



# Appendix F

## Scope of Work

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# Luyster Creek Energy Project at the Astoria Generating Station

## Final Scope of Work for Draft Environmental Impact Statement November 10, 2010

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### **1.0 INTRODUCTION**

The Astoria Generating Company (AGC) plans to add additional generating capacity to its Astoria Generating Station (AGS) while reducing environmental impacts. The existing AGS units are located on approximately 17 acres at 18-01 20<sup>th</sup> Avenue in Astoria, Queens New York. They consist of three dual fueled (natural gas and No.6 oil) units, one natural gas unit, and a small combustion turbine with a total capacity of approximately 1,300 megawatts (MW). The location of the Luyster Creek Energy Project (LCEP, or the Project) will be at the AGS Fuel Oil Tank Farm (FOTF) on a parcel of approximately 12 acres that is approximately 2,400 feet to the northeast of the existing units. These parcels are connected by utilities and easements and have been determined to be contiguous/adjacent for air permitting purposes by the New York State Department of Environmental Conservation (NYSDEC). A new combined cycle unit is proposed to be installed at the FOTF and occupy approximately 7.5 acres on this parcel. The capacity of the new unit will be between approximately 300MW to 410MW at ISO conditions depending on the final unit selected. A new above ground fuel oil tank would also be constructed at the FOTF for the storage of ultra low sulfur diesel. Currently there is approximately 8 million gallons of No. 6 oil storage at the FOTF in four tanks for the existing boilers at the AGS. Those tanks will remain in service. Fuel is currently delivered by barge to the tanks from the adjacent A-10 dock and will be delivered from the same dock to the new tank. Figure 1 shows the location of the AGS and LCEP.

The existing AGS units are utilized to meet electric demand and maintain the electric grid stability within New York, New York (the City). The new LCEP will cause the older AGS units, as well as other less efficient plants in the City, to run less while allowing the newer, cleaner units to meet the continually growing electric demand within the City.

AGC believes that a coordinated improvement of the AGS by the addition of new cleaner technology is the most beneficial way to plan for the increasing load requirements of the City and the eventual retirement of older generating units, while reducing the environmental impacts of the existing units and other displaced facilities. The LCEP will also advance, and is consistent with, the goals set forth in the Draft State Energy Plan with respect to assuring system reliability, replacement of older capacity, greenhouse gas reductions, reduced electric costs and environmental improvements. New York City's plaNYC will also be reviewed in order to provide an evaluation of the Energy Initiatives contained in the plan. In particular, the LCEP will be evaluated with respect to Energy Initiative No. 8, "Facilitate Repowering and construction of Power Plants."

AGC evaluated several improvement opportunities including enhancing or replacing the existing equipment to achieve the goals of increased capacity with decreased environmental effects. In fact, a repowering of the existing facility was permitted under the Article X process in 2003. When AGC was acquired by its current owner USPower Generating Company, a technical and commercial review of the approved repowering project and determined that it was not economic to build that project as proposed by the previous owners. AGC then commissioned an engineering firm to evaluate the feasibility of

locating additional capacity close by the existing AGS units in a systematic phased approach to eliminate the features that made the approved project infeasible. Potential areas for new equipment were identified. Layouts of the maximum capacity that could fit on the locations were determined. The primary items that were to be optimized in a modified project were the avoidance of potential aquatic impacts, reduction of interference with existing operations, and minimization of other environmental concerns such as visual impact and water use. Ultimately, however, it was determined that a modified project at the location of the existing AGS units could not avoid interfering with existing utility infrastructure and would still require significant remediation and demolition before the new equipment could be installed. During demolition and construction activities, the existing AGS units would have to be taken off line for substantial periods, with the resultant loss of revenue. In addition, if the modified project was a significant enough departure from the approved project the agencies indicated that a new permitting process would have to be started. These conditions resulted in the inability to develop an economic project in the same footprint that was approved for the original repowering project.

Once it was clear that an economic option was not viable at the location of the existing AGS units, AGC looked more broadly to determine if a project could be developed in another location that avoided the fundamental issues that were detrimental to development at the original location. That led to the contiguous/adjacent FOTF parcel. This site is currently in use for oil storage and houses several retired above ground storage tanks. Use of this site for the LCEP avoids removal of existing generation during the construction period and reduces the demolition and remediation costs compared to the original concepts.

As a result of the AGC evaluation, the following Project parameters have been determined:

1. The optimum location for new generation is the FOTF parcel northeast of the existing AGS units.
2. Use of a Siemens H class, Mitsubishi 501G, or GE Frame 7FA combustion turbine in a 1x1 configuration. The final determination of the unit will be made based on market conditions. The LCEP will also be equipped with an air cooled condenser and the lowest stack height possible to achieve ambient air quality standards while balancing impacts due to downwash effects and aesthetics as discussed in NYSDEC's air quality policy DAR-10.

