

After Congress Gutted Propane Market Reform, Industry Doubles Down on Secretive Storage Plan

By **Peter Mantius**, on March 16th, 2015

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After failing to convince Congress to fix the root causes of propane shortages and price spikes that rocked the Midwest and Northeast last winter, the U.S. propane industry is now throwing its full weight behind a secretive underground storage project in western New York. Industry's renewed support for that private sector option comes after Congress gutted a 2014 bill to scope out and fund regional propane storage sites.

Now even the make-do private solution is in serious jeopardy. State regulators have already taken five years to evaluate Crestwood Midstream's plan to store 88 million gallons of liquid petroleum gas, or LPG, in abandoned salt caverns near Seneca Lake. They are still, at a minimum, months away from deciding whether to grant the storage permit.

The Houston-based company has tried to cloak the project in secrecy, claiming the history of the caverns is proprietary and confidential. But revelations about the caverns' geologic flaws have ignited intense opposition from across the Finger Lakes region. The propane industry now finds itself pitted against the area's up-and-coming wine and tourism industry, which considers the Crestwood project an existential threat.

With the two sides disagreeing sharply over the level of risk of a catastrophic accident, the state Department of Environmental Conservation is now weighing whether to grant the permit without ever lifting the blanket of secrecy or allowing experts from both sides to testify under oath.



Propane trucks load at Teppco's terminal in Watkins Glen



Richard Roldan

At a DEC hearing last month, attorneys for regional and national propane dealers groups dismissed the project's risks as minimal and stressed the desperate need for regional propane storage. They echoed the March 2014 congressional testimony of Richard Roldan, president of the National Propane Gas Association (NPGA), who said the Crestwood storage facility would have "cascading" positive effects on propane supplies nationally.

New England dealers expect to benefit first. "If we could get the state of New York to approve the Finger Lakes project, we would be fine in the Northeast," Joe Rose, President of the 675-member Propane Gas Association of New England (PGANE), said in a recent interview.

Asked what backup plan is in place if the DEC delays or denies the Crestwood permit, Rose said, "We don't have one yet. My gut is this [storage project] is going forward."

Propane Market is Volatile

Roughly 50 million Americans use propane either for home heating or for powering water heaters and other appliances. In the Midwest it is widely used for drying crops like corn. In recent years, the United States propane market has become increasingly volatile.

While propane production has been rising steadily due to aggressive drilling for shale oil and gas, propane exports are growing even faster. Meanwhile, loosely regulated market players are opting to use pipelines to ship more profitable petroleum products, forcing propane dealers and customers to do without or pay much high prices.

In January 2014, residents and farmers from Iowa to Colorado saw their propane prices double or triple in three weeks. Supply shortages forced New England to resort to unscheduled high-priced propane imports. Even so, some strapped propane retailers quit topping off their customers' tanks to preserve their own dwindling stocks.



Those developments prompted Roldan's NPGA, which represents more than 2,500 retail dealers, to press the Obama administration to intervene. Days later, the Federal Energy Regulatory Commission in a first-ever use of certain emergency powers ordered Enterprise TE Products Pipeline Co. to give priority to propane shipments to the Midwest and Northeast over more profitable shipments of other petroleum liquids. FERC's emergency order quickly added roughly 20 million gallons of propane to the suffering regions, temporarily easing the crisis.

This winter, wholesale suppliers have kept propane flowing, moderating prices and turning down the political heat. But the root causes of last winter's shortages – soaring propane exports and what Roldan described as an “opaque” pipeline regulatory system – remain firmly in place.

The January 2014 supply crisis in New England came a few weeks after Enterprise Products decided to reverse one of two pipelines that normally ship propane to the region. Instead, the pipeline shipped ethane from Pennsylvania to refineries in the South. Midwestern propane supplies were crippled by Kinder Morgan's decision to redirect shipments on its Cochin pipeline. In the future, the company said, Cochin would make shipments of diluent to Canada's tar sands region its top priority.

Decisions on which fuel gets delivered to which destination are driven by profit opportunities on an uncompetitive and “opaque” propane pipeline system, Roldan told a Congressional subcommittee last March. He noted that FERC, which has jurisdiction over interstate pipelines, allows liquid petroleum product pipeline companies to operate affiliates that fall outside its jurisdiction, freeing them to charge dramatically higher prices for similar services. He said natural gas pipelines, also regulated by FERC, do not enjoy the same freedom.

A single company controls the three largest propane pipelines, according to Roldan's testimony. He did not name Enterprise as that company, but it is the sole owner of more than 16,000 miles of pipelines for natural gas liquids, and part owner of another 3,000 miles of lines. The operation of the propane pipeline system, he testified, was “at best opaque, and the lack of transparency substantially increased the difficulty in dealing with propane shortages.”

