Appendix J

Site Decommissioning Plan:
17.3 MW/69.2MWh Oxford Energy Center, Oxford, Connecticut

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SECTION 1 Introduction
The decommissioning plan of the Oxford Energy Center Project includes the removal of all components associated with the Project and the restoration of the Project site to as close its original condition as possible. This plan is to provide detail on that process, with supporting time frames or milestones, after operations have ceased. Decommissioning and restoration activities will adhere to the applicable requirements of the CSC and any effective decommissioning agreements.

SECTION 2 Project Description
The Site is located along the west side of North Larkey Road (Parcel 25/25/1 BB2) and is comprised of approximately 23.5-acres. The project site is in a primarily undeveloped industrially zoned area in Oxford, Connecticut and can be accessed via North Larkey Road east of the Site.

The Project will be comprised of containerized lithium-ion battery modules alongside the switchgears, inverters and transformers required to enable a 13.8kV electrical interconnection to the local electricity distribution network (grid). The BESS containers will be installed upon a foundation (type TBD) and the entire BESS will be enclosed by 7 feet high chain link fencing, enclosing the project site. A series of utility poles and underground conduit will connect the BESS to the grid.

The commercial life of the facility is expected to be 25 years. At the end of commercial life, East Point Energy will cease operations and decommission the facility including necessary demolition and site reclamation. To the greatest degree possible, decommissioning will attempt to maximize the recycling of all BESS components.

SECTION 3 Site Condition Pre-Storage System
The Site is bisected by the utilities right-of-way (ROW) and is bounded by a public recreational walking path and airport to the west, a small residential building and forested area to the north, North Larkey Road to the east and a utility substation and forested area to the south. Other than the utility ROW, there are no other structures on the Site and the property is heavily forested.

SECTION 4 Decommissioning and Restoration Plan
The decommissioning process will occur in phases, tailored to specific needs: removing specialized equipment, hazardous and regulated materials, disconnecting utilities, taking out general equipment, demolishing structures, and removing concrete slabs, foundations, underground piping, and utilities as necessary, followed by site restoration. For specialized installations, electrical equipment will be de-energized, and any associated hazardous materials will be safely removed. Modular equipment will be taken out in its original modular form, and efforts will be made to recycle or sell this material as scrap whenever possible. Excavation will be required for the removal of foundations, piping, and utilities. Initially, aboveground piping will be removed, followed by the excavation and disposal of foundations (including concrete and steel), and then the excavation and removal of underground piping. Finally, excavated areas will be backfilled. To restore the site to its original surface conditions, disturbed areas will either be covered with gravel or seeded with a conservation seed mix.

The overall sequence of decommissioning activities is outlined below:

- Disconnecting power and other utilities.

- Removal of hazardous and regulated materials such as fuels, lubricating oils, and process chemicals.
- Dismantling and removal of equipment suitable for sale or reuse.
- Structural demolition to grade elevation.
- Sizing and beneficial use of salvage or scrap materials.
- Remediation of impacted soils and /or groundwater, if any; and,
- Backfill and restoration.
- The access road will be left in place to allow the landowner continued access to this area of the property.

During decommissioning, aboveground components, including structures and equipment, will be removed. Foundations will be removed to a depth of at least two feet below ground level, after which they will be backfilled and seeded to match existing conditions. Conduit installed at depths greater than two feet will be left in place.

The primary goal of the decommissioning process is to safely and efficiently dismantle the storage facility and restore the site to conditions similar to those before construction.

The entire decommissioning process is expected to take approximately four months. This timeframe includes one month for pre-demolition preparation, removal of hazardous and regulated materials, and disconnection of utilities; two months for equipment removal and structural demolition; and two weeks for site restoration.

