

Appendix E - **DECOMMISSIONING PLAN**



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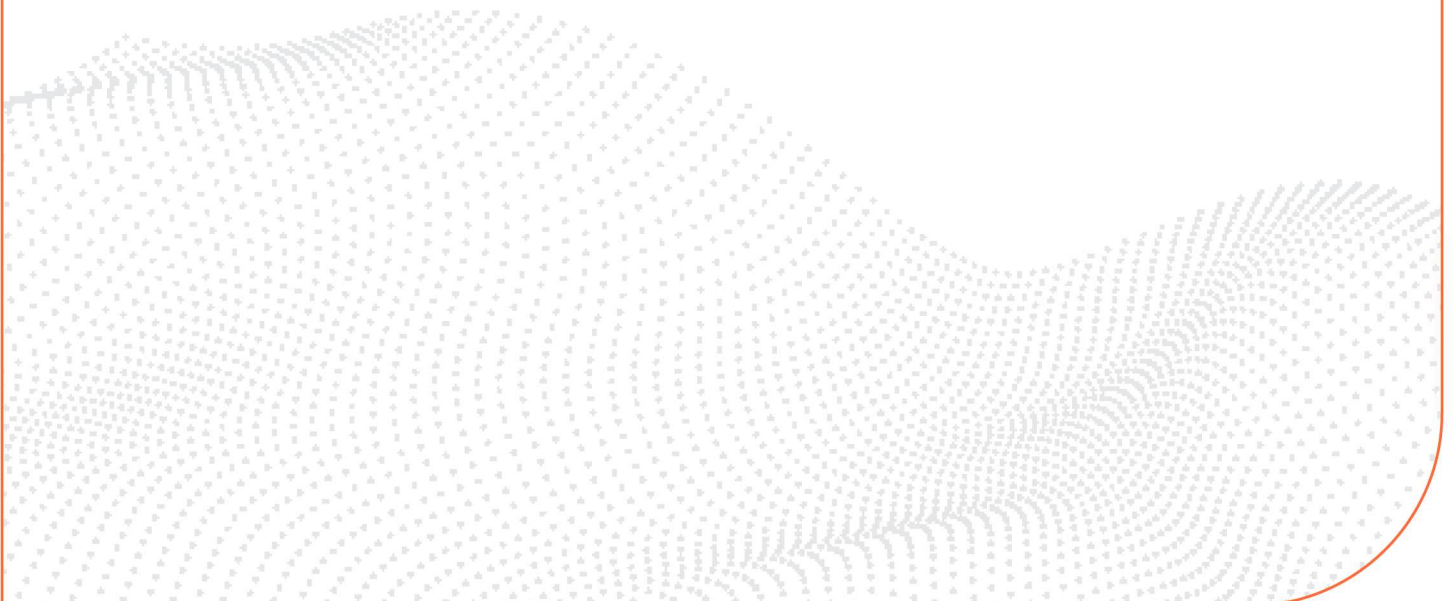


# BATTERY ENERGY STORAGE SYSTEM PROJECT DECOMMISSIONING PLAN

XCEL ENERGY

SHERCO SOUTH & WEST BESS  
DOCKET NO. E002/ESS-25-319

December 4, 2025



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## LIST OF ABBREVIATIONS

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### Abbreviation

1898 & Co.

BESS

BMPs

MV

MW

MWac

MWdc

MWh

Project

Plan

PUC

Xcel

### Term/Phrase/Name

1898 & Co., a part of Burns & McDonnell Engineering Company, Inc.

Battery Energy Storage

Best Management Practices

Medium Voltage

Megawatt

Megawatts Alternating Current

Megawatts Direct Current

Megawatt Hours

Sherco South & West BESS

Decommissioning Plan

Minnesota Public Utilities Commission

Xcel Energy

# 1.0 Project Description

## 1.1 Project Description

1898 & Co., a part of Burns & McDonnell Engineering Company, Inc. (hereinafter called “1898 & Co.”) was retained by Xcel Energy (“Xcel”) to develop a decommissioning plan (the “Plan”) for the proposed Sherco South & West Battery Energy Storage (BESS) project (the “Project”). The total nameplate capacity of the Project is approximately 600 megawatts (“MW”).

