



**National Fuel**

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Christopher M. Trejchel  
*Senior Attorney*

January 24, 2005

James J. McNulty, Secretary  
PA Public Utility Commission  
P.O. Box 3265  
Harrisburg, PA 17105-3265

**COPY**

Re: Proposed Rulemaking Regarding Small Generation  
Interconnection Standards and Procedures  
No. L-00040168

Dear Secretary McNulty:

Enclosed for filing is an original and 15 copies of National Fuel Gas Distribution Corporation's comments in the above-referenced matter.

Please feel free to contact me should you have any questions.

Very truly yours,

Christopher M. Trejchel

CMT/cjc

Enclosures

BEFORE THE  
PENNSYLVANIA PUBLIC UTILITY COMMISSION

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Proposed Rulemaking Regarding Small : Comments  
Generation Interconnection Standards :  
and Procedures : No. L-00040168

SECRETARY'S BUREAU

**Comments of National Fuel Gas Distribution Corporation**

In accordance with the Advanced Notice of Proposed Rulemaking Order published by the Pennsylvania Public Utility Commission (the "Commission") in the Pennsylvania Bulletin on December 3, 2004, National Fuel Gas Distribution Corporation ("National Fuel") submits the following comments to the Commission regarding small generator interconnection standards and procedures.

**SUPPORT OF INTERCONNECTION STANDARDS**

National Fuel supports the Commission in establishing uniform rules on the interconnection of small power generators to the electric distribution grid. We concur that the lack of interconnection standards can inhibit attractive distributed generation projects because of uncertain requirements. Clear and accessible interconnection standards can encourage innovation and creativity by applying state-of-the-art solutions to electric generation, transmission and distribution challenges.

Distributed generation can play an important role in insuring economical, safe, reliable and stable operation of the electric grid while resulting in higher overall energy efficiencies.

While avoiding restating background on the evolution of the grid based upon electricity distribution from large central generation plants, technological advances in distributed generation equipment, and the benefits/challenges offered by electric deregulation, National Fuel offers these comments on our involvement with distributed generation projects.

**NATIONAL FUEL INVOLVEMENT WITH DISTRIBUTED GENERATION MARKET**

As a natural gas-only utility serving customers in both the State of New York and the Commonwealth of Pennsylvania, we are interested in the development of natural gas distributed generation projects in our service areas. National Fuel has over twenty distributed generation installations in New York providing in excess of 15,000 kilowatts of electric power on the customer side of the electric meters. The installations are generally under 800 kW in size. The mix of technologies in these "inside-the-fence" installations include: gas engines, microturbines, fuel cells and steam turbines. These installations are connected to low voltage grid systems primarily to secure back-up power from the utility without exporting power to the grid.

The interest in these customer-controlled systems is two-fold: first, the customers benefit from displacing electricity at their higher incremental cost, and not based upon the credit of the merchant price to the grid. Second, being able to displace fuel or electricity purchases by using

available waste heat from distributed generation for heating or absorption cooling enhances economics and energy efficiency. Electric demand shifting through such technologies as ice storage can provide further benefits.

There are a number of additional installations in our territory operating in isolation of the grid without any interconnections. These sites do not include the generating facilities in our territory providing merchant power to the grid.

## NATIONAL FUEL ROLE IN DISTRIBUTED GENERATION PROJECT DEVELOPMENT

National Fuel conducts screenings and feasibility analyses as part of our promotional efforts to develop the distributed generation market. Our awareness programs provide information to customers on the nature, benefits and issues of distributed generation. Once customers decide to proceed with project development, we provide advice and support on technical, business and regulatory issues, as appropriate, with the goal of securing successful projects. Other than our interests in seeking gas load revenues and improved system load factors to benefit our stockholders and ratepayers, National Fuel generally does not take financial interests in the projects. We may, however, assist the customer in applying for incentive funding from utility programs, from economic development programs, or elsewhere. Project development and administration are conducted by the customer.