SECTION 5 Criteria for Site Restoration

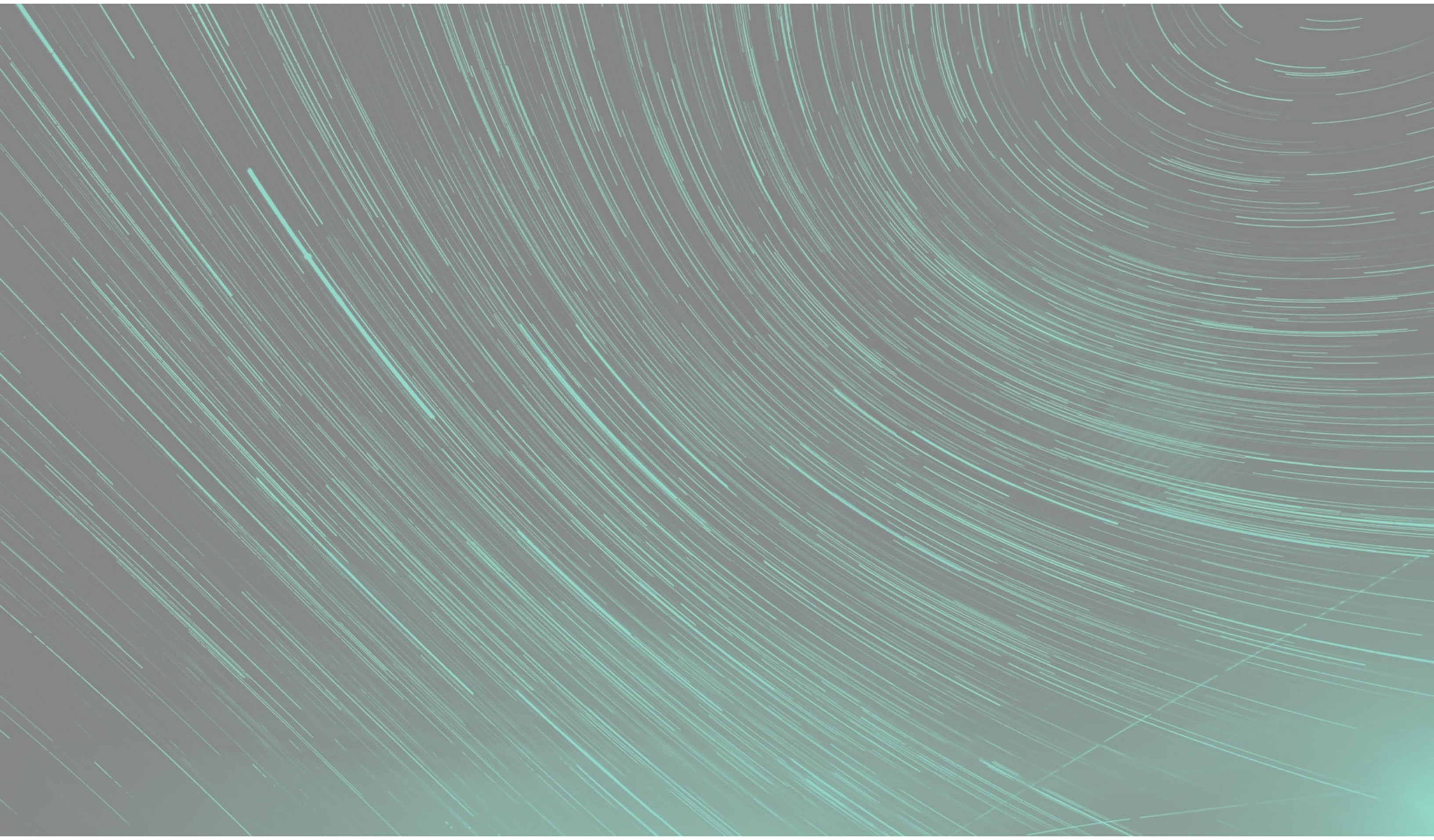
If a decision is made to decommission the Project, whether during construction or after commercial operations, the site will be restored to a stabilized, vacant condition. Restoration efforts will be conducted in accordance with applicable local zoning and land use regulations. The restoration plan will require the owner to dismantle and remove project-related equipment, demolish associated structures down to grade, and return the area to a vacant, vegetated state. Excavated areas will be backfilled as needed.

The following list includes the site restoration performance criteria proposed for Project decommissioning. In the unlikely event that construction on the Project begins but cannot be completed, the same performance criteria would apply:

- The facility dismantlement or removal would need to proceed in a safe and environmentally sound manner. It is anticipated that a Health and Safety Plan, Hazardous and Regulated Materials Plan and Phase I Environmental Site Assessment (ESA) would be performed in accordance with the current Occupational Safety and Health Administration (OSHA) and ASTM International Standards. Health and Safety Plans define law, regulations, and best practices for working safely. Hazardous and regulated materials surveys are used to identify areas where such materials were used and stored at a site. Phase I ESAs are used in these instances to identify environmental issues

in soil, groundwater, or building materials that may need to be investigated further prior to decommissioning and demolition.
- To the extent economically feasible, material and equipment will be reused, salvaged, or recycled.
- Interconnection facilities will be removed to the interface with Connecticut Light and Power/Eversource-owned infrastructure.
- Hazardous and flammable material will be removed and their associated systems decontaminated prior to the commencement of demolition.
- Superstructures, foundations, and underground utilities will be removed to a depth of two feet. Facility items at depths greater than three feet will be assessed to the extent necessary or abandoned in place.
- To the extent required by applicable law, any environmental contamination resulting from the Project will be remediated to applicable standards.
- The site will be regraded and stabilized using conservation seed mix.

Decommissioning activities would occur in accordance with local, state and federal regulations in place at that time. The closure of permits and license associated with the facility's operation will be coordinated with the applicable state and federal agencies.



May 2022

DECOMMISSIONING
POWIN BATTERY ENERGY STORAGE SYSTEMS

CONFIDENTIAL

PD-S001 Rev 0

Powin

Powin has pioneered a cost-effective, safe, and scalable battery energy storage system (BESS) that is purpose-built for the demands of utility scale, commercial and industrial, and microgrid applications. Our BESS also features a modular architecture and streamlined installation process. Behind our industry-leading products is an unrivaled team of experts from across the energy industry, almost three decades of supply chain management expertise and extensive battery management software development proficiency.

Disclaimer

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Powin

20550 Southwest 115th Avenue
Tualatin, OR 97062

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1.0 Introduction

This document provides guidance for decommissioning a Powin Battery Energy Storage System. Since all installations sites will have unique requirements, each site will need to develop a specific decommissioning plan according to the equipment and civil improvements made at the site. This document will assist with that process.

1.1 Purpose

This document addresses decommissioning of an entire BESS facility, not just the components supplied by Powin. However, because the BESS itself, and more specifically the batteries within a BESS, are the key distinguishing feature that makes a BESS facility different from other types of facilities that need to be decommissioned, emphasis is placed on decommissioning the batteries.

Most BESS installations will be decommissioned according to a planned timeline, typically many years from commissioning, and with advanced notice and owner discretion as to the exact timing. However, in isolated cases partial or full decommissioning may be necessary early in response to a catastrophic event.

