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SUMMARY OF THE SECOND ROUNDTABLE ON THE RESILIENCE OF THE LIQUID FUEL SUPPLY CHAIN IN THE NEW YORK TRI-STATE AREA

INTRODUCTION

On October 17, Columbia University's Center on Global Energy Policy (Center) hosted the second roundtable discussion on how to fortify the Tri-state region's liquid fuel supply chain following Hurricane Sandy. The forum brought together top federal, New York State, New Jersey and New York City energy and resilience officials with high-level representatives from the energy industry, including electric utilities, refineries, terminals, pipelines and retail outlets. The discussions focused on priority topics identified at the first roundtable held in May (read the May 9 roundtable summary here) to increase the resilience of the regional fuel supply, and sought to identify and recommend next steps to enhance regional coordination on these issues. Those topics were: maximizing situational awareness and information flow during disruptive events, new regional government refined petroleum product reserves, adequate resilience for critical assets, and improving the emergency fuel waiver process and coordination. One primary goal of the October roundtable was to identify specific items and/or issues generally considered to warrant priority attention from industry and government going forward.

It was recognized at the outset that there are diverse efforts underway to address these issues at the federal, state and local levels, as well as independent initiatives undertaken by the private sector. Participants provided feedback on current efforts by New York State, New Jersey, the US Department of Energy (DOE) and the US Department of Homeland Security (DHS) to improve fuel sector resiliency and discuss what priority actions are necessary and practical to facilitate regional coordination. **There was general agreement among participants, however, that a regional resilience strategy for the Tri-state area liquid fuel supply chain is needed and should be a priority for action.**

Another theme that emerged as a priority item is the need to improve information-gathering by the public sector, including access to real-time information for critical assets and operations across the liquid fuel supply chain, and to facilitate information-sharing prior to and during emergencies among the public sector and between the public and private sectors. The roundtable also gave participants an opportunity to develop working relationships, build communications networks, and share lessons learned and best practices.

The October roundtable, held under Chatham House Rule, is part of a series of convenings held by the Center in response to a request from the City of New York and based upon interest from public and private sector stakeholders. It was undertaken as part of a broader Center project to monitor the resilience of the energy sector.

Following is a summary of the four major issues discussed during the roundtable.

GOVERNMENT REFINED PETROLEUM PRODUCT RESERVES

Since Sandy, the DOE and New York State have set up emergency stocks of refined petroleum product. The DOE has finished filling the refined product reserve in the Northeast with one million barrels of gasoline—divided into 700,000 barrels in three New York Harbor terminals, 200,000 barrels in Boston Harbor, and 100,000 barrels in Maine. Each terminal is required to have a variety of multi-modal distribution channels to move the product in an emergency. The New York State-operated reserve located on Long Island is modest in size (2.5 million gallons of gasoline currently in storage) and, according to participants, not intended to respond to large-scale supply shocks. The State is currently working with distributors to identify key retailers and the first responders that could receive gasoline in an emergency.

Some participants noted a need for more clarity concerning DOE's distribution process and plan. One recommendation was for the DOE to pre-select potential priority customers, similar to the approach proposed by New York State, although it was pointed out that it is difficult to determine ahead of time where gasoline would be needed in any particular emergency.

Others stressed the need for more clarity on the criteria and timing of releases in order to mitigate potential adverse market impacts, and for close coordination among federal, state and local officials and between the public and private sectors regarding operation of the reserves.

One participant claimed that the trigger for release of product is different for DOE's Northeast gasoline reserve than for DOE's Northeast heating oil reserve. It was suggested that this issue be resolved because any single emergency may require DOE to release fuel from both reserves but might actually only trigger releases from one of them unless the triggers are the same. Another issue attendees flagged for clarification is whether DOE can make loans of gasoline from the Northeast gasoline reserve to state and local governments as it can with product in its heating oil reserve.

Effective timing of releases from the reserves will depend on a reliable flow of market information in real time from industry to government according to some participants. For example, one participant noted that whether market recovery may be achieved more quickly through demand-control mechanisms such as rationing or closing certain non-essential services than through an increase in supply requires analysis of on-going market conditions. On a related matter, it was noted that curtailment plans such as rationing should be periodically reviewed to ensure they are up-to date and ready for implementation when emergencies arise.

In sum, coordination among public officials and with the private sector on market conditions, release and distribution of reserves and use of supplemental demand management measures emerged from the discussion as priority topics.