Proposed Legislative Fixes

In his testimony to the Energy and Power Subcommittee of the House Energy and Commerce Committee, Roldan proposed a series of legislative fixes to protect propane retailers and their customers from future price spikes:

- Require a rigorous federal review of all propane exports.
- Require the FTC to investigate the propane market.
- Require FERC to allow greater transparency in petroleum pipeline operations.
- Require the Energy Information Administration to expand its reporting on propane supply levels, shipments and exports.

In seeking FTC action, Roldan was echoing Sen. Chuck Grassley, R-Iowa, who called last January for the agency to investigate possible illegal manipulation in the propane industry and “to ensure that any supply shortages are not created artificially.”

The FTC inquiry Grassley requested soon led to charges against the nation's leading propane exchange tank suppliers, Blue Rhino and AmeriGas Partners. They were accused of colluding to force Wal-Mart Stores Inc., a top customer, to buy reduced amounts of propane without any change in price. In a settlement reached in January, the companies were barred from fixing prices or coordinating communications with customers.

Calls for transparency and reform by Roldan, Grassley and others prompted the Propane Supply and Security Act of 2014, a bipartisan bill sponsored Sen. Rob Portman (R-OH) and Sen. Al Franken (D-MN).

The bill, introduced last July, called on the federal Comptroller General (GAO) to study the unregulated propane affiliates and determine whether they hurt shippers and consumers. It also required the Department of Energy to consider the feasibility of creating a strategic propane reserve, similar to strategic reserves created for petroleum in 1975 and home heating oil in 2000. The bill required the Department of Agriculture to provide financing for regional propane storage facilities.



Chuck Grassley

Existing and planned propane export facilities

Companies with operational facilities	Location	Capacity (bpd)
DCP Midstream Partners	Chesapeake, Va.	8,000
Enterprise Products Partners	Houston, Texas	249,900
Petrogas Energy Corp.	Ferndale, Wash.	30,000
Sunoco Logistics Partners	Marcus Hook, Pa.	50,000
Targa Resources Partners	Galena Park, Texas	289,300
Companies with planned facilities	Location	Capacity (bpd)
Enterprise Products Partners	Houston, Texas	276,100
Occidental Petroleum Corp.	Ingleside, Texas	75,000
Pembina Pipeline Corp.	Prince Rupert, B.C., Canada	40,000
Pembina Pipeline Corp.	Portland, Ore.	37,000
Phillips 66	Freeport, Texas	144,700
Sage Midstream	Longview, Wash.	47,000
Sunoco (Mariner South)	Nederland, Texas	197,300

Source: ICF International

Reform Bill Avoided Export Issue

The propane market reform bill steered clear of the political minefield of propane exports, which are increasingly distorting the domestic market. Weekly U.S. propane

production is up 35% since 2010, but exports are growing even faster, according to the EIA. In 2013, production rose by 1.5 billion gallons, but propane exports grew by 2.0 billion gallons. That gap is expected to widen. “Announced plans to construct additional propane export capacity would triple propane export capacity in the next three years,” Roldan testified last March.

Enterprise owns the second largest of five existing propane export facilities, and it owns the largest of seven planned propane export facilities, according to ICF International.

While propane exports cut into domestic supplies and tend to drive U.S. prices higher, they are a geopolitical bargaining chip, and they affect many powerful players within the United States and abroad. Even Rose of PGANE, the New England retailers group, supports propane exporting. “We need to export to stimulate propane production,” Rose said. “If we don’t export it, there’s no place to store it.”

The 2014 reform bill was never very ambitious because it never addressed the politically sensitive issue of exports. Regardless, it was effectively neutered. The GAO investigation of propane pipeline affiliates was stripped away, as was the mandate to consider regional propane storage sites. President Obama finally signed a version that includes relatively minor training and research items.

After Congress Punts, Industry Increases Efforts in New York State

While Congress did not address the expressed need for regional propane storage facilities, regulators in New York’s Department of Environmental Conservation have resisted industry pressure to quickly grant Crestwood a permit in the Finger Lakes.

The project figured prominently in Roldan’s March 2014 Congressional testimony, and it remains a top NPGA priority today, according to the group’s website. Roldan had said the association began backing the project in 2009 because “it is essential to meeting Northeast propane needs.”

The Crestwood LPG facility would relieve New York’s demand for propane now stored in North Carolina and Ontario, Canada, he added. “Approval of (the) Finger Lakes (storage project) would have cascading benefits far beyond New York and New England.”

