

NRG Astoria Gas Turbine Power LLC -- Repowering Project  
State Environmental Quality Review (SEQR)  
Final Scoping Document for Draft Environmental Impact Statement  
December 24, 2008

The New York State Department of Environmental Conservation (DEC) has prepared this Final Scope for the Draft Environmental Impact Statement (DEIS) to be prepared for a site repowering project (the "Proposed Project") sponsored by NRG Astoria Gas Turbine Power LLC ("Astoria"), owner of the Astoria Generating Station (the "Station"). Phase I of the proposed action involves replacement of existing electrical generation units with two 260 MW Siemens SCC6-5000F combustion turbines, or functionally equivalent state-of-the-art quick start turbines. Phase II proposes to replace additional existing units with two additional combustion turbines (for a total of four units). Because the specific type of replacement turbine has not yet been identified, all analyses will assume the more conservative values of the potential choices.

### **Purpose of Scoping and the SEQR Process**

On December 17, 2007, the DEC received an Application for a Title V Air Permit from Astoria Gas Turbine Power LLC for development of the Proposed Action. DEC determined that the Project was a Type I Action under the New York State Environmental Quality Review Act ("SEQRA"). Accordingly [pursuant to 6 NYCRR §617.6(b)(3)] on April 8, 2008, DEC circulated a Lead Agency Coordination Letter and Environmental Assessment Statement form Part 1 to all other Involved Agencies. In this correspondence, DEC indicated its intention to act as Lead Agency for the purpose of a coordinated SEQRA review of the Proposed Action. No objections were made to DEC acting as Lead Agency by any of the Involved Agencies; therefore, DEC determined that it will be the Lead Agency for the SEQRA review of this action on October 8, 2008. The applicant will submit a modified application for a two-phase project.

On October 8, 2008, DEC, as Lead Agency, determined that the Proposed Project may have the potential for a significant adverse environmental impact on the environment and that a DEIS must be prepared. Also pursuant to 6 NYCRR §617.8, DEC required Public Scoping for the Proposed Action. Public Scoping under 6 NYCRR §617.8 is the process by which the Lead Agency, in cooperation with the public and involved or interested agencies, identifies potentially significant adverse impacts that should be considered in a DEIS.

DEC provided opportunity for written comments on the Draft Scope to be submitted until November 26, 2008. Additionally, a public scoping meeting was conducted on November 12, 2008, at Riccardo's Restaurant, 21-01 24th Avenue, Astoria, New York, to elicit comments from interested members of the community. Public scoping sessions were conducted at 4 PM and 7 PM. Three statements were made at the 4 PM meeting, generally in support of the re-powering project, with one commenter recommending that the project sponsor look for ways to help the community become more "green." This comment resulted in an addition to the Final Scope in Section 20. Two statements were made at the 7 PM meeting, generally in support of the re-powering project. In addition, two written statements were received by DEC, both generally in favor of the proposed re-powering.

As part of the Environmental Impact Statement (“EIS”) process and in accordance with 6 NYCRR §617.8, this Final Scoping document has been prepared under the review of DEC. 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 DEC to the public and all involved and interested agencies for review and comment.

Copies of this Final Scope of Work are available for review at the following locations:

New York State DEC Region 2 Office  
47-40 21<sup>st</sup> Street  
Long Island City, New York 11101

Queens Public Library  
The Steinway Branch  
21-45 31<sup>st</sup> Street  
Long Island City, New York 11105

Queens Public Library  
The Astoria Branch  
14-01 Astoria Boulevard  
Long Island City, New York 11102

This Final Scope of Work can be viewed and downloaded from the NRG Astoria Gas Turbine Power LLC website, <http://www.nrgenergy.com/news-center/astoria/documents.htm>, or the DEC Division of Environmental Permits website, <http://www.dec.ny.gov/permits/6061.html>.

