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March 12, 2013

VIA E-FILING

Honorable Jeffrey C. Cohen, Acting Secretary
State of New York
Public Service Commission
Three Empire State Plaza
Albany, New York 12223-1350

Re: Cases 12-G-0297 - Proceeding on Motion of the Commission To Examine Policies Regarding the Expansion of Natural Gas Service

Dear Secretary Brilling:

The Brooklyn Union Gas Company d/b/a National Grid NY, KeySpan Gas East Corporation d/b/a National Grid, and Niagara Mohawk Power Corporation d/b/a National Grid (collectively, "National Grid" or "Companies") hereby submit comments in response to the questions directed to interested parties in the Commission's order of November 30, 2102 in the above-mentioned proceeding.

Please contact the undersigned with any questions regarding this filing.

Sincerely,

/s/ Philip A. DeCicco__
Philip A. DeCicco

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Date of Request: November 30, 2012 Due Date: March 12, 2013

CASE 12-G-0297 - Proceeding on Motion of the Commission To Examine Policies Regarding the Expansion of Natural Gas Service

Joint Comments of The Brooklyn Union Gas Company d/b/a National Grid NY ("KEDNY"), KeySpan Gas East Corporation d/b/a National Grid ("KEDLI") and Niagara Mohawk Power Corporation d/b/a National Grid ("NMPC") (collectively, "National Grid" or the "Companies")

Barriers to Extension and Expansion of Natural Gas Facilities

1. Please explain your understanding (and for utilities, your implementation) of Commission regulations and the Natural Gas Expansion Policy including your views on whether they encourage or deter expansion of the natural gas delivery system in New York State. Do you feel that the Commission regulations and Policy should be modified and if so, how?

Response: For new customers applying for gas service within the Companies' existing franchise areas, National Grid's tariffs incorporate the relevant provisions of the Commission's main extension regulations (16 N.Y.C.R.R. 230.2(a) *et seq*.) regarding new customers' entitlements to gas main and service laterals required to connect to the Companies' distribution systems. A prospective customer's service classification determines the amount of facilities the Companies will provide at no cost:

Residential Non-Heating Firm Customers

100 feet of main and service line measured from the centerline of the public right-of-way,[1] but not less than 100 feet of main (if necessary) plus the length of service line necessary to reach the edge of the public right-of-way.

[1] The service line will be measured from the main if it is closer to the customer and development will be limited to one side of the right-of-way for at least 10 years.

Residential Heating Firm Customers

100 feet of main and 100 feet of service line measured from the centerline of the public right-of-way,[2] but not less than the length of service line necessary to reach the edge of the public right-of-way.

Non-Residential Firm Customers

100 feet of main and any service line located in the public right-of-way.

If additional main is required to connect the customer, the Companies will offset the cost of these additional facilities based on the customer's projected adjusted gas revenue ("AGR"). Where a customer's AGR is greater than 40% of the cost of the main extension, the excess AGR is utilized to further offset costs associated with the service line. To the extent the additional facilities are not offset by the customer's AGR, the customer will be asked to contribute to the cost of service lines, service connections and appurtenant facilities. Customers may choose to pay for these facilities through either a surcharge or an upfront contribution.

With regard to the Commission's Natural Gas Expansion Policy, the Companies understand that the Commission will analyze the financial feasibility of franchise expansion using the five-year revenue test described in Case 89-G-078, *Policy for Rate Treatment of Gas Service Expansion into New Franchise Areas*, "Statement of Policy Regarding Rate Treatment to be Afforded to the Expansion of Gas Service Into New Franchise Areas" (Issued December 11, 1989)("Natural Gas Expansion Policy"). The Companies believe this proceeding should consider whether the Natural Gas Expansion

[2] *Supra*, note 1.

Policy should be revised to provide for greater flexibility in analyzing the profitability of gas expansion projects (*e.g.*, longer payback periods) and consider alternate cost recovery mechanisms for capital investments supporting gas growth. A variety of factors may support franchise expansion into a particular area, such that a rigid approach to analyzing franchise expansion may serve to discourage gas growth. NMPC's recent expansion into the Village of Greenwich demonstrates that franchise expansion can be accomplished under the right economic conditions.