But resistance to the Crestwood plan, particularly from the wine industry, has caught the ear of New York Gov. Andrew Cuomo. Early concerns about **the geological integrity** of the caverns and more **recent worries** about the project’s potential to raise the already high salinity levels of Seneca Lake have turned dozens of the region’s wineries against the project.



In the past two decades the number of Finger Lakes wineries has grown sharply to about 130, while annual tourist visits have jumped from 340,000 to 5 million. Ratings of the region’s best wines have improved. Last year, Wine Enthusiast magazine named the Finger Lakes as its wine region of the year over areas in France, Italy, California and Washington.

After Finger Lakes winery officials met with a Cuomo aide last fall, the state DEC announced that it would hold an “Issues Conference” to decide whether any unresolved matters related to the Crestwood project merited airing in a formal adjudicatory proceeding, adding months of delays to an already protracted permit analysis.

At the conference in Horseheads, N.Y., last month, the DEC staff argued that there were no outstanding issues to block a permit. But the agency’s chief administrative law judge, James T. McClymonds, is evaluating arguments from the project’s opponents. He is expected to take 90-120 days to issue a recommendation to the DEC commissioner on whether an adjudicatory proceeding is necessary.

Attorneys for the wineries argued that the formal proceeding is necessary because the DEC staff had improperly decided years ago to omit any consideration of “community character” from its environmental analysis of the project. An attorney for the company asserted that it was too late to reargue the point.

Closed Sessions on Cavern Integrity, Lake Salinity

Meanwhile, company lawyers continued to assert that cavern integrity and lake salinity worries were both overblown and not subject to public review. For years, the company has asserted that details of the geologic history of the Crestwood caverns, including major leaks and roof collapses, are trade secrets. Generally deferring to the company, the DEC has denied the public access to many key documents, and McClymonds, the ALJ, barred the public and the media from the portions of the recent issues conference that dealt with cavern integrity and lake salinity.

Crestwood notes that the New York State Geological Survey has endorsed the suitability of the caverns for LPG storage in a two-paragraph statement. If a more



Joe Rose



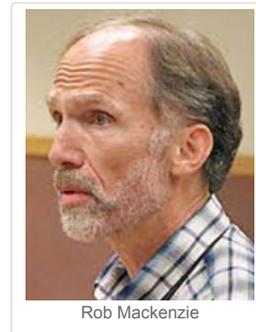
Finger Lakes Vineyards

complete explanation of that contested stance exists, NYSGS has not released it to the public. Crestwood has also cited the results of a quantitative risk analysis, which it funded. Quest Consultants Inc. found minimal geologic risk.

Geologists hired by opponents of the project reject those conclusions. They say the caverns, which are about 2,000 feet under ground in layers of salt and shale rock, are highly vulnerable to leaks and collapses. H.C. Clark, a retired geology professor at Rice University, has been particularly critical. His analysis draws on the published findings of engineers who once worked for the caverns' previous owners. Crestwood has attempted to suppress several of those reports.

Dr. Rob Mackenzie, a medical doctor with many years of experience in risk analysis, studied the accident history of the salt cavern storage industry since the mid-1970s. Based on that public data, he concluded that the risks of a "serious" or "extremely serious" accident at the Crestwood LPG facility would be more than 40% over 25 years. Because the caverns targeted for LPG storage are located less than three miles from the village of Watkins Glen, Crestwood should pick another site, Mackenzie concluded.

Attorneys for Crestwood urged McClymonds, the ALJ, to ignore Mackenzie's analysis because he has no background in petroleum product storage. But attorneys opposing the Crestwood plan noted that Mackenzie analyzed public statistics on hydrocarbon storage in salt caverns, not the caverns themselves. They urged McClymonds to order a formal hearing to consider evidence on who has a better handle on actual risks to the community – Quest or Mackenzie.



Accidents Caused by "Human Error" Disregarded

"Most offsite areas are found to be impacted with relatively low levels of risk," Kevin Bernstein, an attorney for Crestwood, wrote the DEC staff in 2012 about the Quest report. "In addition, this (Quest) analysis is conservative in nature, so it should provide an over-prediction of the true risk posed by this facility."

But the wording in the report raises the possibility that Quest selected data in a way that trimmed cavern accident rates. For example, it appeared to exclude certain accidents from consideration if they were caused by "explicit human error" when it wrote:

"Accidents that are the result of explicit human errors, but do not involve failures of components, are not included in typical failure rate data bases. Examples of such accidents include overfilling a tank (resulting in a liquid spill) ... [or] opening a water-draw-off valve on an LPG tank and then walking away (resulting in a release of LPG)....In the analysis that is the subject of this report, the accidents of interest all involve failure of a physical component of a process system."

Both examples Quest cited have been identified as causes of catastrophic accidents at LPG cavern storage facilities.