Anticipated Project life is 20 years, such that the anticipated date for decommissioning is 20 years from the commercial operation date. The Project will be interconnected to the regional electric transmission grid through a high-voltage transmission line. This overhead 600-foot, 345-kV line transfers power from the on-site substation to the Sherco Substation and is assumed to consist of approximately one steel pole structure. The Project is expected to utilize approximately 704 BESS enclosures from Sungrow. The Batteries have a four (4) hour battery duration and a total energy capacity of approximately 2,400 megawatt hours (“MWh”).

## 1.2 Location of Facility

The Project will be located on industrial land in Sherburne County, Minnesota, approximately 50 miles northwest of Minneapolis, Minnesota.

## 1.3 Ownership

The utility-owned generation portfolio is owned by Xcel.

## 1.4 Commercial Operation Date

The facility is expected to achieve commercial operation in the fourth quarter of 2027.

## 1.5 Facility Map

A layout of the facility is included in Appendix B.

# 2.0 Use of Generation Output

The Project’s generation will be used as part of a utility-owned generation portfolio.

# 3.0 Decommissioning Objective

Site permits for solar, energy storage, and wind generating facilities issued by the Minnesota Public Utilities Commission (“PUC”) may require permittees to file decommissioning plans prior to construction and to update the plans throughout the operating life of the facility. Sherburne County does not have applicable regulations for the decommissioning of BESS sites, but does include a zoning ordinance for Commercial Wind Turbines that states:

“The property owner shall ensure that facilities are properly decommissioned upon end of project life or facility abandonment. Decommissioning shall include: removal of all structures and debris to a depth of four feet; restoration of the soil; and restoration of vegetation (consistent and compatible with surrounding vegetation) shall also be required. A notice of the existing footing and

location of the wind facility must be recorded on the property’s legal description at the same time the CUP is recorded.”

This report assumes that (i) all above-grade structures associated with the Project will be removed and (ii) all Project equipment, structures, and supporting facilities will be removed to a depth of 48 inches below grade, in each case in accordance with typical decommissioning requirements.

## 4.0 Notification

When it is determined that the Project should be retired, prior to decommissioning activities commencing, it is Xcel’s responsibility to notify via mailed letters to adjacent landowners, Sherburne County, the City of Becker, and the PUC of the decommissioning schedule and confirm that costs are still accurate as estimated. Both Sherburne County and the City of Becker will be provided with a copy of the Plan.

## 5.0 Decommissioning Tasks and Timing

### 5.1 Decommissioning Plan

When it is determined that the Project should be retired, the Project equipment will be removed as noted herein. It was assumed that the Project will incur costs for removal and disposal of the Project components, foundations, the transmission line interconnection, and other facilities, as well as for the restoration of the site following the removal of equipment. However, the above-grade steel, aluminum, and copper equipment is expected to have significant scrap value to a salvage contractor that will offset a portion of the decommissioning costs. All recyclable materials will be recycled to the extent possible, while all other non-recyclable waste materials will be disposed of in accordance with state and federal law.

As part of decommissioning, all disturbed areas at the site will be returned to as close to predevelopment conditions as practicable. The Plan provided herein include activities and costs to return the land to a condition suitable for industrial use subsequent to decommissioning of the Project.

The activities associated with the decommissioning plan described above are anticipated to be completed within an 18-month timeframe, including approximately three months for planning and permitting activities, approximately twelve months for demolition; and approximately three months for site restoration. Additional time may be required for post-decommissioning activities, including monitoring of new vegetation. However, this timetable and the cost estimates below in Table 6-1 should provide sufficient time and budget to comply with any applicable health and safety regulations.