1.2 Scope

A particular decommissioning scope will vary depending on many factors. For example:

- An augmentation process, whereby new or refurbished batteries are added to a facility, may involve no removal of existing batteries, or may involve decommissioning some batteries.
- A repowering process, whereby all batteries are replaced by new or refurbished batteries, would result in many batteries needing decommissioning, but may not require decommissioning of other components such as housings, racks, power conversion systems, transformers, wiring, or foundations.
- A full site replacement would involve removal of most or all equipment, but may re-use some project site elements, such as roads, fencing, foundations, transformers, and interconnection facilities.
- A full site decommissioning could involve removal of all equipment and civil improvements and restoration of the site to conditions that existed before the facility was built.

This document focuses on a full site decommissioning, recognizing that less intensive alternatives are sometimes appropriate, and that the less intensive alternatives typically involve a subset of the activities described in this document.

This document focuses on BESS decommissioning within the United States, although the principles described are broadly applicable in other nations. Furthermore, state, provincial, and local requirements will also apply, and should be considered in any project-specific decommissioning.

1.3 Out-of-Scope

This document does not address decommissioning costs or how they would be funded. Government approvals necessary to construct a BESS may require estimating the cost of future decommissioning, and in some cases, financial assurance for paying decommissioning costs at end of life.

While BESS decommissioning experience is very limited, it is likely that decommissioning costs will be significant even though would be planned to occur roughly 15 to 20 years after a project starts operation.

1.4 Considerations

Decommissioning should consider these main principals:

- SAFETY: no one should get hurt.
- ENVIRONMENT: decommissioning should not pollute or damage the environment, and should consider circular economy principals favoring waste reduction, reuse, and recycling before disposal. Reuse could involve using components in their original application or in some other less demanding application. Recycling involves dismantling equipment and reusing the constituent materials in the manufacturing of new products.
- COST: minimize the cost of decommissioning.

Furthermore, as the BESS industry is new, few BESS projects have been decommissioned. Decommissioning practices, regulations, and the options available to an owner who needs to decommission will evolve in the coming years and decades. Thus, whatever planning is made early in a BESS facility's life should be updated to incorporate new information and take advantage of emerging opportunities.

There is presently a lack of stable markets and regulatory policy for the collection, transport, and recovery of lithium-ion batteries commonly deployed in BESS. (This contrasts with stable markets and regulations applicable to, for example, scrap metals or the lead-acid batteries widely deployed to start vehicles with internal combustion engines.)

2.0 Overview

WARNING: Hazardous Voltage, Crush Hazard, and/or Arc Flash Hazard

DO NOT DISASSEMBLE, CRUSH, DISPOSE OF IN FIRE, OR UNDERTAKE SIMILAR ACTIONS.

DO NOT ATTEMPT TO DISASSEMBLE OR UNINSTALL POWIN BESS EQUIPMENT IN PREPARATION FOR RECYCLING.

Preparing this equipment for recycling can create hazardous energy situations, crush hazards, and/or arc flash hazards. For this reason, **this procedure must be performed by a qualified, Powin-approved Technician.**

AVERTISSEMENT: Tension dangereuse, risques d'écrasement et / ou risques d'arc électrique

NE PAS DÉMONTER, ÉCRASER, ÉLIMINER AU FEU OU ENTREPRENDRE DES ACTIONS SIMILAIRES.

NE TENTEZ PAS DE DÉMONTER OU DE DÉSINSTALLER L'ÉQUIPEMENT POWIN BESS EN PRÉPARATION POUR LE RECYCLAGE.

La préparation de cet équipement pour le recyclage peut créer des situations énergétiques dangereuses, des risques d'écrasement et / ou des risques d'arc électrique. Pour cette raison, *cette procédure doit être effectuée par un technicien qualifié agréé par Powin.*

The main components of a typical BESS facility include:

- Batteries
- Modules, packs, stacks/racks, and enclosures that electrically connect and house the batteries
- Control systems
- Heating, ventilating and air conditioning (HVAC) systems
- Wiring
- Power conversion systems
- *Transformers
- *Foundations, roads, fencing and other civil improvements
- *Interconnecting equipment (which may be on-site or offsite, and may be owned by the interconnecting utility, not the BESS project itself)

Figure 1 illustrates a typical Centipede BESS field installation. Items marked with an asterisk (*) in the list above are not depicted in the typical field illustration in **Figure 1**.

This decommissioning plan focuses on Powin's containerized and Centipede systems. Typical Centipede major equipment consists of battery segments (with HVAC units mounted at the top), collection segments, the power conversion system (PCS), and transformer. The PCS, transformer, underground cables, and other Balance-of-Plant (BOP) equipment such as foundations and interconnection facilities are typically provided by Powin's Inverter Partners and third-party suppliers.

Figure 1. Typical Field Installation

Table 1 summarizes the main components and the typical materials they are made of for consideration in reuse or recycling opportunities, or for disposal if reuse or recycling alternatives are not available or practical.

Table 1. Matrix of Key Components and Materials

COMPONENT	COMMENTS	KEY MATERIALS FOR RECYCLING				TYPICAL CLASSIFICATION FOR HANDLING AND DISPOSAL
		FERROUS METALS	ALUMINUM & COPPER	OTHER METALS	OTHER	
Batteries (if used, but undamaged)	Potential second-use market	✓	✓	✓		Hazardous waste or universal waste
Batteries (if damaged)		✓	✓	✓	Plastics	Hazardous waste or universal waste
Racks & enclosures		✓			Fiberglass & plastics	(Non-hazardous) solid waste
Wiring & busbars			✓		Plastics	(Non-hazardous) solid waste
HVAC system		✓	✓		Refrigerant	Recycled or reclaimed, refrigerants are normally considered non-hazardous
Power conversion system		✓	✓	✓	Electronic components	
Transformers	Potential second-use market	✓	✓			
Foundations		✓			Concrete	Inert (construction & demolition) waste
Interconnection facilities	May not be property of BESS project	✓	✓			

Figure 2 depicts a typical BESS configuration in a single-line electrical diagram.