"Overfilling a tank" has been implicated in a number of serious accidents, including an LPG leak at a storage facility in rural Brenham, Tex., in 1992, where propane detonated with the estimated force of a three kiloton bomb. The explosion was reportedly heard 150 miles away in San Antonio. In contrast, the atomic bomb that destroyed Hiroshima, Japan, in 1945 had a yield of about 15 kilotons.

The other example Quest cited "opening a water-draw-off valve on an LPG tank" describes the cause of a 2005 accident at an LPG storage cavern facility in Middletown, Ohio. In that case, propane leaked as Teppco employees were separating water from LPG being withdrawn from a storage cavern, according to the accident report. One of those employees was killed.

If, as its report stated, Quest did not consider such "explicit human error" accidents in its analysis, it may have artificially lowered the potential for a serious accident at the Crestwood storage site.

The site of the fatal 2005 accident, the Todhunter Terminal in Middletown, plays a key role in delivering propane to the Northeast. Located about 30 miles north of Cincinnati, the terminal is adjacent to several shale rock caverns that have been used to store LPG. The complex is owned by Enterprise Products Partners. Enterprise, which bought Teppco in 2009, was the company that FERC ordered to make emergency propane shipments in February 2014.

Two Enterprise pipelines pass Todhunter: the one that was reversed early last winter to send ethane south from Pennsylvania and the line that passes by the Crestwood site in the Finger Lakes on its way to Selkirk, N.Y., the propane gateway to New England.

Years of LPG Cavern Leaks

The Todhunter LPG storage caverns have served to level out propane supplies along those lines. But they have had a history of leaks since the fatal 2005 accident, and they have recently been emptied.

In 2006, the local fire department reported more than a dozen cases where "natural gas or LPG" leaks triggered alarms within several miles of the terminal.

In October 2012, propane gas was detected at a steel company about a mile from the Todhunter terminal. A month later, the state Department of Natural Resources said it had been asked to provide maps of the caverns after foundation drilling at the steel company "caused fires."

In March 2013, Enterprise distributed free propane detectors to 70 homes near the terminal. A company spokesman told the Columbus Dispatch newspaper that the

caverns, which can hold more than 50 million gallons of propane, were being emptied for tests.

In December 2013, the trade publication LP Gas quoted PGANE officials as saying the combination of the geologic failure of the Todhunter caverns and the reversal of the pipeline to carry ethane south rather than propane north had eliminated “a huge safety value” for the Northeast. In July 2014, LP Gas reported that Enterprise had yet to confirm the integrity of the caverns and that “it currently has no plans to return them to service.”

Their absence continues to affect propane supplies in the Northeast, which now has LPG storage capacity of about 5.1 million barrels, or roughly 200 million gallons, according to Crestwood. The Finger Lakes project would add another 88 million gallons of regional capacity, according to a company power point.

Teppco Abandoned New York Salt Caverns



Teppco currently provides about 20% of the Northeast’s existing LPG storage capacity – roughly 45 million gallons – on property immediately across the highway from Crestwood’s salt caverns near Watkins Glen. Teppco once stored LPG in those same salt caverns, beginning in 1964. But it abandoned the practice without public explanation in 1984. Since the mid-1980s, it has stored LPG in a cavern dug in shale rock and then lined to prevent leaks. The DEC has said it has no records that show why the company went to the expense of moving its storage facility.

Opponents of the Crestwood project argue there is no need to locate a regional propane storage facility in potentially risky salt and shale caverns on the shores of the marquee lake in a region that relies economically on wine and tourism.

The company said it had considered and rejected alternative sites. The presence of the long-abandoned salt caverns sealed the decision, according to Bill Gautreaux, president of Crestwood’s liquids and crude business unit. In a recent interview with *The New York Times*, Gautreaux said: “Certainly if we were starting from scratch and saying, ‘Where would you build a liquefied petroleum gas storage facility?’ you probably wouldn’t put it right there over Seneca Lake, near the wine country. But the reality of it is that it already exists.”

Rose of PGANE said the propane industry is counting on New York to provide needed regional storage. Until Crestwood gets its underground storage permit, he said, New England would continue to add modest above-ground propane storage capacity, a much more costly option than using the abandoned salt caverns.

Rose cited modest expansions of propane storage in Newington, N.H., and Providence, R.I. The New Hampshire facility is seeking to boost its capacity by 270,000 gallons to accept more propane shipments by rail. And Rose said the region could always fall back on propane imports, although they require paying at least a \$1 per gallon premium.

The federal government’s failure to address important issues on the storage, cost and transparency of propane distribution has left the industry to press for alternatives that are less desirable for all concerned.



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