MAXIMIZING SITUATIONAL AWARENESS

Having accurate, real-time information available—as well as comparable baseline data in advance of and during an emergency—and a streamlined system for gathering and sharing that information are necessary to formulate effective response measures and minimize the duplicative requests that private and public

sector officials received during Sandy, according to several participants. The types of information noted by several participants as critical for key facilities across the supply chain include: supplies (including existing and anticipated stocks and their availability, i.e., allocated or unallocated to specific customers), distribution networks, operational status and expected down time if any, and response plans.

Much of the discussion focused on the need to improve the current system for gathering and sharing this data, which is largely voluntary in nature and built on established relationships and trust between the public and private sector.

The data collected by DOE's Energy Information Administration (EIA) regarding the petroleum industry's refined products inventories is generally not suitable for the purposes of emergency preparedness and response, as it is generally a week old when published and gives an aggregated regional picture of stockpiles rather than real-time, facility-specific data, participants said.

EIA is limited in what types of data it can collect generally as well as during an emergency, according to attendees. In order to collect "new" types of data, EIA must first receive approval for a new data survey from the Office of Management and Budget (OMB), a process that can take up to six months. The EIA may do an emergency survey without OMB approval for 10 or fewer respondents only. It was noted that during Sandy, EIA obtained OMB approval for a more detailed survey of the status of retail outlets within a week thanks to the effort and support of a variety of stakeholders.

Whether the limitation on EIA's authority to collect and share site specific and/or real-time data is statutory, regulatory or a matter of policy is an issue some participants said needs clarification. To the extent the limitation is based on the need for OMB approval, the suggestion was made that detailed data surveys needed for emergency preparedness could be pre-approved by OMB so they could be automatically available once an emergency is imminent. While some attendees noted that it may be difficult to pre-determine specific data requests for every type of crisis, it was pointed out that this would not prevent EIA from preparing a series of detailed data requests for generally expected emergencies and having them pre-approved, and establishing an expedited OMB approval process for any significant changes needed in specific circumstances.

One participant suggested public officials should examine on a regular basis ways to gather baseline data comparable to that needed for emergency response because such baseline information would greatly assist in assessing the risks presented by and formulating responses to emergencies. In a similar vein others noted the need to develop an accessible set of data including updated maps to ensure that public officials have a comprehensive understanding of the critical assets that comprise the regional liquid fuel supply chain, its operations and key interdependencies.

In addition to collecting the right data, participants noted how information is shared and the flow of information during an emergency are also critical components of maximizing situational awareness. Some industry representatives asserted it is the government's responsibility to organize and manage the flow of

information, including identifying who needs what information and when it is needed. It was suggested that an incident command management system could address part of this need. The Coast Guard, for example, has adopted the Common Assessment and Reporting Tool (CART), an information system developed and used by the Coast Guard for assessing impacts on the Marine Transportation System during emergencies and is reportedly used by 12 other agencies.

The New Jersey private sector desk was cited as an example of a mechanism that can facilitate information flow from industry to government and vice versa during emergencies that proved useful during Sandy. The desk places an industry representative in the emergency management center who provides real-time data received from industry to government officials. It was noted however, that this is a voluntary system that operates essentially on established relationships—New Jersey emergency management officials receive only the information that industry is comfortable providing. The importance of maintaining strong relations between the public and private sector to help facilitate flow of critical information was stressed several times by attendees from industry.

Some cautioned that waiting for information to be "centralized" during an emergency is not always effective, since relevant information should be shared as soon as possible, although others noted the need to ensure that information received is reliable, accurate and correctly interpreted.

Private sector participants expressed concerns about how the collected information would be used by public officials (e.g., data resulting in actions that could adversely impact the highly competitive market in which they operate and their business decisions), such as how much inventory to hold and projected costs of doing business based on market conditions. Private sector participants maintained that during Sandy they had sufficient information about market and supply conditions and engaged in "work-arounds" to do their best to allocate available supplies where needed without interfering with contractual obligations, and that the market worked quite well. Others noted that even assuming the market can assist in response efforts, private sector actions, strategies and assessments need to be communicated to the public sector in real time so public officials can coordinate their actions with the private sector and be effectively able to advise the public of on-going conditions.

In sum, attendees generally acknowledged that the existing system for gathering data based on limited public sector authority to mandate reporting, supplemented with the voluntary flow of information from the private to the public sector, needs improvement, including enhanced regional coordination.