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## **Executive Summary of Scoping Issues**

The Proposed Project, as outlined below, will incorporate a two-phase development process. In Phase I approximately 120 MW of 1970-vintage uncontrolled Westinghouse oil-fired peaking turbines will be retired and demolished. This capacity will be replaced with approximately 520 MW of new state-of-the-art combustion turbines. In Phase II approximately 480 MW of 1970-vintage Pratt & Whitney capacity will be retired. This Pratt & Whitney capacity will then be replaced with approximately 520 MW of new state-of-the-art combustion turbines. Thus, the two-phase project will result in the replacement of the existing approximately 600 MW of peaking only capacity with 1040 MW of state-of-the-art turbines with ultra low emissions and dual fuel firing capability. The units will be constructed within the boundaries of the existing Station. This project lies within the overall Astoria complex, which is the site of several existing power generation facilities and has been occupied by power generating plants since at least 1904.

The Proposed Project will result in more efficient electricity production (greater than 48% efficiency for the proposed units as compared to approximately 35% efficiency for the existing units) and dramatically reduced emissions at the Station. In addition, the project will provide greater electric generation capability in megawatts per hour and more available hours per year. Depending on dispatch and contract needs, the new units will be able to operate for more than 7000 hours per year per turbine, in comparison to just a few hundred hours per year per turbine for the existing units, thus providing a far more reliable electric supply to the grid. The new units will provide more reliable power output in an intermediate operating mode -- they can be used both as peaking units and as base loaded units. Additionally, the new units will provide 10-minute rapid start capability nearly equivalent to black start units. The new turbines included in the Proposed Project have high thermal efficiencies and ultra-low emissions potential. Unlike the existing turbines, the new turbines will be equipped with state-of-the-art emissions controls and continuous emissions monitoring equipment. The new units will substantially reduce emissions of nitrogen oxides (“NOx”), as compared to the current units, and overall significantly reduce emissions on High Energy Demand Days (“HEDD”). Other measurable operating and emissions parameters will be improved. Air quality impacts will be assessed using DEC approved air quality modeling protocols.

Stack height will be between 220 and 250 feet for each of the stacks based on a good engineering practice (“GEP”) analysis and design criteria for the new equipment. These stacks will replace the shorter individual stacks being used for the existing turbines. The Federal Aviation Administration (“FAA”) has reviewed and approved the stack height application.

An Environmental Justice Analysis consistent with Commissioner's Policy 29 and a Health Outcome Data Analysis consistent with the July 21, 2008, New York State Department of Health ("DOH") draft protocol will be performed to address community impacts. Construction and traffic impacts will be minimized by using barge delivery for some large equipment and reducing truck traffic consistent with the local Astoria traffic management plan.

Noise impacts for the new equipment profile and for construction will be analyzed and mitigated as necessary. Nearby facilities are large power plants and industrial operations. Residential properties lie more than 0.4 miles from the project site.

The Proposed Project will require approvals from the New York Public Service Commission ("PSC") including the issuance of a Certificate of Public Convenience and Necessity ("CPCN") under Article 68 of the Public Service Law. Other than building permits and various non-discretionary local approvals, the Proposed Project is not subject to New York City discretionary approvals and, thus, is subject to review under SEQRA. A Title V Air Permit modification to be issued by the DEC will be required. Other associated air permit approvals such as Acid Rain and NOx Budget will accompany the Title V Permit modification.

## Project Purpose and Public Need

The DEIS will describe the public need for the Proposed Project. The advanced age ( $\pm 35$  years) of the existing turbines at the Station necessitates repowering to improve the reliability of delivery of electric services to the New York Independent System Operator ("NYISO"). The DEIS will discuss in more detail the NYISO's estimates for future generating capacity needs and reliability and the manner in which the Proposed Project will address the NYISO's needs. The DEIS will also discuss the Proposed Project's consistency and fit within the New York City's Energy and Emissions Plan components of PlaNYC.

## Project Description

The Proposed Project will be conducted at the Station, which is located at 31-01 20th Ave., Long Island City, Queens County, New York 11105. Phase I of the Proposed Project consists of the replacement of seven Westinghouse turbines (rated at 239 mmBtu/hr or 345 mmBtu/hr each and totaling about 120 MW) with two state-of-the-art turbines capable of providing more than 520 MW of electricity and equipped with low NOx combustors, Selective Catalytic Reduction ("SCR"), carbon monoxide ("CO") oxidation catalysts, and continuous emissions monitors. The two new units (the "Phase I units") will be placed on the portion of the facility already paved and occupied by the Westinghouse turbines. Each Phase I turbine will provide considerably more energy output per unit of emissions than the old Westinghouse turbines and will have rapid ramp capability of approximately 140 MW output in 10 minutes. Although the Phase I units will operate primarily on natural gas, they will have a limited oil firing capability as required by the NYISO in the event of a natural gas curtailment. The Phase I units are expected to be operational no earlier than summer 2012.

Phase II will replace all 24 of the Pratt & Whitney turbines (rated at 255 mmBtu/hr each) with an additional two new units capable of producing a combined total of approximately 520 MW electric output (the “Phase II units”). Upon expected completion in 2014, the Station will consist of four new turbines with an aggregate rated output capacity of approximately 1040 MW. The Proposed Project description in the DEIS will include the existing site conditions, physical setting, and overview of the construction of the new equipment.

Since the Proposed Project will be completed in two separate phases, the existing turbines in the associated project phase will be removed prior to the construction of the new turbines for the applicable phase. The Pratt & Whitney turbines are expected to remain fully on-line and available during the Phase 1 construction. Construction will take approximately 24 months for each phase, with Phase I commencing no earlier than summer 2010 and Phase II commencing no earlier than summer 2012. General construction issues and equipment laydown will be addressed in the DEIS.

The technology selection is currently under review by the project sponsor. Two turbine technology options are currently being considered for deployment for the Proposed Project. The first, referred to as the Siemens Flex10™ configuration, would utilize the Siemens SCC6-5000F configured in a “1x1” combined cycle arrangement. The Flex10™ unit will have rapid ramp capability of approximately 140 MW output in as little as 10 minutes. The projected heat rate of the Flex10™ is expected to be 8,000 btu/kWh.

The second turbine technology being considered would be General Electric’s (“GE”) widely used 7FA technology, arranged in a “1x1” combined cycle setup. The GE technology is expected to also have rapid ramp capability of approximately 140 MW in as little as 10 minutes. The projected heat rate of the GE technology also is expected to be at or below 8,000 btu/kWh.

Both technology configurations will operate primarily on natural gas, but will have a limited oil firing capability to serve the critical hours and days when natural gas availability in New York City is at its lowest, up to 100 hours per year. The units would be equipped with low NOx combustors, SCR, and CO oxidation catalysts as well as emission monitors. NRG expects that the performance of both technologies will not materially differ, and that the final technology selection will be based on unit operating performance, availability, and key environmental factors. The high efficiency for either technology selection allows for more electric output per million Btus of fuel burned as opposed to the existing units.

## Regulatory Reviews and Approvals

The applicable regulatory approvals and reviews required for the Proposed Project are listed below. Briefly summarized, a Title V Air Permit modification is required, approvals are required from the PSC including CPCN approvals, and permits are required from New York City agencies for construction, demolition building permits, sewer and water use, and others. These permits/approvals will be identified and discussed in more detail in the DEIS with reference to the responsible agency.

- Title V Air Permit Modification, 6 NYCRR Part 201 and associated air permit elements (such as PSD BACT review, NSR LAER review, Acid Rain Permit, NOx Budget, etc.)

- New York City Certificate of Operation, 15 RCNY, Chapter 2
- Increase in water use and sewer discharge approval from New York City Department of Environmental Protection (NYCDEP)
- FAA stack height and Notice of Proposed Construction (issued by the FAA on 02/12/2008)
- CPCN to be issued by the PSC pursuant to Article 68 of the New York Public Service Law
- SPDES permit modification for storm water surface discharge from construction activity
- 6 NYCRR Part 750
- Triennial Air Certificate from NYCDEP
- Chemical Bulk storage registration for ammonia tanks, 6 NYCRR Part 596-599
- Fire Department of New York storage permit for aqueous ammonia
- Modifications to the existing Coast Guard Response Plan and MARSEC
- Waterfront Revitalization Program Consistency Review
- Retirement Notice to Public Service Commission