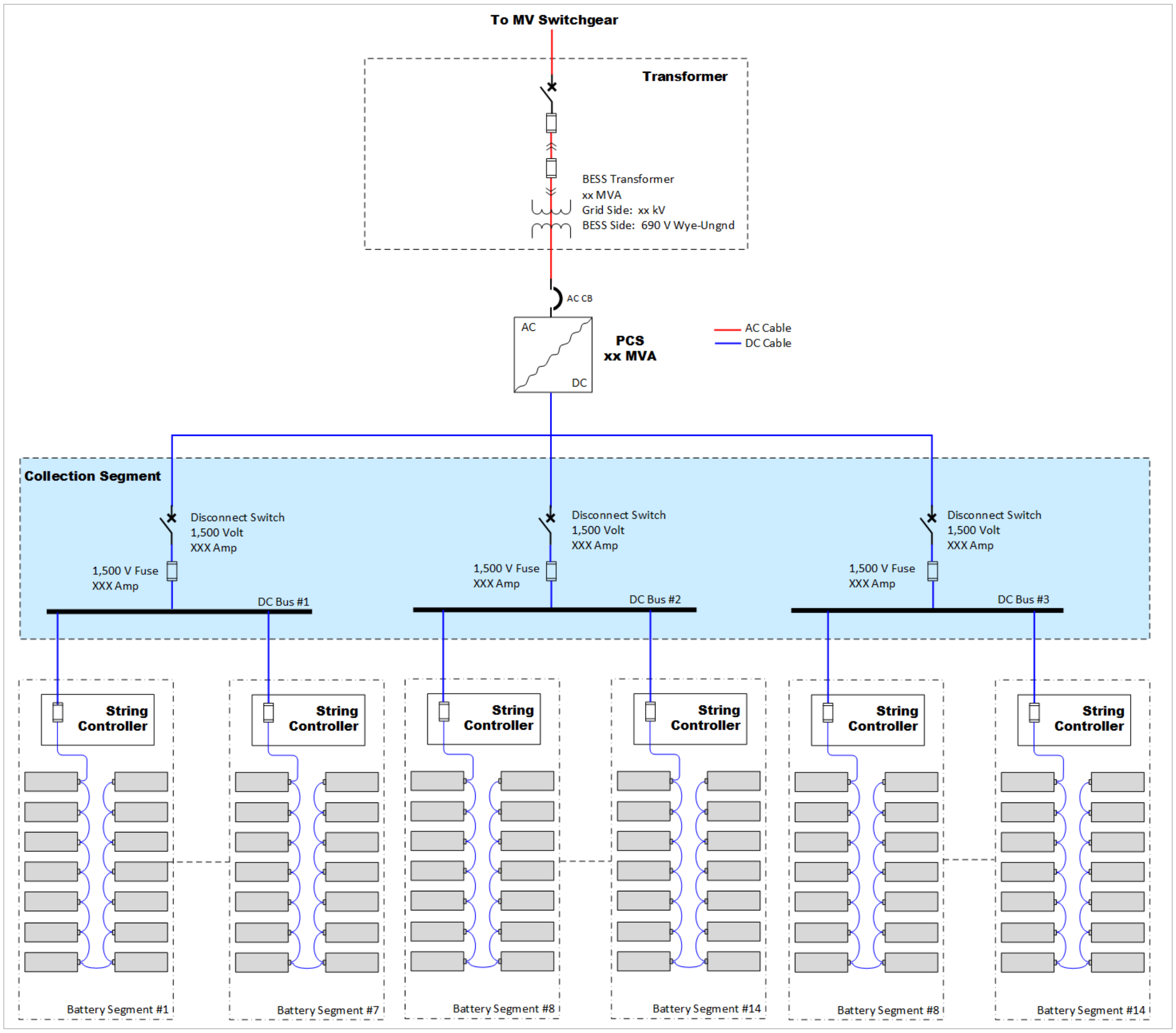


Figure 2. Centipede Single-line Diagram

A typical collection segment enclosure is shown in **Figure 3**. It contains disconnect switches, fuses, and direct current (DC)buses. Its main role is to connect the required DC cable connections from the battery segments to the PCS.

Figure 4 shows the enclosure for a Centipede battery segment, which houses two DC strings and their fuses.

Figure 5 depicts a typical battery stack, which contains in this example contains two strings of 420 Lithium Iron Phosphate (LFP) battery cells connected in series.

Due to continuous product improvements, this photo may not exactly match the unit that is installed.