The main extension regulations and franchise expansion policies should encourage the expansion of natural gas service by balancing the costs and benefits of system expansion between the local distribution companies ("LDCs") and their customers. While the Companies have successfully expanded access to natural gas under the current regulations, National Grid believes the opportunities and challenges presented in further gas expansion call for a review of those regulations to determine whether more could be done to encourage expansion, particularly at the extremities of the Companies' distribution systems where significant capital investments are often required to connect new customers. National Grid believes any changes to the regulations should consider the interests of new gas customers (especially given the potential for customer savings in this low-cost commodity environment), current gas customers and the LDCs looking to recover the costs of prudent investments to expand service, as well as the overall benefits to the State realized from the expanded availability of gas service (*e.g.*, the economic and environmental benefits). The Companies look forward to the opportunity to discuss these issues in the context of this proceeding.

2. Regarding the Commission's regulations of the natural gas delivery system and the system itself, do you believe that the interests of utility shareholders, ratepayers, and the State as a whole are aligned? Please explain.

Response: National Grid believes that customers, shareholders and the State can all benefit from the expansion of natural gas service and, therefore, these stakeholders share a common interest in encouraging reasonable regulations and policies that promote natural gas expansion. However, there may be legitimate disagreement among these stakeholders on the allocation of the costs and benefits of gas expansion. This proceeding presents an opportunity to consider and address each of these stakeholders' positions in crafting new policies and regulations that fairly promote gas growth.

3. Are there provisions of current policies or regulations that appropriately incentivize the expansion of the natural gas delivery system in New York State? Are these sufficient? If not, please suggest alternatives.

Response: The current main extension regulations provide three mechanisms for the recovery of capital costs related to gas expansion:

(1) Costs associated with mains and service entitlements are either recovered through new customer revenue or, if the costs exceed such revenue, are socialized across current customers through rate recovery;

(2) The LDC may provide additional (in excess of the entitlements) cost-justified main extensions; and

(3) The LDC may collect Contributions in Aid of Construction ("CIACs") from new customers to cover the cost of facilities in excess of entitlements.

National Grid is in the process of analyzing potential alternatives to the current regulations. Potential alternatives could include: (i) aggregating customer entitlements to enable neighborhood expansions; (ii) expanding the opportunities to cluster customers for purposes of cost-justifying facility extensions; (iii) updating the financial analysis in the main extension regulations (16 NYCRR §§230.1 - 230.6) to reflect current costs and construction processes (*e.g.*, whether the allowed size of main should be increased to include larger diameter plastic mains); (iv) changing the current surcharge/CIAC calculation to fully account for project costs (including system reinforcements); and (v) utilizing alternate recovery mechanisms for targeted main extension, system reinforcement and other capital investments in support of expansion of access to natural gas.

4. Identify current barriers inhibiting conversion to natural gas usage from other heating fuels - other than the cost of replacing heating equipment. Please explain how the barrier inhibits conversion and provide suggestions for reducing or eliminating the barrier – including the cost of replacing heating equipment.

<u>Response</u>: National Grid has identified the following barriers to gas growth:

Upfront Conversion Costs. The upfront customer equipment costs of conversions can be significant, normally ranging from \$4,500 - \$7,500 for residential and small commercial customers. These costs vary significantly with midsize and large commercial customers. Customers are frequently unwilling to make the upfront investments in new heating equipment, even when the payback period on these investments is relatively short (averaging five years based on current gas prices). This is especially true where customers are using inefficient, but otherwise functioning oil-fired heating equipment. To help customers manage the upfront costs of conversions (and enable the early retirement of inefficient heating equipment), this proceeding should explore options to assist customers with the up-front costs, including (i) on-bill financing for the customers' equipment costs; (ii) LDCs assisting customers in securing third-party sources of financing (which would be most effective at low or zero interest rates); (iii) offsetting finance charges for new equipment; (iv) LDCs securing alternate sources of funding for the loans (*e.g.*, NYSERDA); (iv) conversion rebates/incentives that are targeted and tailored to the economics of a project, and (v) bulk equipment buying programs administered by the LDCs to lower equipment costs.

