I think the best way to explain is with a balloon. If a storage field is like a balloon, it is very easy to blow a balloon up at the beginning, when there isn’t much air inside. As the balloon fills it gets harder to push more air inside. This explains how storage level impacts injection ratchets. When a ballon is very full and you let a little air out, it comes very fast. As the balloon gets smaller in volume, the slower the air comes out. This explains how storage level impacts withdrawal ratchets.

# Storage Plan

Control Panel - RBAC, Inc.

File **GPCM** Home Create External Data Database Tools Help Tell me what you want to do

Database Scenario Builders Data\_Inputs Execute Reports Windows Help View Form View Import from Excel Export to Excel Cut Copy Paste Saved Record Refresh All Ascend Descend

**GPCM® Market Simulator for North American Gas & LNG™** *Developer Mode*  
Version 13.4.6+2025.49 Exit

Scenario **Storage Workshops** Linked Database C:\RBAC\GPCM\Databases\Storage Workshop\25Q3base.accdb Split?  Size(MB) 1,032

Scenario Subcases		Execution Parameters		Execution Summary	
Supply:	25Q3base	Storage_Available:	25Q3base	Scenario Start:	Jan-2018
Demand:	25Q3base	Storage_Plan:	25Q3base	Scenario Finish:	Dec-2040
Pipeline_Available:	25Q3base	Storage_Data:	Storage Workshop	Discount Rate:	0.0700
AutoExpand_Data:	25Q3base	Storage_Link:	25Q3base	Continuation?	<input type="checkbox"/>
Pipeline_Zone:	25Q3base	Balancing Case:	25Q3base	Based on:	
Pipeline_Link:	25Q3base	CO2 Case:	25Q3base	Continued From:	
Supply_Link:	25Q3base	Crossborder Case:	25Q3base	Autoexpand?	<input checked="" type="checkbox"/>
Demand_Link:	25Q3base			Note: Auto-Expansion settings are now defined at the pipeline zone level using the AutoExpand Data table.	
Interconnect_Link:	25Q3base			Real \$ Year for linked DB is 2024	

Note: Entries in red have been modified since this scenario was last run.

**Description**

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We edit the Storage Plan much the same as we do the Storage Data

Double Click the 25Q3base sub case and it will take us to the existing plan

# Storage Plan

Storage Plan Case - RBAC, Inc.

File GPCM Home Create External Data Database Tools Help Tell me what you want to do

Database Scenario Builders Data\_Inputs Execute Reports Windows Help

View Form View **Datasheet View** Import from Excel Export to Excel Cut Copy Paste Can't Undo Refresh All Ascending Descending Filter By Selection Filter By Form Toggle Filter Get Help Visual Basic

Storage Plan Summary Graph Compare Append Import Export Chk Plan **Make New** Rename Delete Close

Storage Plan	Storage Facility Name	Period	Min Qty	Max Qty	Max INJ Rate	Max WD Rate	Country	State	County	Census Region	AGA Region	EIA Region	Storage Field Type	Owner	Owner Type
25Q3base	McIntosh	Dec-2010	9,957	9,957			USA	AL	Washington	ESC	Producing	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
25Q3base	McIntosh	Jan-2011	10,558	10,558			USA	AL	Washington	ESC	Producing	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
25Q3base	McIntosh	Feb-2011	9,313	9,313			USA	AL	Washington	ESC	Producing	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
25Q3base	McIntosh	Mar-2011	9,257	9,257			USA	AL	Washington	ESC	Producing	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
25Q3base	McIntosh	Apr-2011	9,182	9,182			USA	AL	Washington	ESC	Producing	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
25Q3base	McIntosh	May-2011	10,155	10,155			USA	AL	Washington	ESC	Producing	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
25Q3base	McIntosh	Jun-2011	11,659	11,659			USA	AL	Washington	ESC	Producing	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
25Q3base	McIntosh	Jul-2011	11,708	11,708			USA	AL	Washington	ESC	Producing	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
25Q3base	McIntosh	Aug-2011	11,618	11,618			USA	AL	Washington	ESC	Producing	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC

- Click the Make New button at the top of the table and name your new Storage Plan “Storage Workshop”
- Filter the EIA Region for South Central
- In the Period field filter for “On or After Apr-2026”
- Click Datasheet view
- Much like before, we will click in the upper left-hand corner and copy this data to excel

# Storage Plan

Storage_Plan	Facility	Period	Min Qty	Max Qty	Max INJ Rat	Max WD Ra	Country	State	County	Insus Reg	GA Regio	EIA Region	Age Field T	Owner	Owner Typ
25Q3base	McIntosh	Apr-2027	13,415.12	14,905.68			USA	AL	Washingt on	ESC	Producin g	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
25Q3base	McIntosh	May-2027	13,068.02	14,520.02			USA	AL	Washingt on	ESC	Producin g	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
25Q3base	McIntosh	Jun-2027	10,795.93	11,995.48			USA	AL	Washingt on	ESC	Producin g	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
25Q3base	McIntosh	Jul-2027	9,413.84	10,459.82			USA	AL	Washingt on	ESC	Producin g	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
25Q3base	McIntosh	Aug-2027	8,534.28	9,482.53			USA	AL	Washingt on	ESC	Producin g	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC

- Once our data is pasted in Excel, we can paste it again right next to it and begin editing
- We want to Make sure the Name of our Storage Plan Matches our new case, and we want to multiply the “Max Qty” by 2

Storage_Plan	Facility	Period	Min Qty	Max Qty	Max INJ Rat	Max WD Ra	Country	State	County	Insus Reg	GA Regio	EIA Region	Age Field T	Owner	Owner Typ
Storage Worksho p	McIntosh	Apr-2027	13,415.12	29,811.36			USA	AL	Washingt on	ESC	Producin g	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
Storage Worksho p	McIntosh	May-2027	13,068.02	29,040.04			USA	AL	Washingt on	ESC	Producin g	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
Storage Worksho p	McIntosh	Jun-2027	10,795.93	23,990.96			USA	AL	Washingt on	ESC	Producin g	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
Storage Worksho p	McIntosh	Jul-2027	9,413.84	20,919.64			USA	AL	Washingt on	ESC	Producin g	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC
Storage Worksho p	McIntosh	Aug-2027	8,534.28	18,965.06			USA	AL	Washingt on	ESC	Producin g	South Central	Salt Dome	Bay Gas Storage Co Ltd	LDC



## Storage Workshop

1. Days of Service
2. Increasing Storage Data
3. Increasing Storage Plan
4. Putting it all together
5. Summary

# Putting it all Together

From there we will go back to Access in our new storage plan that has been filtered, and delete those records and paste our new ones in. It is important to be very careful that the number of records you are deleting matches the number of records you are pasting back in. Missing data records is my public enemy number one when working with GPCM.

From there is as simple as going back to your Control Panel, ensuring that the new Storage Plan sub case is selected and hitting execute.

What we have done is increase the total working, injection and withdrawal capacities of our storage fields as well as the plan for how they operate in the future.

**GPCM® Market Simulator for**  
Version 13.4.6

Scenario  Linked Database

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**Scenario Subcases**

<b>Supply:</b>	<input type="text" value="25Q3base"/>	<b>Storage_Available:</b>	<input type="text" value="25Q3base"/>
<b>Demand:</b>	<input type="text" value="25Q3base"/>	<b>Storage_Plan:</b>	<input type="text" value="Storage Workshop"/>
<b>Pipeline_Available:</b>	<input type="text" value="25Q3base"/>	<b>Storage_Data:</b>	<input type="text" value="Storage Workshop"/>
<b>AutoExpand_Data:</b>	<input type="text" value="25Q3base"/>	<b>Storage_Link:</b>	<input type="text" value="25Q3base"/>
<b>Pipeline_Zone:</b>	<input type="text" value="25Q3base"/>	<b>Balancing Case:</b>	<input type="text" value="25Q3base"/>
<b>Pipeline_Link:</b>	<input type="text" value="25Q3base"/>	<b>CO2 Case:</b>	<input type="text" value="25Q3base"/>
<b>Supply_Link:</b>	<input type="text" value="25Q3base"/>	<b>Crossborder Case:</b>	<input type="text" value="25Q3base"/>
<b>Demand_Link:</b>	<input type="text" value="25Q3base"/>		
<b>Interconnect_Link:</b>	<input type="text" value="25Q3base"/>		

