

DRAFT

Scope of Work **Adequacy of Natural Gas Resources for Electric Generation**

Objective 1: Obtain a better understanding of the interstate and local gas pipeline infrastructure needed to reliably deliver gas for power generation in the short and long term (2005 and 2010 respectively).

- A. Determine adequacy of pipeline capacity upstream of a city-gate considering regional competition for available pipeline capacity.
 - 1) Assess LDCs' and generators' annual and seasonal peak demands and associated supply needs over the near term and long term.
 - 2) Prepare a "load and capacity" assessment of pipeline needs.
- B. Determine if the current local gas infrastructure downstream of the city gate is adequate to meet current and future generation requirements or if infrastructure additions are necessary.
 - 1) Assess the adequacy and reliability of the current LDC distribution infrastructure.
 - 2) Determine how specific changes (reasonably foreseeable) in the generation market will impact the adequacy of the local gas infrastructure.
 - 3) If infrastructure enhancements are needed determine how they could be funded.
- C. Determine the ability of the natural gas industry to respond to major upsets (gas-side contingencies) in the delivery of natural gas to power plants.
 - 1) Analyze the transient response of the natural gas delivery infrastructure to postulated contingency events that interrupt the normal flow of gas to power plants
 - 2) Identify reasonably conceivable worst-case conditions on both the gas and electric systems for each contingent event such that the gas delivery system is most sensitive to the postulated event.
 - 3) Examine the loss of any single gas pipeline, both upstream and downstream of the city gate, and determine the impact on the electric system generation including whether the electric system will be able to successfully withstand these contingencies and continue to operate reliably without any loss of load.
 - 4) Examine existing reliability criteria to determine if they are sufficient to ensure system reliability during gas contingencies and develop proposed solutions, if necessary.

Objective 2: Obtain a better understanding of generators' contracting arrangements for interstate, local transportation and gas supply delivery arrangements.

- A. Determine generators' current and future (a) gas load quantity (e.g., maximum daily quantity); (b) quality of transportation service (e.g., firm, off-peak firm or interruptible); and (c) ability to access new interstate pipeline receipt points that may be connected to the gas systems in NYS.
- B. Determine if there is an appropriate amount of primary firm pipeline transportation capacity that should be incorporated into generators' fuel portfolio plans, in relationship to a unit's maximum gas burning capability, to ensure operating reliability for (a) dual-fueled units, and (b) single fuel units, that are being committed into the Day Ahead Market (DAM) as available Electric Capacity.
- C. Examine the relationship between New York electricity market design and the ability to recover various costs related to gas procurement.
- D. Determine what additional assets (e.g., pipeline capacity and/or storage) are required in order to provide appropriate amount of primary firm service (from item B. above) to generators.
- E. Determine how specific changes in generation load will impact the level of firm pipeline transportation capacity needed to reliably serve generation load and the array of penalties and other tariff limitations requiring generators to resolve daily or hourly imbalances.

Objective 3: Obtain a better understanding of the oil infrastructure used to supply dual fuel generators, and of the interrelationship between the natural gas systems and oil delivery systems.

- A. Define and characterize the interrelationships and dependencies between natural gas and petroleum products as competing and substitute commodities and assess the economics of either being a preferred alternative.
 - 1) Gather data on dual-fuel capability of generators and interruptible natural gas customers.
 - 2) Gather data on oil industry storage capability and firm customer demands by fuel type.
 - 3) Gather data on environmental regulations/limitations on oil use (including permit limitations) for generators and non-firm natural gas customers.
 - 4) Gather information on on-site alternate fuel storage capacity including:
 - a) Length of time backup fuel will last before on-site inventories are depleted without re-supply.
 - b) Traditional steps used to secure re-supply of backup fuel practiced by generators and interruptible natural gas customers.
 - c) The success, or lack of success, generation customers have had in securing backup fuel during an interruption of gas service.