Facilities Entitlements. The current facilities allowances in the Companies' tariffs enable expansion for some residential heating customers at zero cost to the customer. In National Grid's territories, however, the cost of running the entitlement portion of the main to connect new residential customers exceeds incremental revenues, so rate recovery for the Companies' capital costs to provide the facilities entitlement is necessary to support the economics of gas growth within the existing service territory. National Grid believes it is good public policy to provide entitlements even though some of the costs may be socialized because all customers benefit from the expansion of gas, including the economic development benefits, indirect environmental benefits associated with increased natural gas usage and the retirement of inefficient heating equipment, and enhanced security of supply realized from developing the gas system.

In cases where the entitlement is insufficient to connect customers (*i.e.*, a customer is more than 100 feet from a main), the customers' contribution to facility extension costs is a significant barrier to conversion. Possible solutions to this barrier include:

- Providing LDCs more flexibility to cluster customers by establishing criteria for neighborhood expansion tied to specific densities of new customers along the proposed main extension route to eliminate or reduce customer contributions; and

- Aggregating customer accounts at different locations to provide combined facilities entitlements and revenue analysis for the group of properties. This approach could be used in cases where a property owner is looking to convert multiple properties in the service territory (*i.e.*, school districts).

Qualified Personnel/Contractors. Given the current high level of construction activity in the Companies' service territories, the availability of qualified construction resources can be a barrier to completing conversions in a timely manner. Improved coordination between the LDC, customers and municipalities with regard to the timing of main extensions would help address this barrier by improving the ability to plan and resource work. More efficient resourcing can reduce project costs as well.

Chimney Liners. The need to install chimney liners under current building codes can add significantly to the costs of converting multifamily buildings with older masonry chimneys. Advances in liner technology may help to reduce these costs going forward.

Building Codes. Compliance with municipal building codes can be cost-prohibitive, especially where municipal codes require customers to bring their building into full compliance with all then-current building codes at the time of a conversion, even codes that are unrelated to the conversion. These compliance costs, which can vary significantly depending on the municipality, often materialize after the customer has committed to a conversion. Uniformity among municipal building codes would allow for more cost certainty for customers converting to natural gas.

5. Please identify the outreach and education efforts currently employed by the utility for the purposes of gauging interest in natural gas service and/or soliciting new customers in areas where interest in the possibility of obtaining service has been expressed. Are the efforts sufficient? How can they be improved? Would expanded or improved outreach and education programs increase conversion to natural gas by customers who reside within the 100 feet zone of existing utility infrastructure (and, accordingly would not pay for the extension)? How can the utility identify, communicate and engage with such customers? When an individual customer requests service, please describe the utility's efforts to communicate with or solicit other customers in the neighborhood/area.

Response: The Companies' outreach and education programs currently focus on targeted mailings to on-main or low-use gas customers. Mailings describing the potential savings from converting to gas are sent two to three times per year. Interested customers are referred to a National Grid lead center for follow-up and support, and are tracked in a sales management system. National Grid also works directly with trade allies, as well as through the major plumber and building councils, to disseminate information to potential customers on the benefits of natural gas. In addition, commercial sales representatives work with local business groups to promote gas usage.

Prospective customers that are not located near existing mains are not proactively solicited but any off-main customers expressing interest in converting are provided the same customer support services through National Grid's lead center. These customers are initially assessed to determine the nearest connection point to the gas system. A customer representative will discusses the CIAC policies with the customer and provide information on the potential connection costs.

In addition, in response to customer requests for gas service in unserved areas, the Companies will work with interested customers to analyze their neighborhood's potential for gas expansion. The Companies will send surveys to the homes along the proposed route to determine interest. These surveys are followed-up over a two week period and the interested customers are provided the results and estimated connection costs to determine if they are still interested in moving forward. This process can be improved using additional GIS tracking tools, increased outreach communications and more effective CIAC policies that encourage expansion.