The Draft Scope of Work has been prepared under the review of NYSDEC. It identifies and describes the range of environmental studies to be conducted to evaluate the potential environmental impacts of the proposed Project. This document is being distributed by the NYSDEC, as the New York's State Environmental Quality Review Act (SEQRA) lead agency, to the public and to all interested and involved agencies for review and comment. After consideration of public and agency comments, the NYSDEC will issue a Final Scope of Work for the Draft Environmental Impact Statement (DEIS).

Copies of this Draft Scope of Work can be viewed at the following locations:

Queens Community Board 1  
36-01 35<sup>th</sup> Avenue, Astoria, NY 11106  
Phone: 718-786-3335  
Fax: 718-786-3368  
Email: qn01@cb.nyc.gov

Queens Borough Public Library  
89-11 Merrick Boulevard, Jamaica, NY 11432

Queens Borough Branch Library Astoria Branch  
14-01 Astoria Boulevard, Long Island City, NY 11101

NYSDEC Region 2 Office  
47-40 21st Street, Long Island City, NY 11101

This Draft Scope of Work can be viewed and downloaded from the LCEP website ([www.USPowerGen.com](http://www.USPowerGen.com)). The Draft Scope of work can also be viewed and downloaded from the NYSDEC website (<http://www.dec.ny.gov/permits/6061.html>). In addition to receiving oral comments at the public meeting, written comments may be submitted in accordance with the public notice.

Mr. Stephen Tomasik is NYSDEC's project manager and primary contact regarding this document. Comments and questions pertaining to the LCEP may be emailed through the LCEP website ([www.USPowerGen.com](http://www.USPowerGen.com)) or submitted to Mr. Tomasik and copied to the contact person for the project identified below.

The NYSDEC project manager is:

Mr. Stephen Tomasik  
Project Manager  
Energy Projects and Management  
Division of Environmental Permits  
New York State Department of Environmental Conservation  
625 Broadway, 4<sup>th</sup> Floor  
Albany, New York 12233-1750  
Phone: 518-486-9955  
Email: [smtomasi@gw.dec.state.ny.us](mailto:smtomasi@gw.dec.state.ny.us)

The contact person for the project is:

David Perri  
Astoria Generating Company, L.P. (a USPowerGen Company)  
505 Fifth Ave, 21st Floor, New York, NY 10017  
Phone: 1-888-398-USPG (1-888-398-8774)

## **2.0 DESCRIPTION OF PROPOSED PROJECT**

The New York State Reliability Council requires that 80% of the capacity requirement in the City of New York or Zone J, be supplied by units dedicated to supplying Zone J for system reliability. The existing AGS units are older, less efficient units that are generally used for reliability and high load days. Displacement of operation of older units in the City, including the AGS units, with new higher efficiency units will provide a tremendous environmental benefit. In addition to the environmental benefit, the cost of production of electricity would be reduced due to the higher efficiency of the new unit. Load profiles and existing capacity resources in the City require that the City have quick start and intermediate load generation capability to meet demand. The LCEP will be designed to start up and shut down quickly and have greater operational flexibility than the standard combined cycle facilities currently installed in the

City. This flexibility will reduce emissions during startup and allow the LCEP to be shut down if there are more economical sources rather than operate during uneconomic periods.

The LCEP consists of two distinct components: the installation of a new combined cycle combustion turbine unit of approximately 300MW to 410MW at ISO conditions depending on the final unit selected and an emissions reduction strategy for the existing AGS. The improvement will be built on the FOTF parcel at the AGS within an area zoned for heavy manufacturing (industrial) use (M3-1). The new combustion turbine will be dual fuel-capable and burn natural gas as a primary fuel and ultra low sulfur diesel as backup fuel to be used for up to approximately 30 days annually which will require the addition of a new oil storage tank.

The new unit is planned to be operational to meet the anticipated need for capacity in 2014. To facilitate the emissions netting strategy, the potential emissions from this unit will be offset by the shutdown of existing Unit 2 and an enforceable permit limitations or shutdown of the remaining units (3, 4, and/or 5). The shutdown(s) or permit limitations would be effective upon commercial operation of the new unit. Shutdown for purposes of the LCEP would be as defined in the current NOx RACT rule<sup>1</sup> (6 NYCRR 227-2.2). The DEIS will fully describe the means that will be used to demonstrate compliance with the definition. The DEIS will also discuss the budgetary cost of removal of the shutdown unit.

The DEIS will summarize the reductions from the existing units plus the potential emissions from the new unit. The result will demonstrate compliance with all regulatory requirements and specifically identify any emissions that are potentially increased. The DEIS will quantify the size of the new unit and the relative increase in capacity of the total facility after the shutdown of Unit 2 and any other shutdown/curtailment of operations from other units that may be considered as part of this project.

All of Queens County, New York, including the AGS, is located in a nonattainment area for ozone (O<sub>3</sub>) and particulate matter less than 2.5 microns in diameter (PM<sub>2.5</sub>). The United States Environmental Protection Agency defines nonattainment areas as regions in which air pollution levels persistently exceed National Ambient Air Quality Standards. The LCEP will not trigger review under Prevention of Significant Deterioration or Nonattainment New Source Review regulations because AGC will commit to enforceable permit restrictions that limit new emissions to levels below significant increase thresholds.