## Air Quality Impacts and Benefits of Repowering

The Phase I units, totaling approximately 520 MW, will replace seven existing Westinghouse turbines. The Westinghouse turbines are nearly 40 years old, operate as peaking turbines only, burn fuel oil only, and operate with no air pollution controls. The Westinghouse turbines have low thermal efficiencies as compared to the high efficiency of the new units. The new units have the capability to quick start and ramp to approximately 140 MW in 10 minutes assuring a reliable electric supply to the grid, if needed, in a fast reaction mode. Issues relating to the air quality review include:

- The new turbines have ultra-low NO<sub>x</sub> emissions capability and can meet a 9 ppm NO<sub>x</sub> level at the downstream side of the turbine before add-on controls.
- With add-on SCR the units can achieve 2 ppm NO<sub>x</sub> emissions rates when firing natural gas. SCR is widely recognized throughout the country as the Lowest Achievable Emission Rate (“LAER”) add-on technology for the new turbines.
- The project will dramatically reduce High Energy Demand Day (HEDD) emissions from the seven Westinghouse and 24 Pratt & Whitney units. The new turbines can reduce potential NO<sub>x</sub> emissions on a typical HEDD (e.g., 8/3/2006) from as much as 22 tons per day to less than one ton per day and still provide over four times as much power to the grid. Because high ozone concentrations in the Northeast Corridor often coincide with highest electricity demand, the use of new ultra-low NO<sub>x</sub>-emitting turbines can be used to displace electricity from higher NO<sub>x</sub> emitting facilities in the region, thus, meeting DEC’s HEDD commitments under the Ozone Transport Commission’s HEDD Memorandum of Understanding signed by New York State.
- The project will dramatically reduce the total NO<sub>x</sub> annual emissions as compared to the emissions from the seven Westinghouse and 24 Pratt & Whitney units and will dramatically reduce the Maximum Annual Potential (“MAP”) emissions for NO<sub>x</sub> as

compared to the permitted MAP for the existing turbines. The existing Westinghouse and Pratt & Whitney turbines have no emissions controls. Emissions reductions from the existing units will be used as offsets for the new units.

- The new units will allow for the migration of the facility to ultra low sulfur diesel oil for the limited potential hours on oil during natural gas curtailments. Thus, emissions of SO<sub>2</sub> and PM<sub>2.5</sub> will be reduced by combusting the natural gas and ultra low sulfur fuels instead of higher sulfur fuel oil.
- CO and volatile organic compounds (“VOCs”) emissions will be minimized and controlled better than with the current turbines by the more combustion efficient new turbines (in excess of 48% thermal efficiency for the new equipment as opposed to the existing equipment) and by destruction in the add-on oxidation catalyst.
- Startup and shutdown emissions will be significantly minimized due to the rapid startup ramp capability of the new turbines as compared to the existing units.
- The project will result in a small net increase or decrease in other pollutants as compared to the actual emissions from the existing turbines, which will be provided in the DEIS, and significantly lower emissions as compared to the MAP emissions for the existing turbines.
- The new units will result in avoided greenhouse gas emissions equivalent to more than 100,000 cars by 2012 and substantially more as Phase II equipment comes on line in 2014.
- The new turbines and emissions control devices will be equipped with continuous emission monitoring systems (“CEMS”).
- GEP stack heights will improve dispersion as opposed to the existing short stacks and will reduce localized air quality impacts attributable to contributions from the turbine emissions.
- Preliminary modeling of the project shows that no air quality impacts will exceed significance levels. Formal modeling is necessary to confirm the preliminary results. Proposed air modeling protocol has been submitted to DEC. The final agency approved protocol will be used to conduct the formal modeling.
- Extensive cumulative air quality impact analyses have been performed for recent projects in New York City including an analysis for the Berrians application. These previous air quality studies have demonstrated their project compliance with National Ambient Air Quality Standards for regulated pollutants (CO, SO<sub>2</sub>, NO<sub>x</sub>, and PM-10). These previous studies will be used to overview and compare the air quality impacts from the Astoria Proposed Project.
- Astoria will surrender the previously-approved Berrians Project Permit upon issuance of the permit approvals for the two-phase Proposed Project. Surrendering the Berrians Project permit removes additional approved emissions from the facility's maximum annual permitted potential to emit and, therefore, provides a future net air quality benefit through avoidance of the Berrian’s project emissions.