Priority items that emerged from the discussion include examination of: (1) the nature and extent of authority of public officials to gather information deemed critical for emergency preparedness and response (e.g., including the need for and means to facilitate expanded and expedited reporting of real-time, facility specific data and access to business continuity and emergency response plans) as well as gathering of comparable baseline data, and (2) how to coordinate use and sharing of this information while mitigating potential adverse market impacts and adequately protecting proprietary information.

It was noted that the pending National Petroleum Council's emergency preparedness study, due out in December 2014, is expected to contain recommendations for improving the flow of real-time information to the government during emergencies that could assist in addressing these issues.

ADEQUATE RESILIENCE FOR CRITICAL ASSETS

Two threshold issues that arose on this topic were: how can resiliency be defined in an industry as diverse as the Tri-state fuel system, and in turn, what are adequate resiliency standards?

Attendees discussed resilience primarily in terms of "hard" strategies such as protective barriers, raising or relocating equipment above projected flood levels or installing back-up power, and "soft" strategies such as training, emergency response and business continuity planning.

Participants shared examples of current mechanisms or processes that can support or build a base for the development of formal or voluntary resiliency standards, including the voluntary resiliency assessment of fuel terminals conducted after Sandy by New York State; and voluntary regional resiliency assessments (RRAPs) by US DHS. One participant pointed out that RRAP projects can leverage the capabilities of other Federal agencies and National Laboratories on behalf of state and local government partners, which currently include the New Jersey Office of Homeland Security and Preparedness, now participating in their second RRAP examining critical petroleum sector assets in the state; and Colonial Pipeline, Kinder Morgan, API and 16 states examining the regional pipeline system serving the East Coast. It was noted that the results of RRAPs are initially made available only to DHS' primary partners but that wide information sharing by these primary partners is encouraged, particularly with individual companies that participate in the RRAP. It was clarified that DHS' primary partners are typically state or local agencies, but exceptions can be made based upon the origin and scope of the project.

For the private sector, many stated that most companies have business continuity and emergency preparedness plans, but it was not clear how and to what extent these identify vulnerabilities and have resulted in hardening of critical assets or other resiliency enhancements. It was noted by some attendees that one firm has acquired a fleet of mobile generators it can deploy to its facilities damaged by storms and did so during Sandy. Another firm since Sandy has expanded emergency power generation capability as well as raised and/or relocated electrical equipment and critical pumps to non-flood prone areas at several of its facilities.

Others noted that when hardening specific assets, it can be difficult to determine what "resiliency standard" should be applied due to difficulties obtaining accurate data to predict potential storm surge levels, wind speeds, and other risk factors for specific locales. The point was also made that each site faces different risks based on a number of factors, for example location, and where material differences exist, different assets may require different treatment. Hence there might not be a one-size-fits-all solution.

To help address these challenges, it was noted that DOE has launched an infrastructure analysis and

monitoring program that measures long-term climate-related threats such as sea-level rise and conducts predictive analytics for risks during storms. These new analyses and functions will be integrated and layered upon existing data on energy infrastructure, although there is some concern that this information can cause fuel prices to react if it reaches the market. NOAA is reportedly developing detailed data to predict the storm surge coming onshore in the NY Harbor area based upon its strength and direction of travel, but it is unlikely to be available for at least two years. Another potentially useful planning tool mentioned is the Sea, Lake and Overland Surges From Hurricanes (SLOSH) model developed by the National Weather Service to estimate storm surge heights using various parameters.

Despite existing private sector cooperation with government initiatives in the emergency preparedness and resiliency space, some public and private sector participants noted that industry could do more and should take a harder look at the criteria and resources devoted to preparedness. At the same time, others stressed that the cost-effectiveness of resiliency investments is a major concern and must be taken into consideration by companies when formulating capital plans. One example noted it could be cost prohibitive for a firm with substantial numbers and types of facilities to provide back-up emergency power generators for them. One point of view offered on behalf of the government was that each individual facility does not need to be fully resilient as long as the entire chain can function well in an emergency. With its limited resources, a government official noted public funding will be deployed in the best way to ensure that the entire system is resilient, although industry should be aware that the government cannot do everything. One perspective from industry is that it would be more amenable to making resiliency investments if they were able to pass on the cost via appropriate rate increases—an option that currently only applies to regulated utilities.