Benefits of the Project are that it will provide additional cleaner electric generation while reducing the emissions for virtually all criteria pollutants with only de minimis increases (below significance thresholds) for those few pollutants for which emissions may not be reduced completely. Potential emissions resulting from the additional generating capacity will be offset by implementing the strategies described below. These actions will fully address community concerns and ensure that total air emissions will be reduced by a combination of methods that may include but are not limited to:

1. Use high efficiency, low emission combined cycle combustion turbines for the Project.
2. Permit caps on the total emissions from the new combined cycle equipment.

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<sup>1</sup> Shutdown - "The permanent removal from service of an emission source as evidenced by either a permit condition or provision prohibiting the emission source from further operation, the surrender of the emission source's permit, or the complete deletion of mention of the emission source from the permit of the major facility of which it had formerly been a part with no authorization for operation of the emission source appearing in any other permit."

3. Permit caps on the total emissions from the existing AGS units.
4. Shut down/retirement of existing units.
5. Permit cap on sulfur content of the oil for the Project.
6. The new combined cycle unit will employ air cooling and therefore there will be no air emissions from the cooling system as in the case of wet cooling towers.

In the event that one or more units are retired, the DEIS will identify the status that the unit will be left in for compliance with that requirement.

LCEP will be electrically interconnecting into the grid via existing connections from the current units. As such, the new unit interconnection should be easily achievable.

AGC will prepare and submit a DEIS in order to fully address potential community concerns, including environmental justice issues. The DEIS will also include an alternatives analysis.

### **3.0 SUMMARY OF ANTICIPATED APPROVALS AND INVOLVED AND INTERESTED AGENCIES**

Development and operation of the LCEP may require or involve the following discretionary federal, state, and local regulatory agency notifications, actions, permits and approvals. The list will be confirmed in the DEIS.

- NYSDEC: NYS Environmental Quality Review Act (SEQRA) (6 NYCRR 617)
- NYSDEC Title V Permit Modification (6 NYCRR 201-6)
- State Facility Air Permit (6 NYCRR 201-5)
- Acid Rain Permit (Title IV) 6 (NYCRR 201-6)
- SPDES Permit Modification (6 NYCRR 750)
- SPDES General Permit for Stormwater Discharge from Construction Activity (including SWPPP) (GP-10-01)
- NYCDEP Certificate of Operation (15 RCNY Chapter 2)
- Proposed CO<sub>2</sub> Budget Permit (6 NYCRR 242-3) (New York State component of the Regional Greenhouse Gas Initiative)
- Clean Air Interstate Rule (CAIR) NO<sub>x</sub> Annual Trading Permit (6 NYCRR 244-3) and CAIR SO<sub>2</sub> Trading Permit (6 NYCRR 245-3)
- Updated Spill Prevention Control and Countermeasure Plan (SPCC) (40 CFR 112 and 6 NYCRR 612-614)
- NYCDEP Certificate of Operation (15 RCNY Chapter 2)
- NYCDEP Triennial Air Certificate revision (NYC Administrative Code, Title 24 Air Pollution Control)
- NYS Chemical Bulk Storage (NH<sub>3</sub> tank) (6 NYCRR Part 595-599)
- Increase water use connection/approval (NYCDEP)

- Federal Aviation Administration (FAA) Notice of Proposed Construction
- Fire Department Storage Permit (aqueous ammonia <20% concentration)
- Modification of Coast Guard Response Plan
- Waterfront Revitalization Program Consistency Review
- Bulk Petroleum Storage Tank NYFD permit (NYFC 105.6) and NYSDEC Petroleum Bulk Storage permit (6 NYCRR 613)
- NYSPSC Certificate of Public Convenience and Necessity (CPCN) (PSC Section 68)

#### **4.0 PROPOSED DRAFT ENVIRONMENTAL IMPACT STATEMENT SCOPE OF WORK**

AGC will prepare and submit a Draft Environmental Impact Statement (DEIS) in order to fully address potential community concerns, including Environmental Justice issues. The DEIS will include all elements required by 6 NYCRR 617.9, and will include the following sections:

- 1) **DEIS Cover Sheet.** All draft and final EISs must be preceded by a cover sheet stating: whether it is a draft or final EIS; the name or descriptive title of the proposed project; the location (county and town, village or city) and street address, if applicable, of the proposed project; the name and address of the lead agency and the name and telephone number of a person at the agency who can provide further information; the names of individuals or organizations that prepared any portion of the statement; the date of its acceptance by the lead agency; and in the case of a draft EIS, the date by which comments must be submitted.
- 2) **DEIS Table of Contents.** The Table of Contents will include a listing of tables, figures, maps, appendices/attachments and any items that may be submitted under separate cover (and identified as such).
- 3) **Executive Summary.** The executive summary will include a brief description of the proposed Project and a listing of potential environmental impacts and proposed mitigation measures. A summary will be provided of the approvals and permits required, and the alternatives to the proposed project that are evaluated in the DEIS.
- 4) **Project Purpose and Public Need.** The DEIS will contain a description of the public need for the Project, including a brief overview of the environmental, social and/or economic benefits anticipated due to the proposed Project and the unique nature and characteristics of the load pocket will be described.