## Scope of Draft Environmental Impact Statement (DEIS)

The DEIS will provide an analysis of the significant adverse and beneficial impacts of the Proposed Project and an analysis of the alternatives to the Proposed Project. Where applicable, the DEIS will reference information included in an Environmental Assessment Statement (EAS)

prepared for a prior proposal at the site, the Berrians Unit 1 Project (the “Berrians Project”). The full text of the Berrians Project EAS will be included as an appendix to the DEIS. The DEIS will include the following elements:

- Unavoidable adverse impacts
- Alternatives
- Irreversible and irretrievable commitment of resources
- Cumulative impacts
- Growth inducing aspects
- Effects on the use and conservation of energy resources

The section of the DEIS addressing existing conditions, potential impacts, and mitigation measures will be structured to present the following:

- existing conditions of the Station and its operation,
- potential impacts of the Proposed Project, including benefits, and
- mitigation measures for significant adverse impacts.

This analysis will be supplemented with visual aids including maps, photos, charts, graphs, and figures. Appropriate references will be provided.

The scope of the DEIS is set forth below.

## 1. Geology, Soils and Topography

These resources were analyzed in the previously proposed Berrians Project. Station, The DEIS will include a summary of the prior EAS discussion of these resources, with the full EAS discussion incorporated by reference. To the extent that the Proposed Project’s impacts are substantially different from the Berrians Project’s impacts, those elements will be addressed in the DEIS.

## 2. Water Resources

The Station currently operates under State Pollutant Discharge Elimination System (“SPDES”) permits for storm water and an NYCDEP sewer use permit. The impacts of the Proposed Project will be addressed as to modification of the water use and discharge requirements. Estimates of water usage changes and anticipated discharges to surface waters and the city sewer system will be identified. As noted in the Berrians Project’s EAS, no wetlands or seasonal streams are in the immediate vicinity of the Station; therefore, these resources will not be discussed in this DEIS. Floodplains will be identified and an assessment of potential project related impacts, if any, will be provided.

### 3. Biological, Terrestrial and Aquatic Ecology

Because the Proposed Project is located at an existing developed and operating power plant property, it is anticipated that adverse ecological impacts will be avoided. An assessment of ecological impacts, if any, will be addressed in the DEIS.

### 4. Climate and Air Quality

Air quality remains one of the most significant issues for the community and permitting remains one of the most time consuming approval elements for power plant projects. This section will present the air permit application documents, the air quality impact analysis including modeling, and the measures undertaken by NRG to mitigate air quality impacts for this project. Key elements of this analysis have been previously noted in the Scoping Document, but include the following:

- The equipment will include ultra low NO<sub>x</sub> turbines with add-on controls.
- All old, uncontrolled turbines currently in operation at the site will be shutdown for this project.
- The shutdown of old equipment will be used in offsetting new turbine emissions.
- Primary fuel of the new turbines will be natural gas.
- The new equipment will allow the Station to switch to ultra low sulfur diesel for limited periods of oil firing during natural gas curtailments and shortages.
- The Proposed Project will result in LAER for non-attainment pollutants and Best Available Control Technology (BACT) for most attainment pollutants.
- The Proposed Project will result in a net decrease in the NO<sub>x</sub> MAP for each of the Proposed Project's phases.
- The new turbines will meet GEP stack height requirements to improve dispersion and eliminate short stack dispersion concerns.
- Substantial combustion efficiency improvements will result from the Proposed Project including improved production output and avoided greenhouse gas emissions.
- The Proposed Project's dramatically reduced emissions will provide benefits for DEC's HEDD Program by offsetting emissions from less efficient facilities.
- The emission reductions to be achieved through repowering the Station with the new equipment are consistent with New York City's PlaNYC goals.
- A discussion of PM<sub>2.5</sub> offsets will be included in the DEIS.
- A discussion of greenhouse gas emissions (implicated in climatic change) will be provided. This discussion will include emissions estimates and mitigation measures for carbon dioxide (CO<sub>2</sub>) where appropriate. A review of expected regulatory standards being developed by the DEC for electric generating unit efficiency will be included. In addition, implications of potential sea level rise at the NRG Astoria site due to climate change will be discussed and potential mitigation measures will be presented.