### 5.2 Project Facility Decommissioning Details

#### 5.2.1 BESS System

The Project is expected to utilize approximately 704 BESS enclosures from Sungrow. Each BESS enclosure is estimated to weigh approximately 93,696 pounds and have approximate dimensions of 19.8 feet by 9.5 feet. Each BESS enclosure is assumed to contain 48 Lithium Iron Phosphate battery modules.

All above-grade equipment within the perimeter fence of the Project will be removed as part of decommissioning, including the enclosures, racks, and fencing. All salvageable materials will be loaded onto trucks and hauled to a scrap yard for recycling. All other non-recyclable materials will be transported to approved disposal facilities.

All below-grade equipment and foundations associated with the array will be removed to a depth of 48 inches below grade. Voids left from the removal of the below-grade foundations will be backfilled with surrounding soils and fine graded to provide suitable drainage.

### 5.2.2 MV Transformer Skids

The medium voltage (“MV”) transformer skids generally sit on small concrete footings or concrete ballasts on steel piles within the array. A quantity of 88 transformer skids is assumed to be removed as part of decommissioning.

All above-grade equipment associated with the inverter stations will be removed as part of decommissioning. All salvageable materials will be loaded onto trucks and hauled to a scrap yard for recycling. All other non-recyclable materials will be transported to approved disposal facilities.

All below-grade equipment and foundations associated with the inverter stations will be removed to a depth of 48 inches. Voids left from the removal of the below-grade foundations will be backfilled with surrounding soils and fine graded to provide suitable drainage.

### 5.2.3 Auxiliary Transformers

Auxiliary transformers generally sit on small concrete footings or concrete ballasts on steel piles within the array. A quantity of four auxiliary transformers is assumed to be removed as part of decommissioning at the end of life.

All above-grade equipment associated with the transformer stations will be removed as part of decommissioning. All salvageable materials will be loaded onto trucks and hauled to a scrap yard for recycling. All other non-recyclable materials will be transported to approved disposal facilities.

All below-grade equipment and foundations associated with the inverter stations will be removed to a depth of 48 inches. Voids left from the removal of the below-grade foundations will be backfilled with surrounding soils and fine graded to provide suitable drainage.

### 5.2.4 Electrical Cabling

The Project will utilize wiring running to the inverters, as well as below-grade cabling running from the inverters to a substation. All above-grade electrical cabling supporting the Project was assumed to be removed.

The Project includes approximately 700,000 feet of below grade cabling. Below-grade cabling is assumed to be buried at a depth of 48 inches below grade. At this depth, all cables are assumed to be removed. Voids left from the removal of the below grade cabling will be backfilled with surrounding soils and fine graded to provide suitable drainage.

### 5.2.5 Access Roads

The Project will utilize access roads to support construction and allow for vehicle access to facilitate inspections and maintenance of the Project and associated equipment during operation. Access roads were assumed to be 20-feet wide and be surfaced with 6 inches of crushed rock. A total of 1.2 miles of access roads is assumed to be installed, including entry roads and substation roads.

All crushed rock surfacing will be removed from the Project area. The removed crushed rock will be loaded into dump trucks and hauled offsite. Crushed rock can be recycled and reused and typically has a salvage value as a commodity equal to or greater than the cost to haul to an end user. However, for the purpose of this Plan, the cost to remove the crushed rock, load it into dump trucks, and haul it offsite was assumed to be at the expense of the Project.

Areas where crushed rock surfacing has been removed will be fine graded to provide suitable drainage. In right-of-way and non-agricultural areas, the ground will be seeded via the Project vegetation management plan to prevent erosion.

