

**Department of Energy  
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**Opening Remarks of Peter Carnavos  
Director of Gas Supply  
Consolidated Edison**

**Opportunities and Challenges for Natural Gas and Liquid Fuels  
Transmission, Storage and Distribution Infrastructure**

Good afternoon. I am Peter Carnavos, Director of Gas Supply for Consolidated Edison. I am honored to have been invited by the Department of Energy to share my perspective today. Con Edison provides natural gas, electricity and steam to customers in New York City and also provides gas and electricity to customers in the surrounding areas, including through its affiliate Orange and Rockland Utilities. In all we serve more than 3.7 million electric customers, and 1.2 million natural gas customers.

In my capacity as the Director of Gas Supply, I oversee all aspects of our natural gas supply portfolio for both Con Edison of New York and Orange and Rockland including purchasing, scheduling, billing, analysis, gas transportation services and planning. We maintain a pipeline and storage capacity portfolio that provides supply diversity and the flexibility to obtain the lowest cost gas for our firm customers consistent with maintaining reliable gas service. In addition, our company acts as a system operator providing balancing services for all firm and interruptible delivery customers, including gas-fired electric and steam generators.

This gas supply portfolio is provided through multiple points of delivery from interstate pipeline systems into the Companies' service areas. The addition of new interstate pipeline capacity to our gas system, as well as the Company's gas system enhancements, enables the Company to serve the increasing service requirements of gas customers and generators in a safe and reliable manner.

The focus of my participation today will be on natural gas infrastructure.

The Growing Gas Business and System Needs

Natural gas plays an important role for Con Edison, fueling the economic engine of our region, is critical for power generation, and continues to have a major role in cleaning-up the environment through New York City's Clean Heat program and also through the choices customers make to use natural gas as their heating fuel.

Con Edison of New York's gas service territory comprises only 660 square miles, but serves over 1.1 million gas customers through 4,300 miles of gas mains. Orange and Rockland's service territory comprises 1,350 square miles, but serves about 0.3 million gas customers. We continue to upgrade and expand our gas-delivery systems as our gas business grows with New Yorkers embracing the financial benefits, reduced emissions, and lower cost of natural gas, as compared to oil-burning alternatives.

I will focus now on our larger regulated utility, Con Edison of New York, which is the second largest gas distribution company in the Northeast based on total throughput volumes and the fifth largest nationally. Our natural gas business growth has been driven by New York City's recent regulations that began in 2011 is phasing out the burning of #6 oil by 2015 and #4 oil by 2030 for building heating to reduce fine particulate emissions in the City and help the City meet air quality goals. We expect peak demand for our gas business to grow approximately 3 percent annually over the next five years as customers continue to convert from oil to natural gas.

To give you some perspective on the significance of our gas customer growth and system needs, in 2013, we:

- Added 1,300 large New York City building that converted from oil to gas
- Invested over \$500 million to strengthen and expand our gas infrastructure
  - Installed more than 2,500 new services and replaced more than 50 miles of gas main
  - Installed 14 multistage gas regulator stations and almost 15 miles of new gas main to strengthen our distribution system and allow for gas conversions

Over the next three years, we plan to invest over \$1.5 billion in our gas system.

We take a very strategic approach to our investments. Our engineers have identified geographic zones across New York City where the greatest clusters of buildings are burning heavy fuel oil. We achieve a great economy of scale by connecting multiple customer services in a targeted area. By coordination construction activity, we are able to lower our costs. Any infrastructure savings we accrue can in turn be passed onto the customer.

Our dense urban service territory means the underground infrastructure is extremely congested, as space is shared between electric, gas, steam, water, sewage, and subway infrastructure. This means that testing or replacement of gas pipe can have a major impact on the surrounding population. Our existing main replacement program involves condition-based replacement of cast iron and unprotected steel distribution mains with plastic pipe to reduce leaks and maintain system integrity. To help reduce risk and avoid incidents, we have developed a pipe selection process that addresses risk and prioritization for the replacement of approximately 60% of the distribution assets (the remaining 40% is already plastic piping). This strategic process and other planning efforts come together as an integrated capital program to address an aging system and provide for load growth.