6. Please identify the typical flow of communication and information between the utility and a customer requesting service that would require extension of a gas main sufficient to require a surcharge. Please provide any examples of written communication.

Response: The process will normally begin when a customer responds to an advertisement by calling the Lead Intake Center (1-877-MYNGRID). The customer request is first analyzed to determine the availability of gas and the nearest connection point. The customers are provided the approximate distance and a customer representative discusses the CIAC policies and potential connection costs.

7. What issues should be given consideration prior to expansion of the natural gas delivery system? Should such considerations include protections for a group or groups of customers? If so, what should be and what types of protections should be considered?

Response: The following issues should be considered prior to expansion of the gas system: (i) customer demand and the potential for growth; (ii) resource availability; (iii) the ability to leverage other gas work in the area; (iv) capital requirements; (v) incremental revenue; (vi) recovery of capital; (vii) environmental impacts, (viii) on-system and interstate pipeline system capabilities, (ix) access to liquid market supply points and (x) the impact on customer bills. Customer protection considerations should be dealt with in other forums focused on low income and protected customers.

8. Are there existing utility specific pilot programs focused on new approaches to line extensions or new franchise expansions of the natural gas delivery system? If so, please describe the pilot program. If not, could such a pilot program be beneficial and, how would it be designed?

Response: The Companies do not currently have any active pilot program related to main extensions or franchise expansions. However, an affiliate of the Companies in Rhode Island has filed for approval of a pilot program to establish a $3 million budget for pilot projects that meet specific expansion pilot criteria targeting expansion activity that would not otherwise occur in the natural course of business. In order to advance projects that meet these criteria, the company would partially off-set the customer contribution. If approved by the RI PUC, the $3 million budget will be included in surcharges paid for by all current firm customers. There could be benefits in implementing similar pilot programs in New York. Other pilot programs could be designed to test alternate cost recovery mechanisms (*e.g*., area surcharges) and sources of funding (*e.g*. municipal bonds and/or economic development funds) for expansion projects that would otherwise be considered uneconomic under traditional analysis. For main extensions, improvements such as alternative applications of the 100 foot entitlements and on-bill repayment could be piloted, or applied more broadly, depending on the desired acceleration of expansion of access to natural gas.

Rate and Ratepayer Considerations

9. The Commission's regulations (§230.2[f]) provide that "each corporation may, in its tariff schedules, extend such obligation [to provide certain main and service line extensions

without cost to the customer], to the extent the provision of additional facilities without charge is cost-justified." Identify whether the utility ever provides residential customers with more than 100 feet of gas main or service line without surcharge. Please explain why and under what circumstances or, if never, why not. Is the utility aware of any geographic areas in its service territory where potential cost justified extensions of greater than 100 feet are currently un-served? If not, has the utility ever attempted to ascertain or develop such information? What should be the appropriate length of main and/or service provided without surcharge? Please explain.

Response: National Grid does provide more than 100 feet of main and/or service to connect new residential heating customers when the added expense can be cost justified by the additional revenues. Generally, a nominal amount of additional main above the entitlement (not more than 13-14 feet) can be justified based on the incremental revenues derived from new residential customers.

As stated in response to Question 4 above, the Companies believe it is good public policy to provide facilities entitlements to new customers. National Grid does not recommend increasing the length of main entitlement beyond 100 feet. Rather, National Grid believes allowing for increased flexibility in the application of entitlements (*e.g.*, clustering), together with policies that ensure the timely recovery of prudent capital investments supporting gas growth, would encourage expansion.

10. Does the utility provide programs that could assist low income customers or those on a fixed income to overcome the barriers to conversion to natural gas?

Response: Not at this time.

11. Are there potential funding mechanisms for expansion of the natural gas delivery system other than through utility rates or direct customer payments (surcharges, CIACs or other)?