AGC is required to file for a Certificate of Public Convenience and Necessity from the New York State Public Service Commission under Section 68 of the Public Service Law. As part of that process, AGC will need to make a showing before the Commission that the proposed Project is in the public interest and economically feasible, and that the Project proponent is able to finance the project (16 NYCRR Section 21.3). The elements necessary for such a showing will be discussed in detail in the DEIS. The New York State Public Service Commission will be an "involved agency" for purposes of reviewing the entire DEIS.

Expected future growth of the New York Independent System Operator (NYISO) electric system demands will be presented as well as a discussion as how the proposed Project fits within the existing and future NYISO electrical system. The need for future generation capacity, including the NYISO's estimate of the expected date of additional electric supply for capacity and/or reliability, will be discussed along with regulatory requirements for the location of generation facilities.

**5) Description of the Proposed Project.** This section of the DEIS will provide a comprehensive description of the site in a regional and local context and provide a detailed discussion of the proposed Project.

**a) Site Description**

A general description of the Project area will include topography, existing road networks, surface waters, geographic boundaries, physiographic characteristics of the Project area, tax map boundaries of participating and adjacent land parcels, parcel acreages, and any easement or restrictions that could affect the proposed Project.

Dominant land use within and adjacent to the Project area will be presented in the DEIS. Other pending developments (including other electric generation projects) within or adjacent to the Project area will be discussed and identified on a site map.

The relationship of the Project area to wetland areas, streams courses, residential areas, schools, hospitals, clinics, correction facilities, retirement homes, parklands, historic properties, or any other recognized or protected natural or man-made features will be presented in the DEIS.

The DEIS will provide a review of the LCEP's consistency with the coastal policies contained in 19 NYCRR 600.5 and stipulations contained in the New York City Waterfront Revitalization Program (WRP) and will include a certified WRP Consistency Assessment Form. A discussion of the proposed Project's consistency with the policies in the WRP will be provided. In addition, a description of how the proposed Project will be designed in accordance with the architectural objectives of the Astoria waterfront redevelopment will be included in the DEIS.

**b) Detailed Description of the Proposed Project**

A description of the size, generating capacity and layout of the proposed Project will be described in the DEIS.

Site plans, depicting the Project layout, illustrating the location of the proposed electric generating equipment, substation and related electric transmission facilities, fuel storage, staging and storage areas, parking areas, operation and maintenance facilities, lighting, fences, and gates will be presented in the DEIS. Each of these components will be discussed relative to the locations of the adjacent land parcels and private buildings, existing overhead electric transmission lines, property lines, wetlands, and public roads. Determining factors for selection of equipment will be discussed. The DEIS will quantify the size of the new unit and the relative increase in capacity of the total facility after the shutdown of Unit 2 and any other shutdown/curtailment of operations from other units that may be considered as part of this project.



The DEIS will summarize the reductions from the existing units plus the potential emissions from the new unit. The result will demonstrate compliance with all regulatory requirements and specifically identify any emissions that are potentially increased.

In addition, a brief description of the decommissioning plan will also be provided. Components of the Project (i.e., ammonia storage system and associated piping) that will require registration/licensing under the Chemical Bulk Storage Regulations and the Petroleum Bulk Storage Regulations will be identified and registrations and licenses will be obtained prior to operation. The DEIS will include a description of any fuel and lube oil storage tanks, any chemical storage tanks, associated piping systems and a description of the proposed secondary containment structures to be constructed around tanks and off loading areas.

The DEIS will provide a description of gas and electrical interconnections, security measures and proposed off-site improvements, if any, that will be necessary to build and operate the Project. No off-site improvements are anticipated at this time with the exception of the electrical interconnection work in the substation which is anticipated to be minor.

### **c) Construction and Operation**

Impacts from construction and operation of the proposed Project will be described and their significance evaluated in the DEIS. Construction issues to be presented in the DEIS include construction schedule/duration, anticipated construction employment, construction sequencing, routing of construction traffic along local roads, construction noise and equipment deliveries via barge.

Despite the fact that the addition of the proposed new generating equipment will not result in large quantities of solid waste, a summary description of construction activities including clearing, treatment of natural products to be removed during construction (e.g., disposal of cut material, etc.), civil work (roads and foundations), turbine installation, and site restoration will be included in the DEIS. Excess soils that cannot be reused on site and designated for disposal off site will be properly characterized and disposed of by a licensed and insured hauler according to applicable regulatory guidelines. Sources and quantities of construction materials to be obtained from local sources (concrete, gravel, etc.) will be identified. Safeguards to be taken to protect local citizens from any construction-related hazards will be discussed.