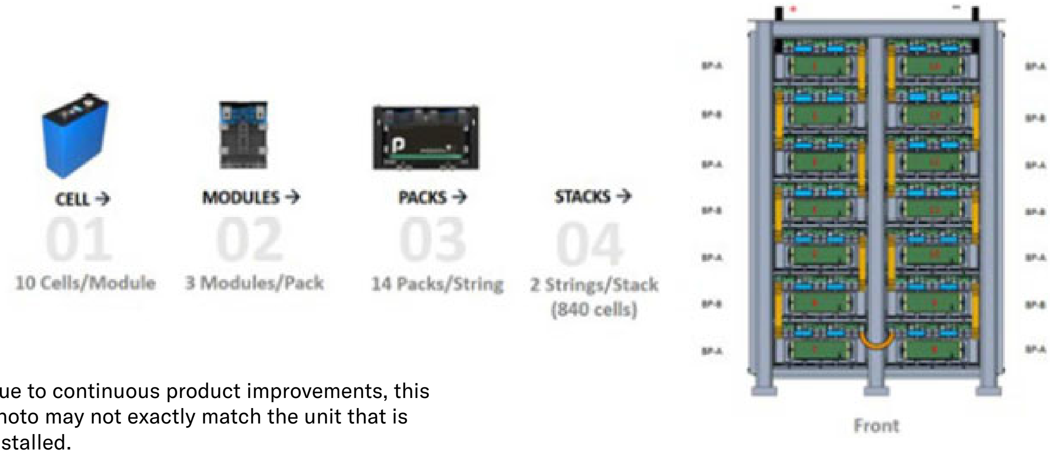
Please refer to the documentation provided at the initial installation for specific details.

Figure 3. Centipede Collection Segment

Due to continuous product improvements, this photo may not exactly match the unit that is installed.

Please refer to the documentation provided at the initial installation for specific details.

Figure 4. Centipede Battery Segment



Due to continuous product improvements, this photo may not exactly match the unit that is installed.

Please refer to the documentation provided at the initial installation for specific details.

Figure 5. Battery Cell, Module, Pack and Stack

Figure 6 shows a typical PCS that would be used at a BESS facility, **Figure 7** shows a typical transformer, and **Figure 8** shows an example of interconnection facilities.

Due to continuous product improvements, this photo may not exactly match the unit that is installed.

Please refer to the documentation provided at the initial installation for specific details.

Figure 6. BESS Power Conversion System (PCS) (Example)

Figure 7. BESS Transformer (Example)

Figure 8. BESS Interconnection Facility (Example)

3.0 Planning

A project-specific decommissioning plan should be prepared prior to actual decommissioning. Key elements of such a plan should include the following. Some situations will favor developing a project-specific decommissioning plan years before the actual decommissioning, such as during project planning (before the facility is built). If this is the case, certain plan elements will likely need to be updated closer to the actual decommissioning process.

a. An overview of the decommissioning process.

b. Safety, in particular considering:

- electrical, chemical, and physical hazards, and recognizing that even when fully discharged according to the BESS's control system, residual energy stored in the batteries and other systems can be hazardous, and
- personal protective equipment necessary for safe decommissioning.

c. Roles and responsibilities for all involved parties.

d. Disposition Planning: Identify and select destinations for reuse, recycling, and disposal, and related handling and transportation needs, and enter into related commercial arrangements with rebuilders, recyclers, scrap yards, and disposal facilities.

- This step should also include determinations as to what materials, if any, are regulated as hazardous waste, universal waste, or other regulated categories.
- Special attention may need to be given to certain components that represent a small portion of the facility, but which may require special handling, such as air conditioning refrigerants and fire suppression agents.

e. Permitting requirements, including local approvals for decommissioning or restoration.

f. A detailed description of each activity in the decommissioning process, when it will be performed, and who willperform it. This could include:

- Last operations: Run the BESS to its fully discharged state (if the batteries are slated for recycling or disposal), or to an agreed-upon state-of-charge (possibly in the 20-40% range) if the batteries are slatedfor re-use. Discharged batteries are normally safer to handle and transport than charged batteries.
- Shutoff power to the BESS and electrically isolate it from the power grid.
- Electrically disconnect components within the BESS, typically by removing busbars, wires, and otherconnectors. Normally, wiring for protective equipment and grounding would be removed last.
- Existing Powin documentation and procedures.

  For example, the Product Manual and Installation Procedure for the specific Stacks that are installed, the Powin Energy Control Plan (POM-002), and the Spare Equipment Long-term Storage Procedure (MP-LTSP), contains information that could be relevant for project decommissioning, including (a) safety information related to BESS components, (b) battery module dimensions and weights, and (c) means of measuring module and cell voltages.

- Mechanically disconnect major components for segregation of materials and ease of further handling and transport.
- Disassemble, pack, and transport equipment to recycling destinations. Confirm that transportation providers have the right qualifications to safely conduct the work.
- Demolish civil and other Balance-of-Plant components as needed. For example, this could include removal of foundations, roads, and fences to a certain depth, or these could be left in place depending on landowner requirements, permits, and subsequent use of the facility site.
- Restore the site as needed, which could include restoration to a condition similar to before the project was constructed.

g. Document the decommissioning process with photographs, copies of Bills-of-Lading and agreements, and other factors as necessary to satisfy land-owners, permits, and regulatory agencies.

See Appendix A for a summarized Decommissioning Checklist.

4.0 Decommissioning Process

The decommissioning process includes dismantling the BESS and removing it from the site.

It is important to note that the used lithium-ion batteries, and potentially other materials at the facility, may be classified as hazardous waste. U.S. Environmental Protection Agency (EPA) rules under the Resource Conservation and Recovery Act (RCRA) consider the generator of hazardous waste (the owner) to be liable for proper recycling or disposal.

Also, U.S. Department of Transportation (DOT) hazardous materials regulations include requirements for packaging and standard hazard communication requirements (e.g., markings, labels, shipping papers, emergency response information) and hazmat employee training requirements.

4.1 Disassembly and Packing

BESS components should be electrically isolated (disconnected from each other) typically by removing busbars, wires, and other connectors. Before final system shutdown, discharge the batteries to their desired level (typically 0% state-of-charge).