## 5. Aesthetic/Visual Resources

The Proposed Project will eliminate all of the Westinghouse and Pratt & Whitney stacks (31 total) and replace those with no more than four GEP stacks. Aesthetic/visual impacts for this project will be addressed by the DEIS.

## 6. Historic, Cultural and Archaeological Resources

The Berrians Project's EAS contained a detailed analysis of the archaeological and cultural resources of the area. As noted here and in the Berrians Project's EAS, the Proposed Project is to be located on the currently operational and paved portion of the Station. The New York State Office of Parks, Recreation, and Historic Preservation has confirmed in writing (by letter dated April 15, 2008) that the Proposed Project "...will have No Adverse Impact upon cultural resources in or eligible for inclusion in the State and National Register of Historic Places." Thus, no further analysis of this issue is necessary for the DEIS.

## 7. Noise

The applicant currently is performing a noise impact assessment and modeling using accepted protocols and methodologies. This review is consistent with the DEC Program Policy - Assessing and Mitigating Noise Impacts DEP-00-1. Information from the manufacturer, along with other noise information sources, such as the Power Plant Construction Noise Guide, EPA publications, and others, will be consulted. Noise impacts will be assessed for both the construction activities on site as well as permanent normal operations. The results of this analysis will be compared to local and city noise ordinances and regulations. Any significant noise impacts affecting the community requiring mitigation will be addressed with project design changes including, as necessary, equipment modifications, layout changes, and noise reduction measures.

## 8. Traffic/Transportation

The Proposed Project will require the removal of existing equipment and the installation of new equipment. Some of the larger equipment can be delivered by barge. However, truck delivery will also be necessary. These will be addressed in the DEIS. Astoria and its contractors will make use of existing local transportation plans to minimize impacts to the community during construction. With a 24-month construction period expected for each of Phase I and II, the construction impacts will cover an extended period and will be specifically noted and addressed. Traffic issues during normal operation following completion of construction and equipment startup will be no different than those impacts experienced historically for normal plant operations and, thus, only construction period impacts will be further evaluated.

## 9. Socioeconomics

A socioeconomic discussion was included in the EAS for the Berrians Project and will be updated for the Proposed Project. Job creation and labor impacts will be addressed along with estimates of impact to local businesses. Tax impacts and benefits will also be identified. Additionally, the benefits of a significantly more reliable and more efficient electric generating facility in place of 35+ year old equipment will be included, such as lower energy costs for consumers as well as the addition of more reliable generation capacity in New York City.

## 10. Environmental Justice

Consistent with the DEC Commissioner's Policy 29, Astoria must prepare an Environmental Justice ("EJ") Analysis and Public Information Program (the "EJ Plan"). Astoria will include in the EJ analysis a discussion of the health outcome data review using the July 21, 2008, draft protocol prepared by the DOH and the DEC and as reviewed with those agencies in a pre-application meeting of September 26, 2008. Astoria maintains effective communications with the community and has already initiated outreach with local public policy officials regarding this repowering project. The EJ Plan will be implemented in a timely manner to provide the community with information on the benefits and potential impacts of the Proposed Project. In addition, the EJ Plan will include a review of the Astoria, Queens Community surrounding the project area. Project information meetings and resource materials are being provided to the community.

## 11. Public Safety

The Station is located within the security restricted Astoria Complex. Additionally, the Station has its own security and access restrictions, including fencing, and is continuously monitored by cameras and security patrols. Since the Station's employee roster will be minimally different after repowering, the public safety impacts are expected to be minimal, if any. Public safety issues were addressed with the Berrians Project and, to the extent that those impacts are expected to change with this repowering, will be addressed further in the DEIS.