### 5.2.6 Project Substation

Power from the Project is delivered via power cables to the Project substation where it is transformed to a higher voltage. No design information was available for this substation at the time this Plan was written, so it was assumed to consist of four main power transformers, four high-voltage breakers, and other typical equipment, including disconnect switches, lightning masts, control building, and other ancillary equipment. Weights, dimensions, and specifications for this equipment were each assumed by 1898 & Co. for purposes of this Plan.

All above-grade equipment within the perimeter fence of the substation will be removed as part of decommissioning, including transformers, breakers, buildings, crushed rock surfacing, and fencing. All salvageable materials will be loaded onto trucks and hauled to a scrap yard for recycling. All other non-recyclable materials will be transported to approved disposal facilities.

All below-grade equipment and foundations associated with the substation will be removed to a depth of 48 inches below grade. Voids left from the removal of the below-grade foundations will be backfilled with surrounding soils and fine graded to provide suitable drainage.

### 5.2.7 Transmission Line

The Project is interconnected to the regional electric transmission grid through a high-voltage transmission line. This overhead 600 foot, 345-kV line transfers power from the Project substation to the Sherco Substation and was assumed to consist of approximately one steel pole structure.

All above-grade equipment associated with the transmission line (up to the point of change of ownership) will be removed as part of decommissioning, including structures, conductors, and cabling. All salvageable materials will be loaded onto trucks and hauled to a scrap yard for recycling. All other non-recyclable materials will be transported to approved disposal facilities.

All below-grade equipment and foundations associated with the transmission line will be removed to a depth of 48 inches below grade. Voids left from the removal of the below-grade foundations/structures will be backfilled with surrounding soils and fine graded to provide suitable drainage.

## 5.3 Site Restoration

Prior to commencing activities associated with foundation removal, crushed rock surfacing removal, or any other earthwork, an approved erosion control plan will need to be developed by the demolition contractor. Best management practices (“BMPs”) applicable at the time that decommissioning activities occur will need to be implemented by the contractor for control of storm water runoff. Since decommissioning activities are not anticipated to occur for 20 years or more, BMPs may differ from current standards, although if decommissioning takes place in the near future, 1898 & Co. would anticipate BMPs such as silt fencing, proper compaction, seeding, and mulching practices to be implemented. BMPs will need to be reviewed by the contractor prior to commencing decommission activities to determine the appropriate BMPs at that time. To the extent necessary, permits relating to decommissioning activities will need to be obtained. The costs included in this Plan are expected to be sufficient for a demolition contractor to develop suitable plans for the control of surface water drainage and water accumulation as well as for backfilling, soil stabilization, compacting, and grading prior to commencing demolition activities. Decommissioning of the Project will

involve the use of standard construction equipment such as truck-mounted cranes, loaders, bulldozers, dump trucks, and soil decompaction machinery.

The fenced area of the Project encompasses approximately 24 acres; approximately 5,500 linear feet of fence is assumed to be installed. The land within the perimeter fencing is predominantly Industrial. Voids left from the removal of underground equipment will be backfilled with surrounding soil and fine graded to provide suitable drainage. The area inside the fence will be graded and reseeded per the Project vegetation management plan.

#### 5.4 End of Life Management

As stated, the above-grade steel, aluminum, and copper equipment is expected to have significant scrap value to a salvage contractor that will offset a portion of the decommissioning costs. All recyclable materials will be recycled to the extent possible, while all other non-recyclable waste materials will be disposed of in accordance with state and federal law.

Any fluids were assumed to be drained from their containers and the contents disposed of prior to demolition; these costs are excluded from the Plan. No allowances are included for unforeseen environmental remediation activities. Transformers will be removed and processed on-site. The cost to drain and dispose of transformer oil off-site is included in the Plan.

#### 5.5 General Decommissioning Assumptions

In addition to other assumptions noted herein, the following general assumptions were utilized for the Plan.