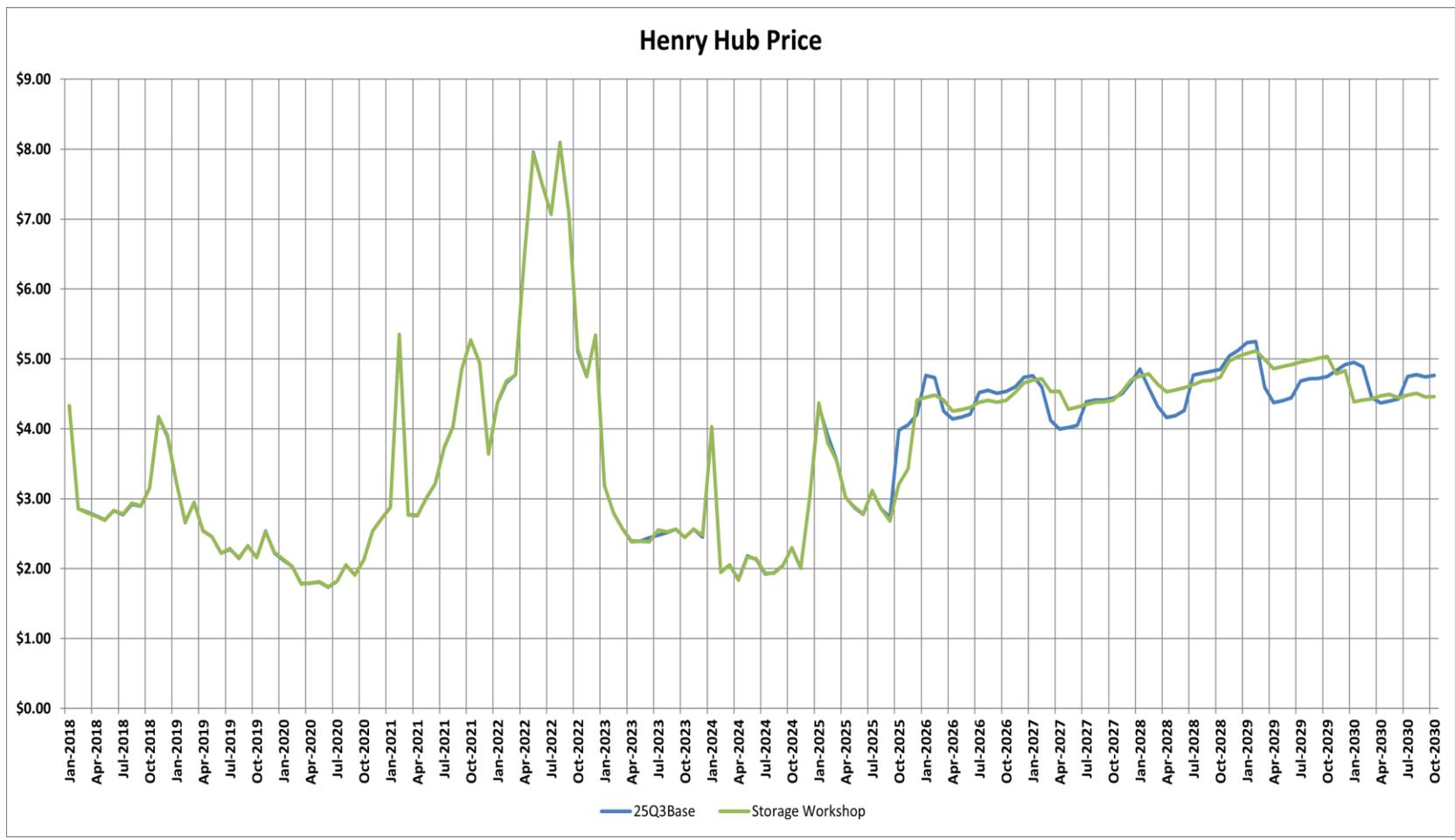
Note: Entries in red have been modified since this scenario was last run.



## Storage Workshop

1. Days of Service
2. Increasing Storage Data
3. Increasing Storage Plan
4. Putting it all together
5. Summary

# Summary



Increasing the Storage Plan and Storage data did reduce prices in the winter and raise them in the summer, however, it was not the magnitude expected. Storage is a complicated balancing feature within the natural gas markets, in the future I wouldn't make formulaic changes to storage, instead relying on editing individual fields and projects.



Questions?



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RBAC leads the market in global and regional gas and LNG market simulation and predictive analytics in support of corporate investment and M&A strategy, ESG, risk analysis, planning, and commodity trading. Our products and expertise help companies go beyond the narratives and hype to identify the opportunities and define the risks inherent in the uncertainties of energy transition using reality and fact-based fundamentals and analysis.

We continuously enhance our market simulation systems with the latest software and computer technology while applying the best of mathematical economics to assist our clients achieve their goals. This is especially needed as we see fundamental shifts taking place in the energy industry to achieve energy transition goals and meet increasingly demanding requirements of ESG. We provide regularly scheduled updates of our simulation systems and databases to keep our clients up-to-date with the most current market information. We enhance the functionality of our systems to enable our customers to simulate the effect of new regulations or industry requirements.

Our aim is to continue to lead the market in best practices which raise the standard of market simulation, enabling rapid and flexible scenario generation, sensitivity analysis, risk-assessment and forecasting, giving clients the edge in the rapidly changing energy market.

Those using RBAC's products and services include energy industry firms and consultants, as well as government agencies involved with energy, transportation, and the environment.

RBAC's principal products include:

- **GPCM® Market Simulator for North American Gas and LNG™** focused on the North American gas & LNG markets. GPCM is the industry standard market simulator for North American gas.
- **G2M2® Market Simulator for Global Gas and LNG™** for simulating increasingly integrated gas and LNG markets worldwide.
- **Gas4Power®** for integrating gas and power market fundamentals to produce credible forecasts for both.
- **NGL-NA®** Market Simulator for North American Natural Gas Liquids

With RBAC's advanced simulation systems, licensees can create and run scenarios involving bio-methane (Renewable Natural Gas – RNG) mixed with natural gas and to assess the implications of carbon taxes and markets on supply, demand, and prices. Future enhancements will include the ability to simulate the advent of a future hydrogen market with both pure hydrogen pipelines as well as mixtures with methane. The Energy Analyst of today and the future needs these kinds of tools to conduct realistic assessments and help develop realistic strategies and plans to achieve the goals of the energy transition.

Dr. Robert Brooks founded RBAC in 1987 based on experience developing several well-respected predictive models for government and industry. He designed the first gas transportation model while getting his PhD at MIT and has led the industry ever since.

RBAC's staff includes industry-trained experts in natural gas supply and demand, transportation, storage, marketing, and trading. Our team applies its world-class expertise in mathematical modeling, statistical analysis, mathematical algorithm development, software engineering, and database design to current and future challenges, risks and opportunities in energy.

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