The DEIS will include a discussion of the long-term ownership, operation, inspection, and maintenance requirements of all Project components/improvement. Information on annual rate of power generation, routine maintenance requirements, long-term employment, effect on local electric rates, and useful life of the project will be presented.

### **d) Reviews, Approvals and Other Compliance Determinations**

Governmental entities having approval over the Project, including the nature of their jurisdiction and the approvals required from each entity, whether or not such governmental entities are subject to the SEQRA process will be listed. The basis of the approval authority of each jurisdiction will be properly cited.

## **6) Existing Conditions, Potential Impacts and Mitigation Measures**

This section of the DEIS will identify the existing environmental conditions, potential impacts of the proposed project, and proposed mitigation measures as appropriate for each of the major issues identified in this Draft Scope of Work. The format or organization of this section will include the following subsection headings for each topic discussed:

- Existing Conditions
- Potential Impacts
- Mitigation Measures

This format provides for a more meaningful presentation of the environmental issues in a reader-friendly form and will allow the reader to focus on individual impact issues.

This section will be supplemented with documentation of existing conditions and the evaluation of potential for adverse impacts by including information, maps, illustrations or graphics that support each topic area including aerial photographs, topographic maps, agency correspondence, Geographic Information System (GIS) data, completed support studies, etc. This documentation will be appended to the DEIS. Both temporary (construction-related) and permanent (operational) impacts will be addressed.

### **a) Geology, Soils and Topography**

The overall subsurface geology, soils and topography of the site will be described based on available information. All expected construction-related excavation and soil disturbance activities at the project site will be described in the DEIS. The procedures that will be followed during construction to identify any potential soil contamination and remedial actions will be outlined in the DEIS. This process will be substantially similar to AGC's NYSDEC-approved Soil Management Technical Protocol (2002) currently in place at other company-owned generating facilities. This protocol establishes procedures for the proper determination, handling and disposal of contaminated soils. In addition, an erosion and sediment control plan and a Stormwater Pollution Prevention Plan will be established for the proposed project.

### **b) Water Resources**

Because the proposed Project will use dry cooling, water resources will not be significantly impacted by the proposed Project. No water withdrawals are anticipated from the proposed Project because no surface water will be required for cooling. In addition, the operation of the Project will result in a reduction in cooling water use by the existing AGS units. Modification to an existing SPDES permit for stormwater or other discharges from the new facility such as boiler blow down, if necessary, will be completed as part of the Project. The depth to groundwater will be determined. If the Project design requires the use of municipal water or discharges to the municipal sewer system, the quantity of water required and the volume and analytical properties of wastewater discharge will be properly characterized. The DEIS will include a discussion of any potential water resource impacts including benefits from the reduction in use of any of the

existing AGS units. Handling of any potential wastewater due to construction activities will also be addressed.

Available GIS mapping will be utilized to illustrate nearby state- or federally regulated wetlands and streams in the vicinity of the proposed Project. Potential impacts to surface water resources resulting from installation of all project components, and project operation, shall be described, along with proposed measures to avoid, minimize and/or mitigate these impacts. Floodplain areas regulated by the Federal Emergency Management Agency will be identified and an assessment of potential project-related impacts to floodplains, if any, will be provided in the DEIS.

The impact of the proposed Project on stormwater management within the vicinity of the Project area will be described. A stormwater management plan or adherence to surrogate state regulations pertaining to such a plan, including the related erosion control plan will be discussed in the DEIS. Appropriate mitigation measures for managing the rate, quantity and quality of stormwater runoff during construction and operations activities will be presented.

**c) Biological, Terrestrial and Aquatic Ecology**

By proposing the Project on the FOTF parcel at the existing AGS within an area zoned for heavy manufacturing (industrial) use (M3-1), adverse impacts to vegetation, fish, shellfish, and other wildlife will be avoided. Data on the project area's terrestrial and aquatic ecological resources and the extent to which the proposed project would have an impact on those resources will be evaluated. The United States Fish and Wildlife Service and NYSDEC will be contacted in order to determine the presence of any threatened and endangered species that may occur in the vicinity of the proposed Project. Proposed measures to avoid, minimize or mitigate impacts to ecological resources will be presented.

Any state- or federally listed endangered, threatened or special concern species occurring within or near the Project area on a seasonal or year-round basis as indicated through agency consultation will be reported. Mitigation measures designed to offset, reduce, or eliminate losses of listed species and associated habitat will be discussed to the extent required.

**d) Climate and Air Quality**

AGC recognizes that the local community has significant concerns about air pollution and anticipates that air quality is likely to be the major concern for the proposed project. The proposed project will require modification to the existing air permit at the AGS. Potential emissions resulting from the additional generating capacity will be offset by implementing the strategies described below. These actions will fully address community concerns and ensure that air emissions will be reduced by a combination of methods that may include but are not limited to:

1. Use of a high efficiency, low emission combined cycle combustion turbine for the Project.
2. Permit caps on the total emissions from the new combined cycle equipment.
3. Permit caps on the total emissions from the existing AGS units.