Response: There are several potential sources for alternate funding of gas expansion:

- Economic development funds could be used to offset conversion costs given the specific economic development benefits associated with gas expansion.
- Funds from environmental and efficiency programs (*e.g.*, Regional Greenhouse Gas Initiative) could be appropriate given the measurable environmental benefits associated with gas expansion.
- Other states are considering issuing bonds to fund expansion of the gas distribution system given the multiple public policy benefits of gas expansion.

12. Are existing natural gas efficiency programs adequate and optimal to serve the expansion of customers within 100 feet of existing utility infrastructure? If not, what changes, including possibly the level of funding, could be made to improve the existing efficiency programs? Would efficiency programs targeted to conversion customers result in increased energy savings, and if so, how?

Response: Existing natural gas energy efficiency programs support new conversions and existing gas-to-gas customers through customer rebates for the installation of high-efficiency equipment. In New York, there are approximately 8,985 high efficiency heating equipment (HEHE) participants annually. There is the potential, based on proposals to expand the program, to increase conversions in New York by 1,000-2,000 units/year through increased funding of energy efficiency programs.

National Grid currently provides information on efficiency programs to customers interested in converting. In KEDLI, KEDNY and NMPC's service territories, HEHE conversions account for approximately 60%, 40% and 5%, respectively, of new gas customers. As conversions increase there will be a corresponding increase in energy efficiency participants and savings.

13. Do Revenue Decoupling Mechanisms (RDMs) impact expansion of the natural gas delivery system?

Response: Revenue Decoupling Mechanisms may impact gas expansion, especially if larger customers are included in the RDM.   Under the Revenue Per Customer ("RPC") mechanism in the Companies' RDM, additional customers bring added revenue equal to the RPC target. If the customer provides revenue in excess of the target, the Companies return this excess to all customers through the RDM reconciliation process. From the Companies' perspective, a CIAC should be calculated based on the RPC target, the added revenue a company receives. From the new customer's perspective, if the customer's revenue is in excess of the target, the CIAC should be based on the customer's actual revenue.

This is not a significant issue for smaller residential customers who tend to be homogenous in terms of load size, since the RPC will be fairly representative of the revenues derived from most residential customers. However, larger customers tend to vary significantly in size and the target revenue may not be representative of an individual customer.   Including these customers in an RDM may discourage large customers from being added if the revenue target is used to calculate the CIAC rather than their actual revenue. However, including the customer's actual revenue rather than the target would be unfair to the company, as the company only retains the target.

An RDM that excludes new customers would keep the company and new customers better aligned with current regulations and expansion policies. CIACs would then be calculated based on actual revenue, which would be consistent with the revenue the company would retain. RDM targets would be calculated based on current customer numbers and revenue. The new customers would remain outside of the RDM until the next rate case, when they would be included as existing customers.

In addition, the company could be better incented to aggressively pursue potential incremental investments and revenue from existing customers if it is allowed to benefit from incremental revenue from current customers in RDM. A tracker on incremental investment made for existing customers and associated revenue would better incent the expansion of gas use.

Economic Development

14. Does the utility have any information or estimates concerning the existence of commercial or industrial customers who may add and/or retain jobs if they could switch their process or heating fuel to natural gas? If so, how many jobs might be added or retained?

Response: National Grid has explored opportunities to extend natural gas service within its Upstate New York franchise territory, particularly in unserved areas along transmission pipelines. As part of its analysis, National Grid identified certain schools, health care providers, manufacturers and other businesses that may benefit from switching their process or heating fuel to natural gas. However, National Grid does not have any estimates on how many jobs these individual customers might add or retain if they were to take advantage of natural gas availability.

15. Are there specific industries in the State that would benefit from an expanded natural gas delivery system? Please describe.

Response: National Grid conducted an economic impact analysis of its Upstate New York gas expansion study, which looked at expanding gas service to 232,912 potential new customers in 177 cities and towns. The table below shows the New York industries expected to benefit the most, in terms of jobs created, from natural gas expansion. The impact analysis considered fuel cost savings to businesses, consumers and municipalities; and reduced emissions through the substitution of natural gas for fuel oil. Construction cost of the pipeline and cost recovery were not included in the impact analysis.