National Fuel has been active in supporting the development of interconnection standards and regulations in New York. Proposed projects in New York had experienced significant difficulties because of the previous lack of sufficient standards. Many of those projects began prior to the adoption of the original interconnection standards in New York in 1999. Those standards, which were modified in 2002, and expanded in 2004 provided clearer definitions of procedures and responsibilities for all parties.

We wish to focus on issues in developing distributed generation projects installed on the customer side of the electric meter. Before, during and after the development of standards, our customers have experienced various obstacles that sometimes resulted in project delays.

## NREL REPORT ON BARRIERS TO DG

The National Renewable Energy Laboratory ("NREL") of the United States Department of Energy issued a report in May 2000 titled "Making Connections: Case Studies of Interconnection Barriers and their Impact on Distributed Power Projects," report number NREL/SR-200-28053. This report documents a range of barriers experienced throughout the country by those attempting to implement distributed generation projects. National Fuel is aware that our customers are experiencing a number of the barriers described in the report. The NREL report classifies barriers into Technical Barriers, Business-practice Barriers and Regulatory Barriers. A comprehensive interconnection standard addressing these issues should ease many of the difficulties in developing a successful project.

## COMMENTS ON BARRIERS EXPERIENCED BY NATIONAL FUEL NY CUSTOMERS

In support of our customers' applications for interconnection of distributed generation systems, each of the NREL barriers have been experienced in working with the host electric utilities. One of the major issues which cuts across all of the NREL barriers is the "institutional" issue with the utilities. There had been a lack of delineation on who has the authority and who becomes responsible for making decisions on distributed generation matters. Many of those topics cut across disciplines within the utilities to include technical, legal, regulatory, executive, and environmental issues. Accommodation of electric generation distributed throughout the grid poses a major shift in practice by most utilities over the current model of distributing electricity from large central generating stations. Deficiencies in the grid had been addressed by the utilities, and were generally corrected with electric lines and transformers. Reacting to proposed distributed generation installations upsets this approach. There is an apparent institutional desire to maintain the status quo. For those individuals assuming responsibility within the utilities, there seems to be little reward and a possible downside to career potentials. The institutional issues should be addressed to encourage distributed generation by assigning authority and responsibility, and rewarding performance.

### A. Technical Barriers

The Institute of Electrical and Electronics Engineers ("IEEE") Standard for Interconnecting Distributed Generation Resources with Electric Power Systems is a useful technical standard that has been adopted as part of the New York standards. It provides minimum technical requirements universally needed for distributed generation interconnection for performance, operation, testing, safety and maintenance. It does not address broader issues affecting distributed generation such as application process, time limits, costs of studies and additional equipment, schedules, justifications of requirements or explanations of results.

In regard to control settings of interconnection switchgear, it is necessary to insure the establishment of standards for protection of the safety, stability and reliability of the electric grid. There have been instances among our customers where specified control setpoints have disrupted operations of distributed generation equipment because of the inability of the local electric grid to meet the quality standards. In those cases, the distributed generation system is normally shut down and all electricity is received through the utility meter. Implied within the setpoint requirements is that the distributed generation equipment causes grid disruptions. This may be far from reality. Provisions should be made when continuing distributed generation operation during grid variations pose no problem to the grid. In those cases, protection of the distributed generation equipment should be the primary consideration.

Customers are generally more motivated and likely to install distributed generation in problem areas of the grid. When this grid quality causes control trips and detrimentally influences the ability of the distributed generation system to operate in parallel, project viability may suffer. This condition can be used by those opposing distributed generation interests to discourage future installations. Consideration should be given to the technical standards to address possible misuse of setpoints to affect projects.

For those inside-the-fence distributed generation installations, which may be operated during grid outages, the standards must allow the system to remain in operation, if desired, with suitable switchgear and controls to isolate itself from the grid disruptions.