We plan to replace approximately 65 miles per year of prioritized gas distribution main during 2014 to 2016 period, and are also considering ways to accelerate that work further. As we work to modernize our gas distribution system, we protect our customers and the environment through a comprehensive leak detection program. We take pipeline safety very seriously and have increased the frequency of our leak surveys are testing new leak survey technologies, and have a robust customer education/safety/awareness campaign - "Smell Gas, Act Fast."

### Upstream Pipeline Investment

With increased demand comes an increased need for more gas supply in our region. New York City's proximity to growing Northeast supply region, specifically Marcellus and Utica Shales in Pennsylvania, Ohio and Virginia, has made it attractive for producers and marketers to invest in interstate pipeline capacity along with gas distribution companies, such as Con Edison, to meet the market's gas demands.

In 2013 new and expanded transmission pipeline provided an additional 1,000,000 Dth/day of new capacity to the City, increasing available capacity to the City by 30 percent. These capacity additions to the region required a participation of Con Edison of only 17% through a firm capacity commitment. The remaining 83% of firm capacity was contracted for by other market participants – producers and marketers.

This new regional capacity came from two projects - the Williams' Transco Northeast Supply Link and Spectra's Texas Eastern New Jersey – New York project. The New Jersey – New York Project brought 800,000 Dth/day of this new capacity. In addition to the Spectra project, the existing Transco pipeline expanded to add 200,000 Dth/day of deliverable capacity into New York metropolitan area.

To accommodate these projects, Con Edison added about a quarter of a mile of pipeline and associated facilities to connect to our gas system.

In its first winter season of operation, this new regional capacity was utilized at over 90% load factors as significant volumes were delivered to gas customers and gas-fired generators in the Northeast region. For Con Edison, over 40% of these volumes were delivered to our system that resulted in savings to our customers through lower costs of gas. The increased supply into New York City was not the only benefit to gas customers. Con Edison also enhanced our system reliability by adding the Texas Eastern Manhattan delivery point. These pipeline capacity additions resulted in changes in regional gas flow, producing operational and customer benefits by improving reliability and diversity of gas supplies in the regions. In addition, the regional capacity has suppressed gas prices in the area.

### Gas/Electric

Growing use of gas-fired generation is creating large demands on gas systems as well, both pipeline and LDCs, including large intra-day swings in demand. In New York City, gas-fired electric and steam generation is generally located on either Con Edison or National Grid's gas system. We rely heavily on dual fuel capability to meet electric and steam system needs during peak gas usage periods since the utilized interruptible gas delivery services. This capability also provides reliability benefits in the event of a gas system contingency. Dual fuel capability will likely continue to make sense in New York City for the foreseeable future.

We appreciate the Federal Energy Regulatory Commission's attention to gas/electric coordination, including its most recent efforts to better align gas and electric scheduling practices to meet gas-fired generators needs. Con Edison is supportive of changes to gas scheduling, including an earlier start of the Gas Day as FERC has proposed.

However, infrastructure will be key to ensuring the reliability of both the gas and electric system moving forward. To meet these system needs in the most cost-effective manner possible, regular forward-looking joint gas/electric planning studies, comparable to the ongoing Department of Energy funded Eastern Interconnection Planning Collaborative, should be considered. These studies may provide valuable insights into the needs of both the electric and gas system. As work continues on these sorts of projects, it has become apparent that numerous challenges are presented when modeling across the two systems.

### Conclusion

In conclusion, there are numerous challenges for gas transmission and distribution infrastructure today. Our opportunity will be to continue to meet the needs of our customers with reliable service at a reasonable cost, and with the least amount of impact on the environment.

Thank you for the opportunity to speak today.