4. Shut down of existing units.
5. Permit cap on sulfur content of the oil for the Project.
6. The new combined cycle unit will employ air cooling and therefore there will be no air emissions from the cooling system as in the case of wet cooling towers.

The existing air quality status within the region of the proposed project will be discussed as well as the effects of the proposed project (during both construction [temporary] and operation [permanent]). All of Queens County, New York, including the AGS, is located in a nonattainment area for O<sub>3</sub> and PM<sub>2.5</sub>. The United States Environmental Protection Agency defines nonattainment areas as regions in which air pollution levels persistently exceed National Ambient Air Quality Standards. The LCEP will not trigger review under Prevention of Significant Deterioration or Nonattainment New Source Review regulations because AGC will commit to enforceable permit restrictions that limit new emissions to levels below significant increase thresholds.

The DEIS will include an analysis of the likely impacts from emissions of air pollutants. An air quality modeling study will be performed in accordance with the NYSDEC *Guidelines on Dispersion Modeling (DAR-10)* to support the air permit application. The assessment will be performed with a case-specific modeling protocol to be submitted and approved by NYSDEC. The modeling study will demonstrate that the LCEP will comply with United States Environmental Protection Agency and NYSDEC requirements for addressing ambient air quality standards, which are designed to protect the public health. The NYSDEC PM<sub>2.5</sub> Policy *CP-33 Assessing and Mitigating Impacts of Fine Particulate Matter Emissions* may also apply to the LCEP. AGC will evaluate the requirements of the policy in the DEIS and comply with any requirements that are applicable to the LCEP. Results of all ambient air quality modeling studies required by regulation and policy will be reported in the DEIS.

A discussion of the temporary construction-related impacts to local air quality will also be presented.

In addition to responding to local community air quality concerns, the DEIS will discuss anticipated Project emissions within the context of climate change and greenhouse gas emissions and the NYSDEC's *Guide for Assessing Energy Use and Greenhouse Gas Emissions in an Environmental Impact Statement*. Background on state policies such as the Regional Greenhouse Gas Initiative will be summarized. Project emissions of CO<sub>2</sub> will be determined and compared to global, national, and state emission levels. Potential reduction of CO<sub>2</sub> emissions will be discussed. In addition, implications of potential sea level rise due to climate change at the LCEP site will be discussed and potential adaptation measures will be presented.

#### **e) Aesthetic/Visual Resources**

The location and design of the proposed Project will allow it to fit in consistently with the heavy manufacturing (industrial) use (M3-1 District) zoning of the Project area. Given this location and the fact that the Project's stack height will be designed as low as possible to achieve ambient air quality standards, significant visual impacts are not anticipated.

The visual analysis of the project will be prepared in a manner consistent with NYSDEC Visual Policy *Assessing and Mitigating Visual Impacts, DEP-00-2*. The visual character of the area within a 2-mile radius of the Project area (the visual study area) will be described and the visual impact assessment will address the potential for the Project to impact any of the fifteen (15) resource categories listed in Section V(A) of the visual policy. Notable visual/aesthetic resources within this area that are considered sensitive from a statewide and local perspective will be identified. In addition, visual impacts from the proposed Project to historic structures within a 2-mile radius will be determined. Potential Project visibility and visual impacts using objective analytical techniques will be evaluated, including:

- Describe short-term visual impacts associated with Project construction.
- Determine the extent of potential Project visibility within the visual study area, based on viewshed mapping, line-of-sight cross sections, and field verification.
- Evaluate the change in visual character that may result from implementation of the proposed Project, based on the preparation and evaluation of computer-assisted visual simulations.
- Recommend measures to minimize impacts to aesthetic resources.

**f) Historic, Cultural and Archaeological Resources**

Given the urban nature of the existing view shed, it is anticipated that no adverse impacts to cultural, archaeological, historic or other natural or cultural resources will result from the proposed Project. In order to definitely characterize the Project area, a Phase 1A archeological investigation will be conducted within the proposed project footprint. Additional consultation with the New York State Historic Preservation Office will be conducted based on the findings of the Phase 1A study.

Architectural treatments will be considered to be consistent with the current site uses and the area generally and with respect to potential visual impacts to area historic structures will be determined.

**g) Noise**

The noise analysis will be conducted in a manner consistent with the NYSDEC Noise Policy *Assessing and Mitigating Noise Impacts Program, DEP-00-1*. The DEIS will document ambient noise conditions within the Project area, describe anticipated construction-related noise, and calculate the potential impacts that will result from operation of the proposed Project. The DEIS will evaluate potential noise increases and low frequency noise by using a recognized sound power level prediction model. Compliance with noise thresholds as defined in City noise ordinance and zoning code will be addressed, including predicted noise levels at the nearest adjacent residences. Proposed means of mitigating potential construction and operational noise impacts will be addressed. It is anticipated that because the new unit will be built with sufficient sound reduction technology there will be no significant increase in local sound levels from the Project. The noise analysis will assess background ambient noise levels which include operation of the existing AGS, other nearby generating facilities and other commercial/industrial

activities and the potential impacts that may result from “worst case” conditions defined by the expected operations of the LCEP as presented in the DEIS.