Within the private sector, the greatest number of jobs would likely be created in the retail trade industry, already the largest private employment sector in the State. A large number of firms would be able to take advantage of an expanded natural gas delivery system, lowering their energy costs and making them more competitive. This would enable retail trade firms to sell more goods and services, and hire more workers. At the same time, expanding gas service to residential customers would boost their purchasing power, increasing the local demand for the goods and services produced in retail trade, leading to even more retail job growth.

Other specific industries that would benefit from an expanded natural gas delivery system include hospitals and health services, schools, colleges, government and private offices. Like retail trade, these industries would expand because of their own fuel costs savings and from increased local demand for their services, resulting from the higher purchasing power of local residents switching to gas.

Local government employment would expand the most in order to meet the needs of the growing local economy and expanded population. Regional population would rise because of the increase in local employment, output and income; and because of the reduction in local emissions, which would make the area a more desirable place to live.

Within manufacturing, energy-intensive manufacturers would benefit the most from natural gas expansion. Such industries include chemicals, plastics, paper and paper products, warehousing and storage. Increased gas availability would not only lower these firms' energy costs but also draw more firms to the State from outside the region.

Upstate New York Gas Expansion Study

Employment Impact by Industry

	Jobs Created
Local Government	259
Retail Trade	250
Ambulatory health care services	225
Accommodation and Food Services	217
Construction	133
Other Services, except Public Administration	126
Professional and Technical Services	115
State Government	114
Real Estate and Rental and Leasing	88
Educational Services	85
Nursing and residential care facilities	85
Administrative and Waste Services	81
Hospitals	79
Arts, Entertainment, and Recreation	50
Wholesale Trade	46
Farm	39
Finance and Insurance	35
Manufacturing	33
Social assistance	31
Federal Government	24
Transportation and Warehousing	19
Management of Companies and Enterprises	15
Information	14
Utilities	4
Forestry, Fishing, Related Activities, and Other	1
Mining	1
Total	2,170

Public/Private Partnerships

16. Are there potential partnerships between various entities involved in the energy and heating markets in New York State that could facilitate expansion of the natural gas delivery system? If so, please provide examples and whether your organization would be willing to take part in such a partnership. Who would be best suited for encouraging and developing such partnerships? What role should the public sector play?

Response: There are likely many potential partnerships and National Grid would be open to exploring them. Potential partners for collaboration include independent power producers considering or planning to repower their plants with natural gas and pipeline companies considering serving them or other customers. The routing of new pipelines could provide opportunities for gas distribution expansion (and potential system reliability benefits as well). In order to get as complete a picture as possible and achieve optimal pipeline development, the public sector should play an important role in bringing these potential partners together.

17. Are there programs currently administered by utilities or federal, state or local agencies that assist customers with heating fuel conversions? Are there roles that other agencies, such as the New York State Energy Research and Development Authority (NYSERDA), should play in expansion of the natural gas delivery system? Should the Energy Efficiency Portfolio Standard (EEPS) programs be expanded or modified to encourage conversions to natural gas before end-of-life replacements?

Response: There are governmental programs encouraging gas expansion:

- The Clean Heat program in the City of New York for large buildings burning #4/6 oil and the oil tank removal program in Nassau County on Long Island, provide incentives and some assistance for heating fuel conversions.

- In the energy efficiency area, the Energy Efficiency Portfolio Standard (EEPS) programs are already a great asset for assisting customers in upgrading their heating system efficiency for conversions from gas to oil. The programs offset the incremental costs associated with the higher efficiency equipment. The Companies believe that more customers would use high efficiency equipment if the incentive through EEPS was higher than the incremental cost of installing high efficiency equipment.

In terms of new programs, NYSERDA could play a significant role in encouraging conversion if they were work with LDCs to provide funding for On Bill Repayment. As noted above, one of the most significant barriers for customers to convert to gas and/or upgrade to high efficiency before life end replacement is the upfront costs.

18. Are there opportunities to coordinate natural gas delivery system expansion projects with other available resources, such as economic development, energy efficiency, or environmental protection? Please provide specific examples, if possible.