After electrical isolation, systems should be mechanically disassembled for segregation of materials and ease of further handling and transport. The specific level of disassembly will depend on project-specific conditions. For example, if the battery racking systems are structurally sound, it may be sensible to transport intact racks (still populated with battery modules) to a reuse or recycling facility. On the other hand, it may be advisable to remove and pack battery modules on pallets for transport and recycling, separately from the racking systems.

Balance-of-Plant systems will also need to be disassembled and prepared for shipment off-site. Components should be blocked, crated, palletized, containerized, or otherwise secured for transport.

Particular care should be taken to maintain the structural integrity and electrical isolation of the batteries, as damaged batteries may have additional packing, handling, and regulatory reporting requirements. Fire caused by short circuited or damaged lithium-ion batteries during transport pose serious risk to the public and environment and must be mitigated. US DOT regulations deem transported used or new batteries as “Class 9” (49 CFR § 173.185) miscellaneous hazardous material and include packaging and labeling requirements to mitigate the risk of accidents. Appropriate robust outer packageof lithium-ion batteries can minimize the risk of the following incidents:

- Short circuiting
- Accidental activation
- Release/leak of hazardous materials
- Combustion

4.2 Transportation

Batteries and other equipment and materials are typically transported by truck to reuse, refurbishment, recycling, and disposal facilities. Truckers should be aware of what they are handling, appropriately secure their loads, and comply with applicable hazard communication and documentation requirements. Properly documenting the transportation of materials,with, for example, Bills-of-Lading, is an important part of documenting the decommissioning process.

As local markets commonly exist for scrap metal, non-ferrous metals, such as wiring and concrete, it is likely that these materials will be hauled relatively short distances. Reuse and recycling locations for lithium-ion batteries may be more limited, and thus may be more likely to require long-distance transport.

4.3 Refurbishment and Reuse

If possible, reusing batteries and other equipment likely offers the least cost, best environmentally conscious choice. However, technical and economic factors may make this infeasible.

Some BESS equipment may be suitable for reuse with minimal effort or be suitable for spare parts inventory at other operating facilities. Degraded batteries that have reached their end-of-life for their original purpose (such as power grid applications of energy arbitrage, firm capacity, and ancillary services) may be useful for other less demanding applications. For instance, these batteries can be given a second-life to serve power backup for telecommunication systems or irrigation systems.

4.4 Recycling of Lithium-ion Batteries

Recycling is the long-term sustainable solution to reintroduce materials found in unusable lithium-ion batteries back into commerce. Regulations, technologies, and best practices for recycling lithium-ion batteries are rapidly developing. Large-scale recycling of lithium-ion batteries is just becoming available in North America, for example from Li-Cycle, with presentoperations in Rochester, NY and Kingston, Ontario, and plans to expand to Phoenix, Arizona.

While specific processes will vary, battery recycling processes often include:

- Sorting batteries based on their chemistry (e.g., LFP, NMC).
- Dismantling discharged batteries from packaging such as modules
- Removing battery casings
- Removing electrolyte and cathode material
- Shredding

There are two common commercial methods for recycling batteries:

a. pyrometallurgical process (smelting), and

b. hydrometallurgical process (leaching).

The pyrometallurgical process is the oldest battery recycling technology that aims to smelt and process mixed battery chemistries. The hydrometallurgical process can recover transition metals and lithium from cathodes. Other recycling methods such as direct cathode recycling are being pursued. This method aims to recover intact cathode materials from certain lithium-ion battery chemistries. **Figure 9** shows the Li-ion battery recycling pathways for the mentioned technologies.

Powin's sustainability initiative has placed emphasis on finding battery recycling partnerships in China. As a result, Powin offers an optional BESS Battery Recycle Program where Powin can contract to take back full systems or partial systems (e.g., Stacks) at system end-of-life. In addition, Powin's relationship with Beijing Saidemei Resources Recycling Research Institute Company Limited, a lithium battery recycling company in China, allows for access to Saidemei's state-of-the-art battery recycling line that can re-purpose batteries at end-of-life back to raw materials, which can be used to produce new cells with 90% of original capacity.

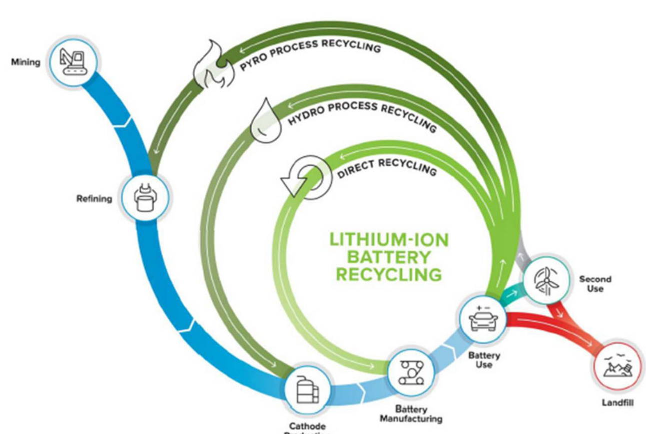


Figure 9. Circular Economy Pathways for Lithium-ion Batteries

4.5 Recycling of Other Materials

Most other (non-battery) materials at a BESS facility will likely be recycled, though the potential for re-use should be considered. These other materials include:

- Ferrous metals, such as racks, housings, and structural members, for which there are typically well-developed, widely distributed scrap metal recycling markets.
- Non-ferrous metals (commonly aluminum and copper, used in busbars and wiring), for which there are typically well-developed, widely distributed recycling markets.
- Concrete, for which typical practices and market conditions vary widely. Concrete can often be crushed with the reinforcing steel recovered for recycling, and the aggregate reused in new concrete or as structural fill.
- Much of the remaining equipment, such as power conversion systems, transformers, and heating/ventilating/air conditioning equipment can be recycled or remanufactured for use in a secondary market.