**h) Traffic/Transportation**

The existing road systems will be described and those roads that will be used for construction of the proposed Project will be identified. In addition, the transportation requirements of the Project (e.g., turning radii, vehicle widths, vehicle weight) will be presented. Limitations/deficiencies that affected roads, bridges and tunnels may have will be identified and discussed. Potential impacts that may occur during the construction period including temporary damage to road surfaces and temporary traffic delays (due to slow-moving or parked vehicles), will be discussed. The effects, if any, which these impacts may have on local businesses, will be presented. A construction and post construction parking plan will be developed. The existing AGS fuel storage water-borne fuel delivery schedule is not anticipated to significantly change due to the construction and operation of the proposed project. Nonetheless, the effects of water-borne deliveries of equipment including fuel deliveries, handling and fuel storage activities for the LCEP will be evaluated.

**i) Socioeconomics**

The economic effect of the proposed project, including the long-term and short-term employment and impact to local businesses will be discussed. Labor and community demographic statistics from the most current United States census will be compiled and discussed.

**j) Environmental Justice**

The LCEP is located in the Astoria community of Queens, New York. NYSDEC has conducted a preliminary screen of the area and determined identified portions of the potential impact radius are Potential Environmental Justice Areas. The DEIS will begin its evaluation of the proposed Project based on the guidelines and recommendations provided in NYSDEC Commissioner Policy 29 on Environmental Justice and Permitting (CP-29). With information gathered from existing publicly available data, the DEIS will include a description of existing environmental burdens in the community; such may include comparable and or contributing emission sources, commercial truck traffic routes and industrial facilities amongst other items. A Health Outcome Data display will be developed consistent with the NYSDEC Health Outcome Data Report 2006, the Protocol for Initial Air Quality Modeling to conduct the Health Outcome Data Display and Comparison dated November 18, 2008, and the July 21, 2008, draft protocol prepared by the New York State Department of Health (NYSDOH) and the NYSDEC. The data display will include comparative assessment of pertinent health data, e.g. asthma rates in Astoria, and an evaluation of any potential additional burden posed by the proposed project. It is possible that publicly available data may not exist to meet the full NYSDOH protocol. If there is not sufficient or appropriate data to provide an analysis that is in accordance with the NYSDOH protocol the LCEP will evaluate the incidence of asthma and cancer based on the data that can be obtained from NYSDOH concerning asthma hospitalization rates and from the New York State Cancer Registry.

Community outreach and public participation effected through the means of the enhanced public outreach plan prepared for the LCEP will allow for public input to the review process for the LCEP as set forth in the SEQRA regulations. The Public Participation Plan and community website ([www.USPowerGen.com](http://www.USPowerGen.com)) have already been developed and were submitted as part of the Short Environmental Assessment Form.

**k) Public Safety**

The proposed Project site is already protected by security services that will be modified prior to the start of construction. The DEIS will address potential public safety issues associated with the proposed project, including traffic, fire, security and new chemical storage. Restrictions on public access and other means of avoiding or minimizing public safety risks will be discussed, along with proposed plans to respond to public safety incidents.

**l) Community Facilities and Services**

Existing community services, including fire departments, emergency services, schools, hospitals, clinics, and parks and recreation facilities will be discussed. In addition recreational uses of the area including parks will be identified and potential impacts as a result of the LCEP will be discussed. Such information will be based on personal communications with service providers and/or review and confirmation of pertinent literature and will specifically address contact with Mt. Sinai Hospital in Queens. The DEIS will identify how the proposed Project may impact or benefit the above services and the resources of the entity providing the services. The adequacy of existing services and facilities will be evaluated, along with the potential benefits to these services and facilities resulting from project implementation. Any required mitigation measures to offset or lessen potential impacts shall be identified, including modification to existing fire protection and emergency response plans developed in consultation with the local fire departments/emergency service providers.

**m) Communication Facilities**

Given the fact that stack height will be designed as low as possible to achieve ambient air quality standards, it is anticipated that no adverse impacts to communication facilities will result from the proposed Project. Existing wireless communication facilities within and adjacent to the Project area will be identified. Potential Project impacts on microwave beam paths, as well as television, radio, and cellular phone reception and transmission will be discussed. Mitigation measures to avoid and minimize impacts on communication facilities will be proposed, if necessary.

**n) Land Use and Zoning**

Existing conditions and potential impacts regarding the proposed Project's compatibility with the character and development trends in the area, as well as with surrounding land uses and community resources will be discussed. The DEIS shall evaluate the relationship of the proposed project to existing land use and the surrounding community. The Project is compatible with current zoning in the area, which is heavy manufacturing (industrial) use (M3-1). The DEIS will analyze compliance of the Project with applicable performance and bulk requirements. Specifically, the evaluation will include:

- Existing and proposed land use within and adjacent to the Project area.
- Compliance/consistency with requirements of all local ordinances.
- Consistency with local Comprehensive Plans and/or development goals.
- The compatibility of the proposed Project with surrounding land uses, and its potential impact on property values.