The IEE standard for interconnection can be an important technical component of the overall Pennsylvania standards. It should not be its exclusive standard. To provide for more comprehensive technical standards, Pennsylvania should adopt standardized testing protocol such as that from Underwriters Laboratory UL-1741, and publish an official list of certified equipment meeting all appropriate standards. The equipment should be considered to be pre-approved and acceptable for use in distributed generation systems.

#### B. Business-practice Barriers

The most noteworthy example of business-practice barriers was the imposition of unlimited liabilities on damages to the grid caused by the distributed generation equipment. This points out a critical issue about the assumption of liabilities. Obviously, this could have a severe dampening effect on the distributed generation market. National Fuel has no specific suggestions other than highlighting another critical issue.

#### C. Regulatory Barriers

As previously mentioned, adoption of comprehensive interconnection standards, a standardized certification protocol for distributed generation equipment and a listing of certified equipment should reduce the uncertainties in developing distributed generation projects.

The standards should include incentives for encouraging the development distributed generation systems that benefit the public. Examples may include the use of alternative energy sources such as renewables, and electricity produced from environmentally beneficial sources. Natural gas technologies such as fuel cells and internal combustion engines can meet very high energy efficiency levels when waste heat may be captured and used to displace additional fuel purchases. In addition, state-of-the-art gas engines can produce very low levels of emissions when measured on a per unit output basis of pounds per kilowatt-hour. Gas technologies can provide electricity and thermal energy at substantially greater energy efficiencies than that received from the grid produced by other fossil fuels. Furthermore, it can be done with substantial reductions in emissions.

In regard to the interconnection standards, provisions for net metering of projects involving Homeland Security, other public safety issues, or other projects of greater good should be implemented.

In regard to a broader range of regulatory issues, the adoption of distributed generation friendly electric standby rate tariffs and regulations is necessary. The rates should reflect legitimate recoveries of stranded costs through transition charges and not reflect punitive tariffs to discourage distributed generation.

The New York Public Service Commission added a regulatory provision requiring electric utilities to examine their grid and issue Requests for Proposals for distributed generation to provide solutions. This would be contrasted against conventional wires and transformer solutions. The concept appears solid but the implementation is not working well, presumably because of the institutional issues previously mentioned.

#### COMMENTS ON OTHER INTERCONNECTION MODELS

National Fuel supports the model established by New York in its interconnection standards. In addition to the technical standards, New York established responsibilities for the parties in its application procedures, it described the scope of and need for studies, schedules and costs. It also established a system for certifying and approving distributed generation equipment.

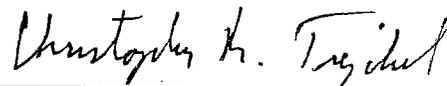
In regard to the Federal Energy Regulatory Commission ("FERC") interconnection proceedings, there are attempts to incorporate very broad national issues into their document that may not be pertinent in Pennsylvania. Monitoring the development of that document should continue, as broad provisions incorporated into FERC's document may prove useful in Pennsylvania. The FERC's intent to provide a consensus document may prove to be cumbersome when compared with Pennsylvania's focus on our interconnection needs. Over the longer term, development of standards by other states or regions reflecting some of their approaches to resolving issues can be incorporated into an evolving interconnection standard for Pennsylvania. This is clearly the case in New York State where the third standard has been adopted since 1999.

#### SUGGESTED DIRECTION FOR THE COMMISSION

National Fuel agrees that standards addressing generators up to 2 MW is appropriate for our markets of interest. A broader range would be beneficial to accommodate some of the larger systems located on the customer side of the electric meter. Larger systems operating in parallel with the electric grid may allow excess capacity to be exported to support grid needs, especially during peak utility electric demand periods. This is an area where our New York territory is not fully taking advantage of generation assets that may be available for the greater good.

WHEREFORE, National Fuel Gas Distribution Corporation respectfully submits these Comments and requests the Commission's careful consideration of the matters addressed herein.

Respectfully submitted,



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Distribution Corporation

Date: January 25, 2005