4.6 Disposal

Disposal, typically in a sanitary landfill, will be necessary for materials where reuse and recycling are not feasible.

Some materials, such as lithium-ion batteries, are likely unsuitable for sanitary landfills, and will require use of specialized hazardous waste disposal sites if the batteries cannot be reused or recycled. This should not typically be necessary, however, as the recycling processes described above improve and become more economical than disposal in a specialized facility.

Other materials, such as concrete foundations, are relatively inert and are typically disposed of in construction/demolition waste landfills (which are often more available and less costly than sanitary landfills) if recycling is not feasible.

4.7 Summary

See Appendix A for a summarized checklist for decommissioning activities.

5.0 Warning, Caution, and Important Notice Descriptions

The following **WARNING**, **CAUTION**, and **IMPORTANT** notices are used throughout Powin documentation to identify situations of presenting personal hazard, equipment damage, or provide information that is important to be aware of BEFORE performing the tasks identified in this document. These notices are critical to the safe installation, operation, and decommissioning of this equipment.

READ these notices carefully. Understand the level of severity that each of them provides and ensure that all personnel who are involved in the activities described in any Powin document are fully aware of the potential hazards and properly trained in the mitigation or avoidance of such hazards.

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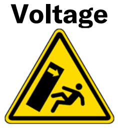
Hazardous Voltage

Drop or Crush Hazard

Arc Flash Hazard

Fire Hazard

Toxic Substance Hazard

Corrosion Hazard

Vented Gas Hazard</td>
<td>WARNING: DANGER - Risk of Death or Serious Personal Injury</td>
</tr>
<tr>
<td>This WARNING notice indicates a risk of death or serious injury in the event that the product is installed, used, or handled incorrectly or without proper safety procedures.

Failure to heed the information in these warnings could result in severe, if not fatal, personal injury.

Hazardous Voltage hazards indicate that the there is a danger of electric shock present. Use extreme caution to avoid electrocution.

Drop or Crush hazards indicate a danger of being crushed by heavy equipment. Use appropriate lift-safety techniques or seismic securing requirements to ensure that the equipment cannot fall onto any person working around the equipment.

Arc Flash hazards indicate a danger of high-energy (explosive) electrical discharge between two electrically-conductive materials. Avoid opening electrical enclosures unless electrical components are de-energized or specialized personal protective equipment is worn.

Fire Hazard indicates that conditions could product fire or thermal run away.

Toxic Substance Hazard indicates that substances (water, vapor, smoke etc.) could contain toxic and poisonous particulates that could be harmful to human life.

Corrosion Hazard indicates that substances (Battery electrolyte or HVAC refrigerant) may be present that could cause equipment damage and/or failure or cause acid-type burns and damage to human flesh.

Vented Gas Hazard indicates that off-gassing may have occurred creating an atmosphere hazardous to human life and potentially explosive if not ventilated properly.</td>
</tr>
</table>

Tension dangereuse Risques d'écrasement Risques d'arc électrique Risque d'incendie Risque de substance toxique Risque de corrosion Risque de gaz évacué	**AVERTISSEMENT: DANGER - Risque de mort ou de blessures graves** Cet *AVERTISSEMENT* indique un risque de mort ou de blessures graves dans le cas où le produit est installé, utilisé ou manipulé de manière incorrecte ou sans procédures de sécurité appropriées. Le non-respect des informations contenues dans ces avertissements peut entraîner des blessures graves, voire mortelles. ***Des risques de tension dangereux* indiquent qu'il existe un risque de choc** é**lectrique.** Soyez extrêmement prudent pour éviter l'électrocution. *Les risques de chute ou d'écrasement* indiquent un risque d'être écrasé par un équipement lourd. Utiliser des techniques de sécurité de levage appropriées ou des exigences de sécurisation sismique pour s'assurer que l'équipement ne peut pas tomber sur une personne travaillant autour de l'équipement. *Les dangers d'arc électrique* indiquent un danger de décharge électrique à haute énergie (explosive) entre deux matériaux électriquement conducteurs. Évitez d'ouvrir les boîtiers électriques, sauf si les composants électriques sont hors tension ou si un équipement de protection individuelle spécialisé est porté. *Le risque d'incendie* indique que les conditions pourraient provoquer un incendie ou un emballement thermique. *Le risque de substance toxique* indique que les substances (liquide, vapeur, fumée, etc.) peuvent contenir des particules toxiques qui pourraient être nocives pour la vie humaine. *Le risque de corrosion* indique que des substances (électrolyte de batterie ou réfrigérant HVAC) peuvent être présentes et provoquer des dommages et / ou une panne de l'équipement ou des brûlures de type acide et des dommages à la chair humaine. *Le risque de gaz ventilé* indique qu'un dégagement de gaz peut s'être produit, créant une atmosphère dangereuse pour la vie humaine et potentiellement explosive si elle n'est pas correctement ventilée.

	CAUTION: Risk of Non-Fatal Personal Injury or Damage to Equipment This **CAUTION** notice indicates a risk of injury or damage to property in the event that the product is used or handled incorrectly or without proper safety procedures.
	ATTENTION: Risque de blessures corporelles non mortelles ou de dommages à l'équipement Cet avis *d'ATTENTION* indique un risque de blessures ou de dommages matériels en cas d'utilisation ou de manipulation incorrecte du produit ou sans procédures de sécurité appropriées.