The DEIS will provide a review of the LCEP's consistency with the coastal policies and stipulations contained in the WRP and will include a certified WRP Consistency Assessment Form. A discussion of the proposed Project's consistency with the policies in the WRP will be provided.

A map will be provided which illustrates the study areas existing economic development zones; designated Coastal Zone boundaries; Wild, Scenic and Recreation Corridors; Scenic Areas of Statewide Significance; and Critical Environmental Areas designated pursuant to the SEQRA. The proposed Project's relationship to and/or potential impacts on these designated areas will be evaluated.

## **7) Unavoidable Adverse Impacts**

This section of the DEIS will identify impacts that may occur despite mitigation measures, and will compare the beneficial and adverse implications of these unavoidable impacts.

## **8) Alternatives Analysis**

In accordance with 6NYCRR Part 617.9(b)(5)(v), the DEIS will include a description and evaluation of the range of reasonable alternatives to the proposed Project. Alternatives to be considered will include alternate project size, alternate project location, alternate project layout, alternate plant technologies (peaking vs. combined cycle), and the "no action" alternative. Among the alternatives considered and addressed in the DEIS are: repowering, shutdown of the existing facility, and shutdown of existing sources comparable to the capacity of the new source (i.e., 500 MW old for 500 MW new). The evaluation and comparison will include a quantitative and qualitative comparison of unavoidable impacts associated with each alternative.

## **9) Irreversible and Irretrievable Commitment of Resources**

This section of the DEIS will identify those natural and man-made resources consumed, converted, or otherwise made unavailable for future use as a consequence of the proposed Project.

## **10) Cumulative Impacts**

Given AGC's proposal of a Project that reduces total AGS emissions by various strategies outlined above, it will contribute to an improvement in local air quality, and given the expectation that there will be no significant adverse impacts to other environmental resources, it is anticipated that there will be no cumulative adverse impacts from the Project.

The DEIS will discuss the potential cumulative impact, including positive impacts, of the proposed Project along with other electric generation projects that have been proposed within the region. The



potential for, and impact of future electric generation projects, or expansion of the proposed Project, will also be addressed. Based on information obtained from existing publicly available data, the DEIS will also discuss impacts from other major sources of air pollution in addition to electric generating facilities in the vicinity of the LCEP.

### **11) Growth-Inducing Aspects**

This section of the DEIS will describe potential growth-inducing aspects the proposed Project may have, particularly the potential for additional development of electric generation power projects in the vicinity of the Project area.

The DEIS will contain a description of the existing NYISO electric system demands and expected future growth in demands. A description of how the proposed project fits within the existing NYISO electric system will be included. The need for future generation capacity, including the NYISO estimates for additional electric supply and PlaNYC 2030 will be discussed along with regulatory requirements for the location of generation facilities.

### **12) Effects on the Use and Conservation of Energy Resources**

This section of the DEIS will describe the effect of the proposed project on the use and conservation of energy resources. Benefits of utilizing efficient, state-of-the-art generation technologies and environmentally preferable fuels (e.g., ultra low sulfur diesel, natural gas, and potentially bio-fuels) will be presented. The DEIS will also address an analysis of energy efficiency at AGS.

### **13) Green Design Considerations**

This section of the DEIS will evaluate and describe the environmentally friendly, green design attributes which may be incorporated into the proposed Project, including the emission reduction strategy.

Green design considerations for the proposed Project include both green building techniques and renewable/conservation energy strategies. The green designs attributes which will be evaluated, include, but are not limited to, the following items:

#### Green Building Techniques

- 1) Green planted spaces around the facility.
- 2) Incorporating vegetation to mitigate potential visual and/or noise effects.
- 3) Laying out the facility to minimize bulk.
- 4) Selecting colors that blend into the area.

#### Renewable/Conservation Energy Strategies

- 1) Capturing rain water for irrigation on site.
- 2) High efficiency lighting.

- 3) Review/modification of the conservation efforts in the existing AGS (i.e., replacing lights to energy efficient fixtures/bulbs).
- 4) Consideration of using electric/hybrid vehicles on site.

#### **14) References**

This section of the DEIS will list any sources of relevant information cited directly in the report text.

#### **5.0 APPENDICES TO ACCOMPANY DEIS**

To supplement the information required in each topic section, include the following:

- Relevant technical maps, figures and exhibits
- Project plans, technical specifications, or construction information
- Air quality modeling, methodology and results
- Air permit modification application
- SPDES permit modification application
- Phase 1A cultural resource report
- Visual impact assessment
- Noise assessment
- Geotechnical assessment
- WRP Consistency Assessment Form and New York State Department of State Coastal Assessment Form
- Relevant agency correspondence
- Final Scope of Work for DEIS
- List of interested or involved agencies
- List of firms and persons responsible for preparation of the DEIS