It was agreed that a reliable source of electric power is vital to the resilience of the liquid fuel supply chain. It was reported that since Sandy, utility regulators in New York and New Jersey have approved programs that place critical assets such as terminals, refineries and pipelines in the top priority classification for restoration of service. The question was raised as to whether asset owners were seeking to install alternative power systems on their sites such as micro-grids, distributed energy systems such as solar panels, or co-generation plants. It was noted that pipeline operators generally need a firm supply of steady baseload power from the grid and did not view other options (except back-up power generators where economical) as viable alternatives.

With respect to terminals, it was noted that there are over 100 terminals of various types in New York State and that in view of the generally low profit margins in the terminal business, any requirements to install alternative or back-up power systems would likely result in some operators closing as the cost could not be justified.

In light of the apparent lack of any mandatory requirements for assessment of and steps to address asset vulnerability to natural disasters, some suggested that industry interest in business continuity might offer sufficient incentive for adequate resilience plans to be adopted. It was noted however that public sector access to such business plans depends on established relationships and voluntary disclosure, which could

complicate effective assessment of this voluntary approach. One exception in the case of mandatory assessments was noted: following Sandy, the Coast Guard conducted site inspections of the 58 bulk terminals impacted by the storm in NY Harbor to assess their safety and security.

It appeared from the discussion that there is no existing or apparent plan to develop a regionally coordinated and focused assessment of vulnerability of critical assets in the Tri-state area's liquid fuel supply chain to natural disasters and options for enhancing its resiliency. In addition, there does not appear to be generally accepted metrics, criteria or standards for resiliency.

One main priority item that emerged from the discussion was (1) the development of resiliency standards, taking into account that different assets and sites will likely require different treatment. There was also substantial support for conducting a broad survey and creating a catalogue of best practices regarding both hard and soft resiliency measures to aid in this effort, subject to appropriate protections for confidential business information. Other priority items that emerged include: (2) development and sharing with the private sector of improved regional risk assessment tools and data on threats such as storm surges, sea level rise, hurricanes and flood zones; (3) a regionally focused assessment of the vulnerability of critical components of the liquid fuel supply chain to natural disasters and options for enhanced resiliency; (4) securing and sharing the results of vulnerability assessments of critical assets across the liquid fuel supply chain, including business continuity and emergency response plans, subject to appropriate protections of confidential business information; and (5) examination of the need and options for cost sharing and other financial incentives to support critical private sector resiliency enhancement measures.

IMPROVING EMERGENCY FUEL WAIVERS PROCESS AND COORDINATION

Participants stressed the need for expedited action on the processing of emergency waivers and permits for the liquid fuels sector (e.g., vapor recovery, fuel, and transport-related permits including driver hours, weigh limits, tolling, etc.) during a crisis. Much of the discussion focused on the major constraints on the current waiver process, namely limited statutory authority, timely access to real-time market information needed to inform a waiver decision (e.g., waiver of certain fuel specifications, or Jones Act requirements), and a lack of a centralized system, including a comprehensive, current list of key public and private sector contacts, to organize the waiver process at each level of government and coordinate it regionally.

Approaches to address some of these constraints center around two main ideas raised by attendees: try to do as much as possible prior to the actual emergency; and create a set of useful resources to help navigate the process during an emergency.

One government entity is looking at creating templates or pre-scripting the set of documents required for a waiver or permit to the extent this is possible. One suggestion put forward called for setting up and dispersing the information required from the private sector to request a waiver in advance of a disaster. It was noted that the National Petroleum Council in its pending emergency preparedness study is looking into setting up a one-stop shop where industry can go to understand what materials are required and what

the process will be for each situation. Another idea advanced was automatically linking certain waivers or activating certain processes to formal declarations of emergency by the President or relevant Governor. Such measures may require legislative modifications. Participants also mentioned that leadership from the top—such as President Obama's directive during Sandy to "cut red tape" —could expedite the waiver process.

Participants stressed that not all waivers are helpful at all times, however. Different emergencies require different responses, and there will always need to be an assessment of market and other relevant information and a determination as to whether the waiver will positively impact the need to move, expand or otherwise allocate fuel supplies.

In addition to expediting the waiver process, another key issue discussed was improving coordination of waivers and their implementation across levels of government. One participant suggested that there should be a separate waiver team at the state and local level, much like the Environmental Protection Agency's waiver team, which could be ultimately overseen by a waiver coordinator and expediter at the federal level.

In sum, priority items that emerged from the discussion include: (1) examination of practical ways to mitigate current constraints on key waiver processes, (2) and improved coordination of waiver processes at each level of government and regionally, subject to overall direction from a centralized source at the federal level.

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