Response: There are opportunities to coordinate natural gas delivery expansion projects with other resources. Construction of gas pipeline, services and conversions creates economic activity and, therefore, value to local communities. There is a broader economic boost regionally by increased capital activity. Accordingly, the use of economic development funds to offset the cost of gas system expansion projects can be justified based on the economic benefits associated with gas growth. In addition, as outlined in the response to Question 15 above, there is economic value to industries in the state that would benefit from an expanded natural gas delivery system.

Environmental Impact

19. Are there changes that could be made to the environmental impact review process involved in granting or expanding gas franchise areas that could improve or streamline the process?

Response: One challenge encountered in the environmental review process is the need to interact with multiple jurisdictions to seek the necessary permitting and approvals. In cases where an expansion crosses jurisdictional boundaries, there needs to be coordination among multiple conservation commissions, requiring LDCs to expend considerable effort and cost. Each of these entities may have their own local regulations and interpretations of environmental law. This has proven to be a burden on individual projects and may be magnified in larger scale expansion programs.

20. Please identify, if any, areas of the State where provision of natural gas delivery service is unrealistic because of environmental constraints, construction permitting requirements or other factors and explain why service to such areas is believed to be unrealistic. Are there any areas of the State that require special consideration regarding expansion of the natural gas system?

Response: In consideration for construction/road opening permitting, there are increasingly more stipulations imposed by the local municipalities with regard to underground construction activities. As a result, permitting costs have risen, work hour restrictions have increased (primarily due to traffic management concerns), and additional trench restoration requirements (*i.e.*, curb to curb street resurfacing, grind and inlay, infrared) continue to be imposed. All of the above drive cost and/or reduce productivity for each project.

In National Grid's service territories, areas posing specific challenges are the Pine Barrens Region in central and eastern Suffolk County on Long Island and The Adirondack Park in the Upstate New York service area.

The Pine Barrens Region has been designated as a no/limited growth area, ostensibly to protect groundwater resources. In practice, the regulations are often utilized to minimize development even when no groundwater issues are present. There are provisions for a Hardship Waiver, and National Grid has been successful in receiving them, albeit with route changes and modifications to construction methods. .

The Adirondack Park in the Upstate service area poses challenges for growth and expansion opportunities due to numerous environmental resource constraints and associated permitting requirements of the Adirondack Park Agency (APA) and NYSDEC.

Planning

21. Please explain your utility's natural gas delivery system expansion planning process including any large-scale and or long-term plans that are in place or are being considered.

Response: National Grid's Gas System Planning Group annually performs an analysis of the distribution system to determine reinforcement projects and associated costs that need to be constructed over the following five years to support forecasted customer growth. Reinforcement projects are designed to maintain minimum design pressures throughout the distribution system under peak-hour conditions. This 5-Year Plan is issued annually so that it can be adjusted for changes to the gas sendout forecast, differences between actual load growth and estimated load growth, reinforcement project deferrals, public works activity, main replacement program activity, sales and operations supported growth reinforcements, and updates/improvements to the Companies' models. In addition to reinforcement projects designed to support forecasted customer growth, Gas System Planning also identifies system reliability projects. In general, these projects improve the overall reliability of the distribution system, often by providing additional system capacity or through improvements to system integration.

Growth is determined by the company forecast and is spread out on the model by factors or percentages based on either historical growth patterns or current market analysis. This year, National Grid commissioned a market analysis to determine the future growth of the system by zip codes aggregated into approximately sixty zones. Planning was able to use this data to allocate the forecasted load by percentages throughout the zones. This method allows for the fine tuning of applying the loads into the model.

Identifying system expansion projects to un-served or under served areas is challenging. This past year, Gas System Planning hired an outside engineering consultant to review areas that were under served in our Upstate NY service territory as well as unserved areas adjacent to our existing service territory to determine if it was feasible and economical to expand in those areas. One of the key goals was to find a large anchor tenant which would have sufficient load to justify expansion of the existing system and then determine the appropriate route focusing on the highest concentration of customers with the ability to convert to natural gas. This is an ongoing project which is in the cost analysis stage.