## 12. Community Facilities and Services

The impacts on community services and facilities will be addressed in the DEIS. For example, the plant's existing fire, spill, and emergency response procedures may require modification as a result of the repowering project. The existing facilities have been operational for more than 35 years with the current equipment configuration. Local community fire departments and emergency service providers will be consulted in assessing these impacts and in making appropriate adjustments to planning documents.

### 13. Communications Facilities

The current turbines are surrounded by large power generating facilities and other heavy industry. Tall stacks and large buildings and structures exist immediately adjacent and surrounding the project site. According to the FAA records, numerous buildings and stacks are present within one nautical mile of LaGuardia that are over 100 feet in height. To the extent that the repowering project equipment might adversely impact communications facilities uniquely, these impacts will be identified and discussed in the DEIS.

### 14. Land Use and Zoning

The current Station is fully developed with the old Westinghouse and Pratt & Whitney electric generating units. The repowering project will not impact the site land use or zoning, but will solely focus on upgrading the generating equipment. No changes in zoning are expected to be required. No further review of this issue is required.

### 15. Unavoidable Adverse Impacts

The DEIS will identify significant adverse impacts that may occur despite mitigation measures and will compare the benefits and consequences of these unavoidable adverse impacts.

### 16. Alternatives Analysis

6 NYCRR § 617.9(b)(5)(v) requires that the DEIS include an analysis of the range of reasonable alternatives to the Proposed Project. The alternatives to be evaluated include: an alternate project site, an alternate size and equipment profile, simple cycle peaking vs. intermittent combined cycle, and “the no action” alternative. Additionally, the alternatives analysis will include a discussion of a "Phase I only" alternative. The evaluation and comparison will include a quantitative and qualitative comparison of unavoidable impacts associated with each alternative.

### 17. Irreversible and Irrecoverable Commitment of Resources

This section of the DEIS will discuss the commitment and consumption of human and natural resources as a consequence of the project.

### 18. Cumulative Impacts

The applicant’s proposal to replace existing equipment with new state-of-the-art low emissions equipment can be expected to provide some net air quality benefits. The DEIS will discuss the potential for cumulative impacts such as air quality benefits. The DEIS will identify and discuss both adverse and positive cumulative benefits. 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 NRG Astoria facility.

## 19. Growth Inducing Aspects

The DEIS will discuss the potential for the Proposed Project to provide growth inducements in the project area. The DEIS will contain a discussion of current and projected energy demand and supply for the project area. Both the NYISO projects and PlaNYC 2030 will be discussed, as well as the State Energy Plan, if available at the time the DEIS is prepared.

## 20. Effects on the Use and Conservation of Energy Resources

As the Proposed Project is an energy project, it will clearly affect the use and conservation of energy resources. The Proposed Project is configured to provide increased electric output (as compared to the current operations) with natural gas as the primary fuel. Ultra low sulfur diesel fuel is proposed for a very limited time in the event of natural gas curtailments or shortages. The DEIS will discuss the Proposed Project's use of energy resources, its efficiency expectations, as well as its proposed outputs. In addition, the DEIS will discuss possible green building techniques, renewable/conservation energy strategies, and other potential opportunities to ways to help the community become more "green."

## Documents and References to Accompany the DEIS

- The Berrians Unit 1 Project Environmental Assessment Statement, December 2001.
- The new turbine project plan layout and description for Phase I and Phase II.
- Descriptions of the equipment to be used.
- The Title V Permit Modification Application covering both Phase I and Phase II.
- The Air Quality Modeling Protocol and results for both Phase I and Phase II.
- Prior cumulative impact air quality information relevant to this project. Air quality analysis may be referenced for other relevant projects in the NYC area.
- The Noise Assessment Results.
- The Environmental Justice Plan including the health outcome data analysis.
- Relevant Agency correspondence, such as:
  - FAA Notice of Proposed Construction 2/12/2008 including topographic map
  - New York State Office of Parks, Recreation and Historic Preservation letter dated March 10, 2008
  - NYPA letter dated May 13, 2008, requesting interested agency status.
  - PSC letter dated June 4, 2008, with initial comments and questions.
  - DEC letters to interested/affected agencies and responses.
- The list of firms and persons responsible for preparing the DEIS and accompanying project materials.