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Warwick ES3
Warwick, NY

Decommissioning Plan

September 28, 2020

Revision Status

Rev	Date	Description	Prepared	Checked	Approved
0	09/28/2020	Issued for Review	SF	BK	RG
1	10/07/2020	Revised per ESRG comments. Issued for Review	SF	BK	RG
2	10/26/2020	Changed from ES1 to ES2. Issued for Review	SF	BK	RG
3	10/28/2020	Changed from ES2 to ES3. Issued for Review	SF	BK	RG
4	11/18/2020	Updated to include cost for decommissioning. Issued for Review	SF	BK	RG

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1 EXECUTIVE SUMMARY

1.1 Purpose

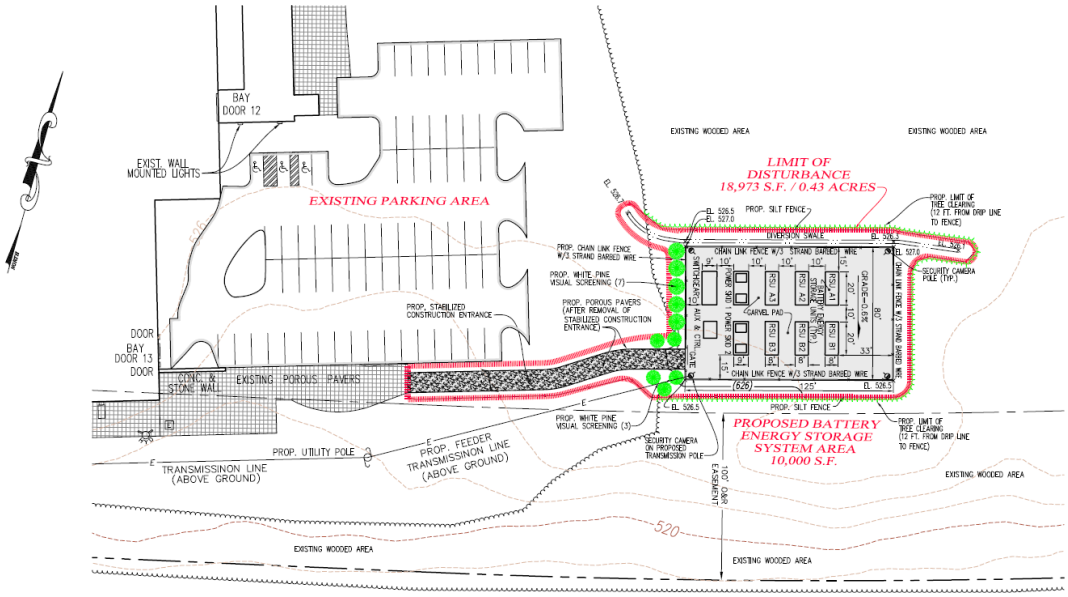
The purpose of this document is to provide an overview of activities that will occur during the decommissioning phase of Convergent's Battery Energy Storage System (BESS), Warwick ES3 facility, located in the Village of Warwick, NY within the Orange and Rockland (O&R) service territory. Activities related to the restoration of land, the management of materials and waste will be considered in this document including:

- Equipment Dismantling and Removal
- Removal and Recycling of the Battery Energy Storage Modules
- Removal of the Ancillary Electrical Systems
- Removal of Equipment Pads, Supports, Gravel and Perimeter Fence
- Site Restoration
- Environment Impacts

This plan is based on current best management practices and procedures. This plan will be updated as necessary based on new standards and emergent best management practices at the time of decommissioning. Permits will be obtained as required and notification will be given to stakeholders prior to decommissioning.

1.2 Facilities Description

The Warwick ES3 BESS with total current nameplate rating of 4 MW / 17.9 MWh will be comprised of two identical energy storage blocks, with each block consisting of three (3) Reservoir Storage Units (RSU) connected to one Reservoir Inverter Unit (RIU) manufactured by General Electric (GE). The facility will also include an auxiliary transformer and switchboard, and a metal enclosed switchgear. A site plan and conceptual layout of the facility is provided below.



2 DECOMMISSIONING OF THE FACILITY

At the time of decommissioning the installed equipment will be removed, repurposed, disposed of and recycled where possible. The facility will be restored to a state similar to its preconstruction condition. The removal of equipment and material will be done in accordance with the applicable regulations and manufacturer recommendations. All necessary permits will be acquired and any Authorities having Jurisdiction will be notified.

Prior to decommissioning, the facility will be deenergized and disconnected from the grid in coordination with all applicable parties. Generally, the decommissioning of the facility proceeds in reverse order of the original installation as follows.

2.1 Removal and Recycling of the Battery Energy Storage Modules

The BESS will be disconnected from the ancillary electric systems, removed from the site and returned to the manufacturer to be disposed of per the manufacturer's guidelines.

The GE LG-Chem Battery modules are designed for end-of-life management through recycling and materials reclamation, tasks which are handled by the equipment manufacturer, GE/LG-Chem, both periodically through the contract term and at the end of useful life.

Lithium-ion batteries contain, among other useful metals, high-grade copper and aluminium in addition to – depending on the active material – transition metals cobalt and nickel as well

as rare earths. To prevent a future shortage of cobalt, nickel, and lithium and to enable a sustainable life cycle of these technologies, recycling processes for lithium batteries are already in place and are managed by the battery manufacturer, LG-Chem (Please see the attached LG-Chem document). These processes regain not only cobalt, nickel, copper, and aluminium from spent battery cells, but also a significant share of lithium. Another potentially valuable and re-gainable materials are graphite and manganese. In order to achieve this goal, several steps are combined into complex process chains, especially considering the task to recover high rates of valuable materials with regard to involved safety issues.

As per Convergent's agreement with the battery manufacturer and system provider – General Electric (GE) will be mandated to remove the spent batteries and recycle the materials using the following steps, for secondary life purposes and to extract any residual value upon the end of the contract term.

- Deactivation or discharging of the battery (at the project site)
- Disassembly of battery systems (at the LG-Chem facility)
- Mechanical processes (including crushing, sorting, and sieving processes) (at the LG-Chem facility)
- Electrolyte recovery (at the LG-Chem facility)
- Hydrometallurgical processes (at the LG-Chem facility)
- Pyrometallurgical processes (at the LG-Chem facility)

N.B. Due to the specific dangers associated with lithium-ion battery recycling processes, under no circumstances shall any Lithium-Ion module be disassembled at the project site, this must be performed at a qualified facility.

2.2 Removal of Ancillary Electrical Systems

Trenches will be dug to remove the underground electrical cables and will be backfilled with native soil afterward. Pad-mount transformer(s), switchgear(s), inverter(s) and associated electronic equipment (switches, disconnects, etc.) will first be disconnected from the facility electrical connection system and evaluated for repurposing and removed from site. The transformers will be evaluated for oil leaks before removal and the oil will be removed if need be to reduce the potential for an oil spill. Equipment that cannot be repurposed will be sent to the manufacturer, recycled, or disposed of offsite in accordance with the current standards and best practices.

2.3 Removal of Electrical Pads, Supports, Gravel and Perimeter Fence

The concrete pad foundations, support structures and gravel ground cover will be exposed, excavated, and removed offsite to an appropriate recycling or disposal facility. Likewise, the perimeter fence will be removed and recycled or disposed.

2.4 Site Restoration

Once all equipment, structures and gravel are removed site restoration will begin. The site will be graded to maintain existing drainage patters and control soil erosion. To stabilize disturbed areas, topsoil will be placed, and the area will be seeded with a native seed mix. All site restoration and removal of components will comply with applicable laws.

3 ENVIRONMENTAL IMPACTS

Decommissioning activities have a similar risk of environmental impacts as those associated with construction phase. For example, decommissioning activities will result in the disturbance of soil, and erosion prevention measures will be put in place, so nearby watercourses or other natural features are not impacted. A Sediment and Erosion Control Plan, similar to that used during construction will be employed. The sediment and erosion control measures will remain in place until the site is stabilized to mitigate stormwater runoff and soil erosion. Temporary impact to roadway traffic similar to those during construction will accompany the decommissioning process. Noise levels similar to those during construction may be heard in the surrounding area while the decommissioning is taking place.

4 DECOMMISSIONING NOTIFICATION

Decommissioning activities may require the notification of stakeholders given the nature of the works at the Project Site. The local municipality will be notified prior to commencement of any decommissioning activities. Convergent will periodically update their list of stakeholders and notify appropriate municipalities of decommissioning activities. Federal, county, and local authorities will be notified as needed to discuss the potential approvals required to engage in decommissioning activities.

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5 DECOMMISSIONING AFTER AN EVENT

In the case of a fire or other event that requires emergency decommissioning of any part of the facility, Convergent will coordinate with the battery manufacturer and system provider, GE, to ensure any affected equipment is safely taken out of service and removed from the site. The same aforementioned decommissioning procedures will be undertaken, and the same decommissioning and restoration program will be honoured where feasible. Please also refer to the Warwick ES3 Emergency Response Plan for additional information regarding procedures to be taken in response to potential events.

6 COST OF DECOMMISSIONING

The current estimated costs to decommission the project are set forth below. The salvage values of recyclable materials (aluminum, steel, copper, etc.) have not been factored. Their scrap/re-use value will be determined based on current market rates at the time of salvage.

Given the ease of augmentation and upgradability of the BESS system, the life of the system can be easily extended to 35 years. As such, the cost estimates provided are under the scenario that the BESS would be continuously upgraded for up to a 35-year lifespan. It is estimated by Convergent, that the cost to decommission the BESS will be $32,000, rising to $63,996 assuming a 2% interest rate over the life of the project.

BESS Decommissioning Cost Breakdown

Tasks:	Cost Estimate ($)
Deenergizing and Disconnection	2,750
Removal of the BESS	10,000
Removal of Ancillary Electrical Systems	3,250
Removal of Equipment Pads, Supports, Gravel & Perimeter Fence	7,500
Site Restoration	8,500
Current Total	**32,000**
Total After 35 Years at 2% Inflation	**63,996**