

The Value of Salt Cavern Storage in the US Gas Market

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1 Introduction

Over the past ten years the natural gas transportation and supply industry has gone from regulated monopolies to a competitive market. The final regulatory act was the Federal Energy Regulatory Commissions' Order 636 calling for restructuring of pipelines, including elimination of the pipeline role as gas merchant, unbundling of pipeline services including storage and the strong encouragement of market centers. The transportation grid in the United States is now an open access system. Storage is included in the definition of transportation and is open access in the interstate system.

Elimination of the pipelines merchant function and open access to transportation including storage, gave shippers of gas the freedom to choose suppliers, services and transportation in a competitive market. They also have the responsibility for managing their supplies: having the right quantity at the right place at the right time all at the least cost.

Deregulation and restructuring, and the growth of market centers, have made it possible for gas marketers, relatively new entrant to the gas industry, to profit from buying and selling gas and by providing services to both producers and end users. Storage plays an important role in the service function and in the marketers ability to earn profits.

There has been a gradual shift in the use of storage from seasonal cycling to shorter term cycling. Shorter term cycling with cycles less than one month and even within a few days, requires high injection and withdrawal capability and relatively small volume. Salt caverns are ideal for this type of application.

The higher cost per unit of space for salt caverns compared to reservoir storage is

measures of cost need to be applied when making comparisons either to construct storage or in leasing space. These measures include cost per working gas, cost per unit cycled, cost per unit of deliverability, and cost per unit of swing.

Storage value should be assessed on the basis of all of the potential and actual uses. Cavern storage can be used to offset or eliminate several cost factors and be used to generate trading profits at the same time or at least in the same time frame.

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