IMPORTANT:

This **IMPORTANT** notice will contain information that is important to the proper installation, operation, or maintenance of this equipment. This information does not indicate a hazardous or dangerous condition.

IMPORTANT:

Cet avis *IMPORTANT* indique un risque de blessure ou de dommage matériel en cas d'utilisation ou de manipulation incorrecte du produit ou sans procédures de sécurité appropriées.

6.0 Definitions

The following terms and acronyms are used in this document.

AC	Alternating Current
AC Battery	The AC Battery is the DC battery system plus the equipment and software used to convert the stored DC power to AC power for grid utilization.
Array	A group of Stacks connected in parallel is an array. The number of Stacks and their location within an array is dictated by the owner's energy capacity requirement and space limitations.
BESS	Battery Energy Storage System. This is a general term for an energy storage system that utilizes batteries as its power-storage medium. Other energy storage systems include gravity (water storage) and centrifugal energy. A Powin BESS is considered to be the AC Battery + the StackOS.
Block	A block is a BESS having its own grid point of insertion. A block may be comprised of one or more arrays.
BMS	Battery Management System
BP	Battery Pack
BPC	Battery Pack Controller
CAN	Control Area Network. A robust bus that facilitates communication.
Constant-Power (CP) Energy	This is the energy delivered during a complete bulk discharge without a low-power top-off charge.
CPU	Central Processing Unit
DC	Direct Current
EMS	Energy Management System
ESS	Energy Software System
HVAC	Heating, ventilation, and cooling
LFP	Lithium Iron Phosphate

LOTO	Lockout/Tagout
NFPA	National Fire Protection Agency
OS	Operating System
PCS	Power Control System
PPE	Personal Protective Equipment
SOC	State-of-Charge
StackOS	The name of the operating system of the Powin BESS
StackOS+	This is Powin's Energy Management System Software and it includes the data warehouse and analytics features, remote operations, monitoring and dispatch as well as the Powin Energy Optimization features.
UI	User Interface

These symbols may be found on the product to identify the source of energy input (AC or DC) and the required ground connections per UL, NEC/CEC requirements.

∼	Alternating Current (AC)
⎓	Direct Current (DC)
V∼	Volts AC (Vac)
V⎓	Volts DC (Vdc)
⏚	Ground
	Lockout Required Before Servicing

7.0 References

7.1 Powin Product References

The following documents are relevant to this procedure and are an integral to the proper decommissioning of this product. Be sure to read them carefully to ensure the safety of anyone working with this product.

- Stackxxxy Product Manual (MP-Sxxxy)*
- Stackxxxy Installation Procedure (PI-Sxxxy)*
- StackOS Product Manual (MP-SOS)
- Powin Product Safety Guide (GP-EHS-0)
- Powin Energy Control Plan (POM-002)
- Spare Equipment Long-term Storage Procedure (POM-LTSP), Rev 0
- Powin BESS Recycling Program (SB-003)

* Sxxxy = Stack Module installed at the site. (e.g., S750E)

7.2 Regulatory References

- U.S. Environmental Protection Agency, [Online]. Available: https://www.epa.gov/.
- Energy Storage Association, "End-of-Life Management of Lithium-ion Energy Storage Systems," 2020. [Online]. Available: https://energystorage.org/thought-leadership/end-of-life-management-of-lithium-ion-energy-storage-systems/.
- Energy Storage Association, "ESA Corporate Responsibility Initiative: Guidelines for End-of-Life and Recycling of Lithium-Ion Battery Energy Storage Systems," 2020. [Online]. Available: https://energystorage.org/wp/wp-content/uploads/2020/08/ESA-Corporate-Responsibility-Initiative-Guidelines-for-End-of-Life-and-Recycling-of-Lithium- Ion-Battery-Energy-Storage-Systems.pdf.
- National Fire Protection Association, "NFPA 855 Standard for the Installation of Stationary Energy Storage Systems," NFPA, 2020.
- NCER, [Online]. Available: https://www.electronicsrecycling.org/?page_id=39.

8.0 Revision History

NAME	DATE	REASON FOR CHANGES	VERSION
R. Mendoza	2022.05.17	Initial Publication	0

Appendix A Decommissioning Checklist

At a minimum, the following items should be included in a Decommissioning Plan:

- Complete and document an all-inclusive inventory of all equipment and civil improvements included at the site.
- Product Safety Information for all equipment (including a Job Safety Analysis for Decommissioning activities)
- Roles and Responsibilities are clearly defined
- Personnel training (and/or approval) for Decommissioning activities
- Personal Protective Equipment Requirements
- Safety Signage Examples
- Safety Meeting schedule for communicating applicable safety information
- Lockout/Tagout procedures defined and confirmed
- Disassembly procedures (or disassembly plan) for all equipment
  - Product size and weight
  - Module voltage Measurements (including procedure for taking measurements)
  - Cell Voltage Measurement (including procedure for taking measurements)
- Disposal, storage, and transportation requirements
- Disassembly or restoration to site environment, if applicable

Ensure copies of the following documents are available:

- Original Commissioning Documentation and permits for site installation
- Appropriate permits and Job Safety Analyses for Decommissioning Activities
- Stack Product Manual (MP-Sxxxy)
- Stack Installation Procedure (PI-Sxxxxy)
- Powin Energy Control Plan (POM-002)
- Powin's Safety Manual (GP-EHS-0) and supporting forms/templates
- Long-Term Storage Requirements (POM-LTSR)
- Powin Recycling Program (SB-003)

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Notes: