

SEQR  
617.21  
Appendix F  
State Environmental Quality Review  
NEGATIVE DECLARATION  
Notice of Determination of Non-Significance

DEC Project Number 4-4215-00054/00183

Date 6/16/2010

This notice is issued pursuant to Part 617 of the implementing regulations pertaining to Article 8 (State Environmental Quality Review Act) (the “Act”) of the Environmental Conservation Law.

The New York State Department of Environmental Conservation (the “Department”), acting as lead agency pursuant to the “Act”, has determined that the proposed action described below will not have a significant effect on the environment and that a Draft Environmental Impact Statement will not be prepared.

Name of Action: GE Schenectady Battery Manufacturing Plant, Building 66

SEQR Status: Type 1

Conditioned Negative Declaration: No

**Description of Action:**

GEMx Technologies, LLC (a division of General Electric Transportation) has selected Building 66 on the GE Energy Schenectady Main Plant campus in Schenectady, NY (The Main Plant) as the proposed location for development of a battery manufacturing facility (“Proposed Action”).

Building 66 is a 190,000 square foot facility which currently used by GE Energy for assembly operations in the manufacture of generators for electricity production. Assembly operations in Building 66 will be relocated to Building 273 at the Main Plant to consolidate GE Energy’s production facilities. The Building 66 interior will be renovated as necessary to accommodate the battery manufacturing equipment, while a façade upgrade and reconstruction of existing parking are proposed for the building exterior. Loading docks will be added to the building, and an underground utility line servicing the building will be installed.

The proposed plant will support an annual production volume of one million battery cells per year by 2012, increasing to ten million battery cells per year in 2015. The GEMx plant will be configured to produce a variety of batteries targeted for use in the automotive, off highway transport, and stationary power markets.

The proposed GEMx factory will have a vertically-integrated operation that processes powders, chemicals and simple components into packaged batteries. Over half of the equipment and floor space at the plant will be dedicated to processing ionic ceramics, which are a critical component of the GEMx battery's internal cells. The remaining production functions at the plant will involve automated and semi-automated assembly, welding, and electrical cycling of battery components. At full capacity the plant will be staffed with 350 skilled operators, working on three shifts.

**Location:**

Building 66 is located in the City of Schenectady, on the south side of the GE Main Plant adjacent to the Bellevue Bluff located over 40 feet above the Main Plant. Building 66 is located in an area designated Manufacturing and Warehousing Zone (M-2) under the City of Schenectady Zoning Code. GE Energy Schenectady Main Plant campus, 1 River Road, Schenectady, NY

Reasons Supporting this Determination: Pursuant to State Environmental Quality Review Act (SEQRA) regulations in 6NYCRR Part 617.7, the Department's Negative Declaration that the GEMx project will result in no significant adverse environmental impacts and impacts will be mitigated to the maximum extent practicable is based upon and relies upon the below listed application/project documents and full implementation and adherence to the project design/operation (including mitigation measures) and predicted impacts specified in these documents:

- “Environmental Assessment Form and Addendum, GEMx Technologies, LLC Battery Plant Schenectady, NY, Prepared for GE Transportation by MWH Americas, Inc.”, dated June 2010 (as revised) and transmitted by letter from Damian Foti, GE Energy, dated June 11, 2010 with included attachments/appendices;
- May 27, 2010 email from Damian Foti, GE Project Manager, additional clarification of mitigation implementation conditions;
- Letter from Christopher Headley, Battery EHS Leader, dated May 21, 2010 regarding GEMx Noise Abatement Measures Proposed Battery Plant SEQRA Evaluation;
- Letter from Christopher Headley, Battery EHS Leader, dated February 19, 2010 regarding GEMx Response to NYSDEC Comments on EAF and SEQRA dated February 11, 2010;
- Application for Air Sate Facility permit (“the Application”), signed by Kevin J Sharkey, General Manager, dated December 18, 2010, submitted by letter dated December 18, 2009 from Rich Malcolm, PE, MWH Americas, Inc, on behalf of GE (the Application includes subsequent revisions and comments provided to Department staff during Department review leading to the Draft permit);
- Draft State Facility Permit prepared by the NYSDEC, completed June 14, 2010.

**Construction Impacts:**

Construction that will continue for more than one year and involve more than one phase or stage. The nature of the project requires a phased approach, potentially lasting up to three years to accommodate renovation of an existing facility prior to installation of new manufacturing processes. Most construction will be completed inside the existing facility and operations will occur entirely on the GE Schenectady site, which will lessen the impact on adjacent properties and rights-of-way.

Temporary short term increases in noise levels and or air emissions as a result of construction equipment operating on the site are expected. However, the noise increases are predicted to be no greater than 5.6 dB(A) for one location and the remainder of the monitoring sites are predicted to be 3 dBA or less over current ambient noise conditions and high frequency backup alarm noise will be minimized by construction hour restrictions. Mitigation measures to reduce impacts which will be utilized include the proper use and maintenance of equipment and vehicles, operational construction hours restrictions, use of temporary barriers around louder (quasi-stationary) construction equipment if necessary and the relative temporary duration of the proposed outside construction activities.

Construction activities which occur outside of building 66 will be limited to the daytime hours of 7am to 9:00pm to avoid potential sounds/disturbances which could occur at nearby residential receptors especially during the summer nighttime hours when windows are prone to be open. Construction noise levels are expected to be similar to the daytime predicted facility operations noise levels, which based on the noise analysis, are not anticipated to be significant. The noise evaluation, provided in the EAF Addendum, was conducted to establish the existing ambient noise levels at various locations within the adjacent community and to predict what the potential noise levels would be at these locations as a result of new equipment and/or operations of the new battery plant. Noise impacts are discussed more fully on page 12 of this document.

Impacts associated with ground disturbances such as fugitive dust, erosion and stormwater will be controlled through the use of construction practices and implementation of an erosion and sediment control plan.

A facility construction/demolition waste assessment will be conducted for building 66 to identify asbestos, lead paint and any other regulated materials per existing on-site environmental health and safety procedures. Waste generated on site and demolition and construction debris will be properly collected and shipped to an existing solid waste facility.

Given the foregoing, for construction related activities the Department determination that the project will not result in significant adverse environmental impacts and impacts will be mitigated to the maximum extent practicable is based upon and relies upon the above listed application/project documents on page 2 and full implementation and adherence to the project design/operation (including mitigation measures) and predicted impacts specified in these documents. Additionally, these activities are temporary and will cease once the project is completed.

**Water Quality/Quantity:**

- Surface Waters

There are no state or federal protected waters or wetland resources on site within the vicinity of the project construction activities.

Stormwater runoff/construction activities - The current project site is surround by impervious areas (i.e., asphalt pavement), totaling approximately 16 acres, including roads, buildings and other paved surfaces. The reuse/modification of the site will not result in an increase in impervious areas or result in more than one acre of land being disturbed during construction. As

the construction areas to be renovated are currently impervious surfaces, the project will not result in a net increase of post construction runoff of stormwater over current conditions or result in changes to the quantity or quality of stormwater runoff.

Stormwater is currently, and will continue to be managed on-site. Stormwater is directed into stormwater catch basins and conveyed to the on-site Waste Water Treatment Facility for settling/treatment prior to discharge to the Mohawk River. In accordance with the State Pollutant Discharge Elimination System (SPDES) permit which has been issued by the Department for the GE facility, GE has established Best Management Practices which address pollution and sediment and erosion control measures (silt fence, seeding and mulching exposed areas, etc.) that will be employed throughout the construction phase of the project. Proper implementation of the sediment and erosion control plans throughout the duration of construction activities will prevent the transport of sediment off-site.

Based on the best management practices to control stormwater runoff, the small area of ground disturbance and no significant changes in the amount or quality of stormwater, it is not anticipated that construction or operation of the new plant will result in significant impacts to surface or ground waters.

Sanitary discharge from the building will continue to be discharged to the City of Schenectady municipal wastewater treatment plant. Existing office and process cooling operations from building 66 currently withdraw from and discharge to the Mohawk River approximately 183,000 gallons of water per day for once-through cooling (facility comfort). Revised operations/equipment associated with the relocation of current operations in building 66 and the new/revised use as a battery plant will eliminate this use and discharge. As a result, this represents an approximate 40% reduction in Mohawk River surface water usage over current operations.

Given the foregoing, the Department determines that the project will not result in significant adverse environmental impacts to either surface water quality or quantity and impacts will be mitigated to the maximum extent practicable is based upon and relies upon the above listed application/project documents on page 2 and full implementation and adherence to the project design/operation (including mitigation measures) and predicted impacts specified in these documents.

- Ground Waters

The property is served by municipal water and sewer from the City of Schenectady and will not require the use of ground water (from new developed on-site sources) for potable water or require on-site subsurface wastewater treatment/disposal.

While total water usage (ground/municipal and surface/river sources) will be reduced, it will result in an increased use of municipal potable water from the City of Schenectady water supply of approximately 100,000 gallons per day. The City of Schenectady has indicated that it has adequate capacity to provide potable water to the facility. GE has also mitigated the amount of water usage by looking at manufacturing design processes which recycle and or reduce the quantity of water required.

Additionally while the project is located near the Rotterdam Aquifer Overlay Area, designated as a Critical Environmental Area (CEA), and is over Zone 3 of the Great Flats Aquifer, it is not anticipated that construction or operations of the new plant will result in any significant adverse impact to the CEA for the following reasons:

- Manufacturing supplies and chemicals associated with the battery manufacturing process will be stored indoors in approved containers with adequate containment to prevent leaks or spills.
- The GE facility has implemented a Spill Prevention Control and Countermeasure Plan (SPCC) as well as Best Management Practices (BMPs) for the entire site operations which are designed to ensure the safe storage, use and disposal of chemicals and other such materials. Proper implementation of the SPCC will prevent materials from entering drains or otherwise coming into contact with surface waters or precipitation where they could enter ground or surface waters.
- There will be no direct floor drain discharges from Building 66 to the municipal or on-site wastewater treatment facility.
- Stormwater during construction as discussed above will be managed through use of standard sediment and erosion control methods to prevent runoff from the site during construction.

Given the foregoing, the Department determines that the project will not result in significant adverse environmental impacts to ground water quality or quantity and impacts will be mitigated to the maximum extent practicable is based upon and relies upon the above listed application/project documents on page 2 and full implementation and adherence to the project design/operation (including mitigation measures) and predicted impacts specified in these documents.

#### **Air Quality:**

New processes associated with the proposed operation include natural gas fueled process furnaces, plasma spray, and assembly operations to be located in building 66. Potential sources of regulated air pollutants include Oxides of Nitrogen (NOx), Particulate Matter (PM), Volatile Organic Compounds (VOC's), Carbon Monoxide (CO), Hazardous Air Pollutants (HAP's), Hydrogen Chloride gas and other fugitive emissions.

The construction and operation of the emission sources requires an Air State Facility (ASF) Permit from the New York State Department of Environmental Conservation pursuant to 6NYCRR Part 201. GE is also subject to regulation as a Title V facility and will be required to modify its existing Title V permit within one year of issuance of the ASF permit to reflect the new emission sources.

As part of GE facility-wide operations under the current Title V permit, capping limits are included in the permit which limits HAP emissions to a maximum of 18,000 lbs/yr for individual HAPs and 48,000 lbs/yr for combined HAP emissions. Based on emissions reports from 2009, the GE facility emissions of HAPs totaled approximately 300 lbs/yr. The additional HAP emissions from the battery plant are projected to contribute an additional 3 tons or 6,000 pounds per year. While this will result in a projected increase of facility-wide HAP emissions to 6,300 lbs annually, the projected HAP emissions once the battery plant becomes fully operational will

still be well below the existing permitted HAP emission limits which have been established to protect human health and the environment.

In addition to emissions caps/limits at the facility-wide level, the battery plant will be subject to several additional state and or federal regulations for Criteria Pollutant Emissions of NO<sub>x</sub>, PM, VOC, CO and SO<sub>x</sub>.

NO<sub>x</sub> - While actual projected emissions (with control) of NO<sub>x</sub>, are expected to be 24.8 tons per year (TPY), the un-controlled project emission potential (actual emissions scaled up to represent the operation of the source full time – 8,760 hours per year) exceeds the regulatory threshold of 40 TPY for review/compliance under 6NYCRR Part 231-2 New Source Review (NSR) and Prevention of Significant Deterioration (PSD) for this non-attainment pollutant. Therefore, GE has requested that as a permit condition, NO<sub>x</sub> have a capping limit of 39.5 tons per year to prevent triggering these thresholds. To mitigate for potential impacts and meet capping/regulatory limits, all process equipment will be equipped with low-NO<sub>x</sub> burners (LNB) where available to minimize NO<sub>x</sub> emissions. Compliance with the proposed cap will be demonstrated through monthly calculation of NO<sub>x</sub> emissions and determination of the rolling 12 month NO<sub>x</sub> emissions.

CO - Emissions are not expected to be significant as unrestricted emission potential for CO is 44.1 TPY, below the 100 TPY applicability threshold for review/compliance under the Title V regulations.

Particulate matter less than 10 microns (PM-10) - While the projected actual emissions are expected to be 10.7 TPY, the unrestricted emission potential exceeds the PSD regulatory applicability threshold of 15 TPY. Therefore, a capping limit of 14 TPY is included in the ASF permit to keep PM-10 emissions below the PSD review/compliance limits. Compliance with the proposed cap will be demonstrated through monthly calculation of PM-10 emissions and determination of the rolling 12 month PM-10 emissions, tracking of fuel usage, maintaining negative pressure zones in process areas where dust/particulate material is used/produced and use of dust collection and filtering systems to capture and minimize fugitive dust emissions.

Particulate matter less than 2.5 microns (PM-2.5) - While the projected actual emissions can't be quantified at this time, the unrestricted project PM-2.5 emission potential exceeds the 10 TPY applicability threshold for NSR and PSD; therefore, a cap on PM-2.5 emissions of 9.5 TPY is being proposed and will be included in the ASF permit to keep emissions below these regulatory thresholds. Compliance with this cap will be demonstrated through monthly calculation of PM emissions and determination of the rolling 12 month average PM emission utilizing appropriate emission factors. The actual emission factors are to be determined after the process equipment specifications are finalized.

VOC - Emissions are not expected to be significant as unrestricted emission potential for VOC is 22.4 TPY, significantly below the 40 TPY applicability threshold for review/compliance with regulatory criteria under 6NYCRR Part 231-2 (New Source Review). While actual predicted and potential emissions are not expected to be significant, a thermal oxidizer control will be installed to minimize VOC emissions.

SO<sub>x</sub> – Emission calculations have been included in the air analysis, however, as projected actual emissions and potential emissions are expected to be 0.46 TPY and 0.50 TPY respectively, SO<sub>x</sub> is well below the Title V regulatory threshold and is not expected to be a significant contributor of air pollutants.

Given the foregoing compliance with the applicable state and federal regulatory standards/limits for the various air pollutants, and as established in the conditions of the draft Air State Facility permit prepared by the department for the construction and operation of these emission sources, it is anticipated that facility emissions will remain below the National Ambient Air Quality Standards that have been established to protect human health and the environment and the project will not result in significant adverse environmental impacts and impacts will be mitigated to the maximum extent practicable is based upon and relies upon the above listed application/project documents on page 2 and full implementation and adherence to the project design/operation (including mitigation measures) and predicted impacts specified in these documents.

**Odors:**

GE identifies in the EAF supplemental addendum various chemicals that would be used and stored in sufficient quantities at the facility and production by-products or emissions that have the potential to result in odors. These sources include various powder compounds to be used in the manufacturing process and emission of Hydrogen Chloride (gas) as a by-product.

Information obtained from the Material Safety Data Sheets (MSDS) for the various compounds to be used in the production process indicates that the majority do not have any odor. As most of the compounds are in powder form or would release odors as a result of fugitive dust (particulate) emissions, those that do have an odor will be mitigated through on-site controls. Fugitive emissions will be controlled by use of process area ventilation systems designed to maintain negative pressure zones within areas having the potential to create dust thus eliminating or greatly reducing potential odors. Other mitigation measures include routine use of a house vacuum system with cyclone/filter for the collection and capture of fugitive dust. To prevent spreading of dust to surrounding areas and or exterior of the building, powder processing and storage areas will be equipped with air showers for personnel.

Hydrogen Chloride (HCL), included as a HAP in the estimated air emissions calculations, has an irritating, pungent odor. Potential odors from the release of HCL will be mitigated through the use of a scrubber (control equipment installed in the process to remove HCL) which is designed to effectively remove at least 90 percent of the HCL emissions prior to their release to the atmosphere. To ensure the scrubber is operating efficiently within the limits allowable by the DEC as established in the Draft Air State Facility permit, a monitoring device that measures and records the scrubber operating parameters will be installed. If during operation the monitoring device identifies that the scrubber is not working properly, an alarm system will serve to notify employees that actions to correct scrubber condition and possibly shut down the process are required. If the system cannot be brought under control quickly a shutdown of the process which generates HCL is required, it is anticipated that this could occur within one hour of the initial alarm notification.

Since HCL is a by-product in the production process, it is estimated, at a maximum, that 4.4 pounds of HCL would be produced per hour. Once the emissions travel through the scrubber, 0.44 lbs of HCL per hour would remain in the emissions after 90 percent removal and would be released to the atmosphere through rooftop vents. An odor threshold of 7.0 milligrams per cubic meter ( $\text{mg}/\text{m}^3$ ) has been established<sup>1</sup> for HCL, which represents the lowest concentration of the chemical in air that people can smell. With the scrubber working effectively, the maximum short term impact (1 hour) concentration of HCL predicted to be released would be  $0.09 \text{ mg}/\text{m}^3$ , well below the odor threshold. The maximum short term impact analysis equation assumes a stack height of 12 feet above the building and a minimum property line distance of 100 feet. This analysis determines an appropriate stack height and distance from a receptor group to ensure proper dispersion of the air emissions as a measure of safety. It should be noted that the GE southerly property line at the railroad is greater than 600 feet from this stack/emission point with the nearest residential property line being greater than 900 feet away, providing for a further measure of safety and buffer as the HCL concentration would decay to a lower level over this distance.

Even if the scrubber should fail entirely, resulting in the 4.4 pounds per hour of HCL by-product being released through the vent, this would result in a maximum short term impact concentration of  $0.72 \text{ mg}/\text{m}^3$  HCL released, still well below the odor threshold at which the chemical would be distinguished by smell. As indicated above, however, the scrubber operations will be monitored and any failure should not result in on-going release of HCL for greater than one hour before it is remedied or the process is shut down.

Based on the predicted maximum short term impact analysis, the relatively low concentration of HCL compared with the odor threshold, monitoring and operations plan to remedy a failure of the control scrubber and control/mitigation measures to limit fugitive emissions which could result in odors as established in the conditions of the draft Air State Facility permit prepared by the department for the construction and operation of these emission sources, the Department determination that the battery plant emissions will be protective of human health and the environment and will not produce odors at any levels that will cause significant adverse air impacts and impacts will be mitigated to the maximum extent practicable is based and relies upon the above listed application/project documents on page 2 and full implementation and adherence to the project design/operation (including mitigation measures) and predicted impacts specified in these documents.

#### **Wildlife Resources:**

According to Department records there are no known State listed threatened or endangered species within the immediate vicinity of the project site. The site is currently developed, having existing building or parking areas and renovation will not significantly impact any new or undeveloped areas. The Department determination that project will result in no significant adverse environmental impacts to vegetation, fauna, or other wildlife and impacts will be mitigated to the maximum extent practicable is based and relies upon the above listed application/project documents on page 2 and full implementation and adherence to the project

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<sup>1</sup> U.S. Department of Health and Human Services. Hazardous Substances Data Bank ([HSDDB, online database](https://www.ncbi.nlm.nih.gov/toxicology/hhsdb/)). National Toxicology Information Program, National Library of Medicine, Bethesda, MD. 1993; referenced found at <http://www.epa.gov/ttn/atw/hlthef/hydrochl.html>

design/operation (including mitigation measures) and predicted impacts specified in these documents

**Visual & Archeological/historical:**

The site is located within an area of archeological/historical significance however, impacts to historic/archeological resources will not be significant as the area of disturbance has undergone previous land disturbances as a result of site operations for over 100 years and most of the renovations will occur to the interior of the structure.

As the project will require minor modifications to the building facade, surrounding grounds, roof-top (new stacks expected to be a maximum height of 12 feet above the existing rooftop) and lighting, GE has provided a Visual and Historical Site Impact Survey of nearby resources of significance to better evaluate impacts to these resources. The survey identified eleven sites which include structures listed on the National Historic Register, Mohawk River and scenic bike path north of the plant, Bellevue Little League Field and the Hillhurst Park south of the plant. The results of the survey identified that building 66 is visible from the bike path, little league field, Hillhurst Park and Building 5/37 (a National Historic register listed site) on the GE Schenectady campus.

The survey further demonstrates that the project will not have a significant impact to these resources and or impacts will be mitigated to the maximum extent practicable as follows:

- There will be no significant alterations to the exterior of the existing building 66 structure;
- The project will utilize various lighting designs (dark sky compliant fixtures, photocell and time-clock automatic controls, dock areas provided with separate manual control to turn off when not required, low level bollards to illuminate walkways) to reduce light pollution impacts;
- Mitigation is provided by direct line of sight: line of sight particularly from adjacent residential areas being screened by existing structures, topography and/or foliage or lessened by reduced perspective due to distance blocked.

Given the foregoing, the Department determination that the project will result in no significant adverse environmental impacts on any listed historic site or viewshed of significance within the surrounding community including nearby residences and impacts will be mitigated to the maximum extent practicable is based and relies upon the above listed application documents on page 2 and full implementation and adherence to the project design/operation (including mitigation measures) and predicted impacts specified in these documents.

**Traffic:**

The proposed project will result in the potential for 16 to 20 truck trips per day (deliveries and shipments) which represents an increase of 9 to 13 trucks over the current baseline truck traffic of 7 trips/day associated with building 66 operations. It is anticipated that the new operations in building 66 will also result in additional employee commuter traffic from a baseline of 308 vehicles (total of all 3 shifts) to a potential of 426 vehicles. Operations of the new battery manufacturing plant has the potential to increase vehicles by 118 (38% increase in traffic at building 66) which represents only a 3% increase site-wide for the GE Schenectady campus.

GE provided an evaluation of the potential impact that the projected increased traffic would have on the main commuter spurs (I890 & Rice Road) to the GE Campus using the most recent vehicle count field study available from the NYS DOT website. Using data for the year 2007 estimated Annual Average Daily Traffic (AADT), values for the 912W -Rice Rd Extension Campbell Road to I890 Ramps road segment shows that the addition of 300 vehicle trips per day along this spur would represent a 3.2% increase in daily trips. Likewise, an additional 300 vehicle trips along the I890 Exit 4B to Exit 2A and I890 Exit 4C to Exit 4B road segments represents an increase of 1.3 % and 1.32% respectively.

Given that traffic patterns for I890 (constructed late 60's) and Rice Road spur were designed upon higher occupancy at the GE campus than exist currently (approximately 28,000 employees in early 70's to approximately 4,000 currently) or will exist after the proposed operations at Building 66 reach full potential and vehicle trips will be spread over a period of three working shifts, the percent increase in traffic is not significant and there will be no significant impact to traffic patterns or flow as a result of this project.

The NYS Department of Transportation has also reviewed the SEQR documentation and concurs with the characterization provided in the EAF addendum - this project, in addition to the current volumes will not negatively affect the overall operation of the existing facility.

The Department determination that the GEMx project will not cause significant adverse truck noise impacts and noise impacts have been mitigated to the maximum extent practicable is based upon and relies upon the project application documents listed above and on Page 2 above and the implementation of and adherence to the project design/operation (including mitigation measures) and the predicted noise level increases to the adjacent residences along the Bellevue Bluff (Campbell Avenue) community as specified in these documents.

### **Energy Use and Conservation/ Greenhouse Gases:**

The new facility will use electricity and natural gas to power its production. Greenhouse Gas (GHG) emissions and energy have been evaluated for the new manufacturing process at building 66 in accordance with DEC policy and looked at the following five categories: direct emissions from stationary sources, direct emissions from non-stationary sources, indirect emissions from stationary sources and indirect emissions from mobile sources.

Heat to Building 66 is provided by the central steam plant and is the major contributor of direct stationary source GHG emissions (Carbon Dioxide CO<sub>2</sub>) currently associated with building 66 operations. CO<sub>2</sub> as the result of burning natural gas to heat the building amounts to approximately 2,822 metric tons per year. Operation of the new battery manufacturing plant is projected to increase stationary source CO<sub>2</sub> emissions to 61,025 metric tons per year. This increase is the result of a change in production processes within the facility.

Direct non-stationary sources are those associated with fleet vehicles (gasoline, diesel, propane and electric powered) operating at the site in support of building 66 operations. Current CO<sub>2</sub> emissions are estimated at 18 metric tons per year and as the new facility operations is expected to use only electric vehicles, the proposed direct CO<sub>2</sub> emissions from non-stationary sources is expected to decrease to 1 metric ton per year.

Indirect emissions from stationary sources are associated with electricity (produced off-site) consumption associated with building 66. Current CO2 emissions are estimated to be 3,774 metric tons per year and the proposed indirect CO2 emissions from stationary sources is expected to increase to 14,084 metric tons per year. The increase in electricity consumption is associated with the use of various ovens, other thermal operations and material handling. The facility itself will be renovated to meet Leadership in Energy and Environmental Design (LEED) standards and certification. LEED certification requires building design and strategies which conserve energy, conserve and use recycled materials and other GHG reduction measures throughout design and construction.

Indirect GHG emissions from mobile sources are associated with CO2 emissions from employee vehicle commute trips and commercial delivery trips. Current CO2 emissions in this category are estimated to be 1,042 metric tons per year and the proposed in-direct CO2 emissions from mobile sources is expected to increase to 1,962 metric tons per year.

GHG emissions from waste disposal were also evaluated. Currently, approximately 105 tons of wastes are generated by building 66 operations. Using the EPA's emission factor for waste disposal, current operations result in the emission of approximately 335 metric tons per year of CO2. It is expected that the new operations will increase the amount of waste generated to approximately 200 tons per year, or a CO2 equivalency of approximately 637 metric tons per year of CO2. This figure represents 100 percent of the waste stream generated being land filled and does not take into account waste streams which could potentially be recycled or reused. GE plans to explore various recycling options when operations are underway and actual waste streams (scrap materials) can be more fully characterized. It is expected that some form of recycling and reuse of waste can be achieved which will further reduce the equivalent amount of CO2 that would otherwise be generated by land filling of the material.

In looking at all the categories identified as sources of CO2 GHG, the new manufacturing facility will result in a proposed CO2 emission of 77,709 metric tons of carbon per year or a net change of +69,718 metric tons of carbon per year over current operations at building 66. While this is a net increase, measures such as site selection to redevelop existing structures/infrastructure, mitigation measures and design features incorporated into the project reduced the total amount of CO2 GHG that may otherwise be produced, such as the case with construction in a heavily vegetated/forested area or areas without existing infrastructure. Examples of these factors include the following:

- Reuse of an existing manufacturing facility instead of development of a green field (undeveloped) location reduces the need for extensive site clearing, grading and excavation which saves a potential 22.2 pounds of CO2 per gallon of diesel fuel used by construction equipment.

Rehabilitation of the existing building site verses construction on a 16 acre forested/vegetated area saves approximately 1,805 metric tons of CO2 emissions in the form of forest preserved from deforestation; likewise development of a non-forested cropland area, such as using an alternative "open" area on the GE campus saves approximately 32.3 metric tons of CO2 emissions saved in the form of preservation of non-forested land equivalent to cropland.

An undeveloped site would also likely have required additional grading/clearing/excavation to install new utilities and road infrastructure as well as use of concrete for structural foundations which would contribute additional CO2 emissions for mining, processing and transport of materials to the site.

- The facility is being design to meet Leadership in Energy and Environmental Design (LEED) standards. Specific GHG mitigation measures associated with these standards which will be employed include energy efficient lighting, heating, and water fixtures and use of building materials with recycled content, as well as collection and recycling of waste materials throughout the construction process. These measures in addition to reducing GHG are expected to result in energy savings over current/conventional systems.
- The purpose of the facility is to manufacture a variety of batteries (energy storage systems), targeted for use in automotive, off-highway transport (train), and stationary power markets. Use of these battery products will offset power generation by the combustion of fossil fuels. In most cases, off-setting diesel power sources which contribute 22.2 pounds of CO2 per gallon of diesel fuel consumed. GE estimates a 10% fuel savings is expected for locomotives utilizing the battery technology.
- GE has also committed on a company-wide scale to reduce GHG's and has established targets, one of which is energy efficiency of company operations. A goal set by GE is to reduce its absolute greenhouse gas (GHG) emissions by 1 percent worldwide by 2012. This is a major goal, given that GE projects that GHG emissions would otherwise have grown substantially — by approximately 30% — based upon current business growth projections. GE states they have also committed to reducing the intensity of their GHG emissions 30% by 2008 and improving energy efficiency 30% by the end of 2012 (also versus 2004 levels). While these mitigation measures are not specific to the local GE Schenectady campus and building 66 project in particular, GHG emissions are likewise not only a local or regional issue for that matter but a global issue.

While GHG emissions would increased over current operations at building 66 as a result of this project, mitigation measures achieved by site selection, construction practices and operation designs of the new battery manufacturing facility and the goals set by GE to reduce emissions throughout their companies globally is sufficient in meeting the goals of reducing GHG emissions.

Overall, the construction/design and operations of the new battery plant together with the intended end use of these batteries being produced as discussed, results in an efficient use and conservation of energy resources. The Department determination that the project will result in no significant adverse environmental impacts in energy use and greenhouse gases and impacts will be mitigated to the maximum extent practicable is based and relies upon the above listed application documents and full implementation and adherence to the project design/operation (including mitigation measures) and predicted impacts specified in these documents

**Noise:**

To determine potential noise impacts, using the Department's guidelines for Assessing and Mitigating Noise Impacts, noise level measurements were conducted by Tech Environmental, Inc. (Appendix D Noise Impact Evaluation of the January 2010 (revised May 2010) SEQR EAF Addendum), to determine current baseline noise levels in the surrounding area of the proposed site. Long term (continuous 24 hour) measurements were taken at the nearest GE property boundary south of Building 66 near the base of the Bellevue Bluff (long-term monitoring site) and three short term monitoring stations were established to record measurements at nearby residential areas in the Bellevue community. These short term monitoring sites were located at the following locations:

Site #1 - 1471 Broadway (Broadway Used Tires) adjacent to the backyard of the residential home overlooking the GE property; Daytime Ambient Leq 61.8 dBA - Nighttime Ambient Leq 56.2 dBA

Site #2 - Jim's Sunoco parcel adjacent to and representing residential building #1533 & 1535 Broadway overlooking the GE property; Daytime Ambient Leq 60.7 dBA - Nighttime Ambient Leq 52.9 dBA

Site #3 - Next to little League Field at end of 4<sup>th</sup> Street off of Campbell Ave representing nearest home on 4<sup>th</sup> Street and the little league park area; Daytime Ambient Leq 45.1 dBA - Nighttime Ambient Leq 40.9 dBA

Site #3A - Residential area located at Campbell and 2<sup>nd</sup> Avenue, added as additional site for modeling purposes but was not one of the baseline monitoring sites at which actual ambient sound levels were measured. Since actual recorded measurements were not done for this location, it was considered that this location would experience similar ambient sound levels/noise conditions as site #3 above and therefore the ambient values of 45.1 dBA daytime and 40.9 dBA nighttime measured at site #3 were used as surrogate values for this location.

Results of the baseline monitoring were established for both daytime and nighttime hours and revealed that the dominant sources of noise include traffic along Broadway and Campbell Avenue, military plane flyovers and freight train activity on the adjacent rail line in between the GE site and Bellevue Bluff neighborhood.

The sources of noise projected to be generated by the proposed Building 66 Battery Manufacturing facility include vehicle traffic, truck traffic entering, leaving and operating within the site (truck maneuvering, back up alarms, loading and unloading at the facility) as well as the manufacturing facility itself including ventilation, air conditioning, emergency generator and roof-top and other production equipment for the building. These sound sources were specified in quantity, location and noise emission levels assuming a worst-case scenario that all pieces of equipment would be operating simultaneously and at full load for the new production plant, Tech Environmental, Inc. conducted a noise modeling analysis using the Cadna-A acoustic model. This is a sophisticated 3-D model for sound propagation and attenuation which was used to predict the sound levels generated from the future facility at the three residential receiver (short term monitoring) sites. To further replicate worst-case scenarios, the model assumed a ground-

based temperature inversion, such as would occur on a calm clear night when sound propagation is at a maximum, the model ignored any foliage attenuation from trees and shrubs due to leaf off conditions in winter and used a hard ground reflective surface to represent ground conditions for the majority of the GE facility site.

The results of the noise study found the lowest existing/ambient daytime and nighttime sound pressure levels (Leq) of 45.1 decibels (dBA) and 40.9 dBA, respectively, were measured at monitoring site #3, located behind the residence on 4<sup>th</sup> street, in the vicinity of the little league field. This monitoring site is located the furthest distance from the facility and also Campbell Avenue of all the monitoring sites and thus likely to be less influenced by traffic noise. After review of the initial sound data, it was determined that the residential area between sites 2 and 3 may not be fully represented by the model predicted values using the existing monitoring sites and an additional site 3A was added at Campbell and 2<sup>nd</sup> Avenue (residence near bluff overlooking GE). The reason being that the homes in this location are closer to the facility than site 2 yet background sound levels are likely not as impacted by noise from road traffic travelling along Broadway such as found at site 2. Since actual ambient monitoring data was not established for site 3A a conservative approach was taken and the lower daytime and nighttime ambient background levels measured at site 3, being 45.1 dBA and 40.9 dBA respectively, were used as surrogate values. The results of the model show this site to have a higher increase in the existing ambient sound pressure levels than the other monitoring locations. The daytime sound pressure level for this site is predicted to be 48.1 dBA, which represents a 3 dBA increase over the ambient and the nighttime sound level was predicted to be 46.5 dBA, a 5.6 dBA increase.

Increases of 3-6 dBA may have potential for adverse noise impact only in cases where the most sensitive receptors are located. Site 3A as a residential area may be considered a sensitive receptor and the increase in noise pressure is approaching the upper limit of of 6 dBA for potential adverse impact. The remaining monitoring sites 1, 2 and 3, with the exception of the nighttime value predicted for site 3, all have predicted increases to ambient daytime and nighttime values of less than 3 dBA. Monitoring site 3 is predicted to have a nighttime sound pressure level of 44.3 dBA, which is a 3.4 dBA increase over the ambient value of 40.9 dBA measured for this site.

This means that: 1) the implementation and adherence to the project design/operation (including mitigation measures) and the predicted noise level increases to the adjacent residences along the Bellevue Bluff (Campbell Avenue) community as provided in the project application documents listed on Page 2 above will keep the highest predicted project maximum noise levels at or below 3 dBa for most sites and time periods and below 6 dBa for one site (3A); 2) at site 3A the predicted sound pressure level of 46.5 dBA resulting from the implementation and adherence to the project design/operation will have a response criteria classified as being quiet<sup>2</sup>. A comparable sound source range would be that of a living room/bedroom being approximately 40 dBA and light traffic at 50 feet (50 dBA) all having response criteria identified as quiet and 3) for the monitoring sites 1, 2 and 3 the 3 dBA increase in noise levels is generally defined as being just perceptible to the human ear.

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<sup>2</sup> Reference taken from NYS Department of Environmental Conservation, Division of Environmental Permits Program Policy document: Pg 19, Table E, Assessing and Mitigating Noise Impacts, dated 10/06/2000 and revised 02/02/2001.

The ambient background noise levels, predicted facility noise levels, combined (total) predicted sound level at the receptors and the increase over existing ambient levels are given in the Noise Study at Table 7A.

In addition to looking at increases in ambient noise level values as discussed above which are based on an Leq equivalency level, sharp high frequency and high intensity noises, such as back-up alarms required to be used on machinery, can create noise impacts to sensitive receptors, particularly at nighttime, and therefore these have been evaluated as part of the SEQR. Since trucks and other mobile equipment will be using the loading/unloading docks located on south-westerly side of the facility closest to the residential receptors of the Bellevue neighborhood adjacent to the GE site to noise from high frequency back-up alarms, while intermittent, can be significant due to their pure tonal nature. Although most deliveries are likely to occur between the hours of 7AM to 9PM the GEMx facility will increase truck activity at Building 66 over ambient. The implementation and adherence to the project design/operation (including mitigation measures) and predicted sound levels provided by GE below will serve to keep such noise emissions below the level of significant adverse and mitigate to the maximum extent practicable. This also keeps the project consistent with the existing noise character of the site and adjacent residential area. In a letter from Christopher Headley, Battery EHS Leader, dated May 21, 2010, and per the EAF Addendum documentation (June 2010, Part 3 Section 6, beginning pg 19, specific references on pages 22 & 23), GE has agreed to mitigate these impacts as follows:

- Retrofit its equipment, or purchase vehicles, intended for use in the operation of building 66 with alternative OSHA approved backup alarm notification devices, such as “Smart Alarms”.
- Allow no more than two trucks equipped with standard audible backup alarms, to back into the west side loading docks simultaneously, during the hours of 10:00 PM to 7:00 AM.
- Limit outside construction activities (discussed more fully on page 3 of this document) to the hours of 7:00 AM to 9:00 PM.

Additionally, GE has agreed (per May 27, 2010 email from Damian Foti GE Project Manager) to additional mitigation implementation conditions which embody the above May 21, 2010 letter and project design/operations identified in the application documents; such measures specifically identified are as follows:

1. All newly acquired or existing equipment (specifically fleet vehicles, material handling equipment, and mobile maintenance equipment), which is owned and or leased and or equipment which is operated and under the direct control of GE Transportation or GEMX, LLC, planned for use in connection with the Proposed Action, shall be retrofitted or otherwise equipped with an alternative type of back-up alarm notification device, as per agreement with GE by letter dated May 21, 2010. This provision shall be implemented and effective within six (6) months.
2. Truck operations on the west side loading docks of Building 66 during Battery Plant operations will be restricted as follows between 10:00pm and 7:00am

- a. No more than two trucks equipped with standard audible back-up alarm signals will be allowed to back into the loading docks simultaneously.
  - b. In accordance with 6 NYCRR 217-3, trucks at the loading dock will be prohibited from idling for more than five minutes at a time except as otherwise permitted by 6 NYCRR Subpart 217-3.3
3. It is predicted that sound pressure levels associated with the Proposed Action will not exceed the model Predicted Maximum Facility Sound Level (dBA) at each receptor monitoring location, as set forth in the EAF Addendum for the Proposed Action.

Should a complaint be made to the Department and substantiated regarding noise from the Proposed Action, in cooperation with the Department, GE shall conduct studies/evaluations, as appropriate, to determine if additional mitigation measures are warranted.

4. Outside construction activities associated with the Proposed Action shall not commence prior to 7:00am or occur after 9:00pm, as per agreement with GE by letter dated May 21, 2010.

Increases in ambient sound levels are also anticipated during the construction phase of the project. However, it is expected that increases to ambient levels as a result of construction related activities (operation of trucks and equipment to complete minor excavation and foundation work, steel erection and finish work) will be similar to the facility noise levels predicted by the model, resulting in no significant increase over ambient levels or adverse effect to receptors. Further, this noise will be limited in duration by the construction period of approximately 12 months and mitigated by no nighttime construction equipment activity between the hours of 7:00 AM to 9:00 PM. In addition, GE has agreed to further mitigation by the use of best efforts to eliminate or mitigate backup alarms during this period consistent with OSHA and DOT regulations.

The Department determination that the GEMx project will not cause significant adverse noise impacts and noise impacts have been mitigated to the maximum extent practicable is based upon and relies upon the project application documents listed above and on Page 2 above and the implementation of and adherence to the project design/operation (including mitigation measures) and the predicted noise level increases to the adjacent residences along the Bellevue Bluff (Campbell Avenue) community as specified in these documents.

**Public Health:**

The GE Schenectady Campus site has been classified by the Department as a Class 2 inactive Hazardous waste site due to historic manufacturing processes being conducted on the 640 acre site for over 100 years. GE has conducted extensive sampling and analysis to characterize soil, groundwater, surface water, air and other related site media in accordance with a Order on Consent between GE and the Department. The Order required sampling, analysis and reports which resulted in the Department issuing a Site Remedial Record of Decision (ROD) which summarized remedial actions for the entire site. These include soil management (evaluation of soils generated on site for re-use, recycling or disposal as appropriate) and other aspects associated with development on the site.

Project excavations and soil disturbances as a result of renovations to Building 66 consist mainly of cut and fills associated with site grading, installation of loading docks, utilities and renovation of parking areas. While none of the areas of excavation and or ground disturbance around building 66 require remedial action pursuant to the ROD, GE will follow the prescribed soil characterizations for proper use and or disposal, control stormwater during construction activities and employ sediment erosion and sediment controls.

Given the foregoing, the project is not expected to have any significant adverse impact to public health as a result of cross-contamination leaving the site or otherwise impacting public health or the environment.

**Community Character:**

Building 66 is located within the existing Industrial GE plant, located in the City of Schenectady in an area currently zoned as Manufacturing and Warehousing (M-2). Operations of the battery plant will be consistent with this existing zoning. The project will result in the creation of approximately 150 jobs during construction and 350 jobs once the project is completed.

GE has co-existed and operated in the community as an industrial manufacturing facility at this site since 1886. Building 66 was constructed in 1966 after the original building, constructed in 1907, was demolished in 1965. To that end and as discussed in the sections above, no significant visual and noise changes/impacts are anticipated, by the conversion of Building 66 to a battery manufacturing plant, which would adversely affect the community character of Bellevue. The Department determination that the project will result in no significant adverse environmental impacts to community character and impacts will be mitigated to the maximum extent practicable is based upon and relies upon the above listed application documents and full implementation and adherence to the project design/operation (including mitigation measures) and predicted impacts specified in these documents.

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Authorized Official in Lead Agency:

William J. Clarke  
Regional Permit Administrator  
NYSDEC, Region 4

/S/

\_\_\_\_\_  
Signature

6/16/2010

\_\_\_\_\_  
Date

Address:  
1130 North Westcott Road  
Schenectady, New York 12306

Telephone Number: (518) 357-2069

**For Type I Actions and Conditioned Negative Declarations, a Copy of this Notice Sent to:**  
Commissioner, Department of Environmental Conservation, 625 Broadway, Albany, NY 12233;

Mayor, City of Schenectady; Ray Gillen, Chairman/CEO, Schenectady Metroplex Development Authority; Empire State Development - Strategic Business Division, Michael F. Morse; New York State Energy Research and Development Authority