1. All costs are presented in current (2025) dollars using a site cost index of 93.5% for St. Cloud, Minnesota.
2. The Plan is based on information provided by Xcel, including the following design information for the Project: KMZ layout. Other Project-related information was assumed by 1898 & Co.
3. An approved disposal facility will be used for the disposal of debris from decommissioning activities. If an approved disposal facility such as Vonco II Waste Management Campus is used for the disposal of demolition waste, the hauling distance is approximately 2.25 miles from the Project and the cost for disposal of debris and concrete is \$44.6 per ton.
4. It was assumed batteries will be recycled at a fee of \$0.50 per pound based on an average of battery recycling quotes. This fee is subject to change and may greatly impact the Plan.
5. Scrap values are based upon an average of monthly American Metal Market prices; the most recent 12-month period June 2024 through July 2025 was used for the Plan. These values include the cost to haul the scrap via truck and/or rail to the major market which provides the best market at the time of this Plan is Chicago, Illinois. Prices used include:
  - a. Steel scrap value of \$226.53 per net ton
  - b. Copper scrap value of \$3.23 per net pound
  - c. Aluminum scrap value of \$0.48 per net pound
6. Any fluids were assumed to be drained from their containers and the contents disposed of prior to demolition; these costs are excluded from the Plan. No allowances are included for unforeseen environmental remediation activities.
7. All underground equipment will be removed to a depth of 48 inches below grade. All structures or foundations greater than 48 inches below grade will remain and are excluded from the Plan.
8. It was assumed that all disturbed areas will be restored to original grade, reclaimed with native soils, seeded, and replanted with native vegetation consistent with the surrounding land use per the Project vegetation management plan.
9. Transformers will be removed and processed on-site. The cost to drain and dispose of transformer oil off-site is included in the Plan.

10. The Project laydown yards utilized during construction of the Project were assumed to have been previously reclaimed and restored via the Project vegetation management plan; no further grading, seeding, or other restoration of these areas is included in the Plan.
11. The Plan include 5 percent indirect and 20 percent contingency.
12. Market conditions may result in cost variations at the time of contract execution.
13. Valuation and sale of land, as well as replacement generation costs, are excluded from this scope.

## 6.0 Detailed Cost Estimate

The total cost to decommission the Project at the end of its useful life, based on the assumptions noted herein, is estimated to be approximately \$32,484,700; a detailed breakdown of these costs is included in Table 6-1 below.

Table 6-1: Decommissioning Cost Summary (2025\$)

Project Facilities	Cost
BESS Module Removal Cost	\$21,927,600.00
BESS Container Removal Cost	\$536,800.00
BESS Foundation	\$329,600.00
BESS MV and Auxiliary Transformer Removal	\$414,700.00
Collection System Removal Cost	\$5,614,800.00
Substation Removal Cost	\$387,900.00
Transmission Line Removal	\$4,400.00
Civil Works	\$1,309,500.00
<b>Total Estimated Cost</b>	<b>\$30,520,900.00</b>
Owner Indirects (5%)	\$1,526,000.00
Contingency (20%)	\$6,104,200.00
<b>Total Gross Cost</b>	<b>\$38,151,100.00</b>
Estimated Scrap / Salvage Value	\$(5,666,400.00)
<b>Total Net Cost</b>	<b>\$32,484,700.00</b>

## 7.0 Financial Assurance

Xcel will be responsible for all costs of decommissioning the Project and associated facilities based on the above cost as required by the PUC, including escrow or surety bond. At this time, it is assumed that the PUC will determine the sufficient financial assurance requirement as part of their review process. Xcel utilizes the net salvage rate methodology used for all its generation facilities. At the time of decommissioning, the costs of removal will be treated as a debit to Xcel's depreciation reserve and the reserve balance will be reduced. The Company will seek PUC approval of the net salvage rates used for the Project ahead of decommission activities commencing. The Company will re-evaluate this plan every five years after operation. Each revised plan will reflect advancements in construction techniques, reclamation equipment, and decommissioning standards.

## APPENDIX A - COST ESTIMATE SUMMARIES

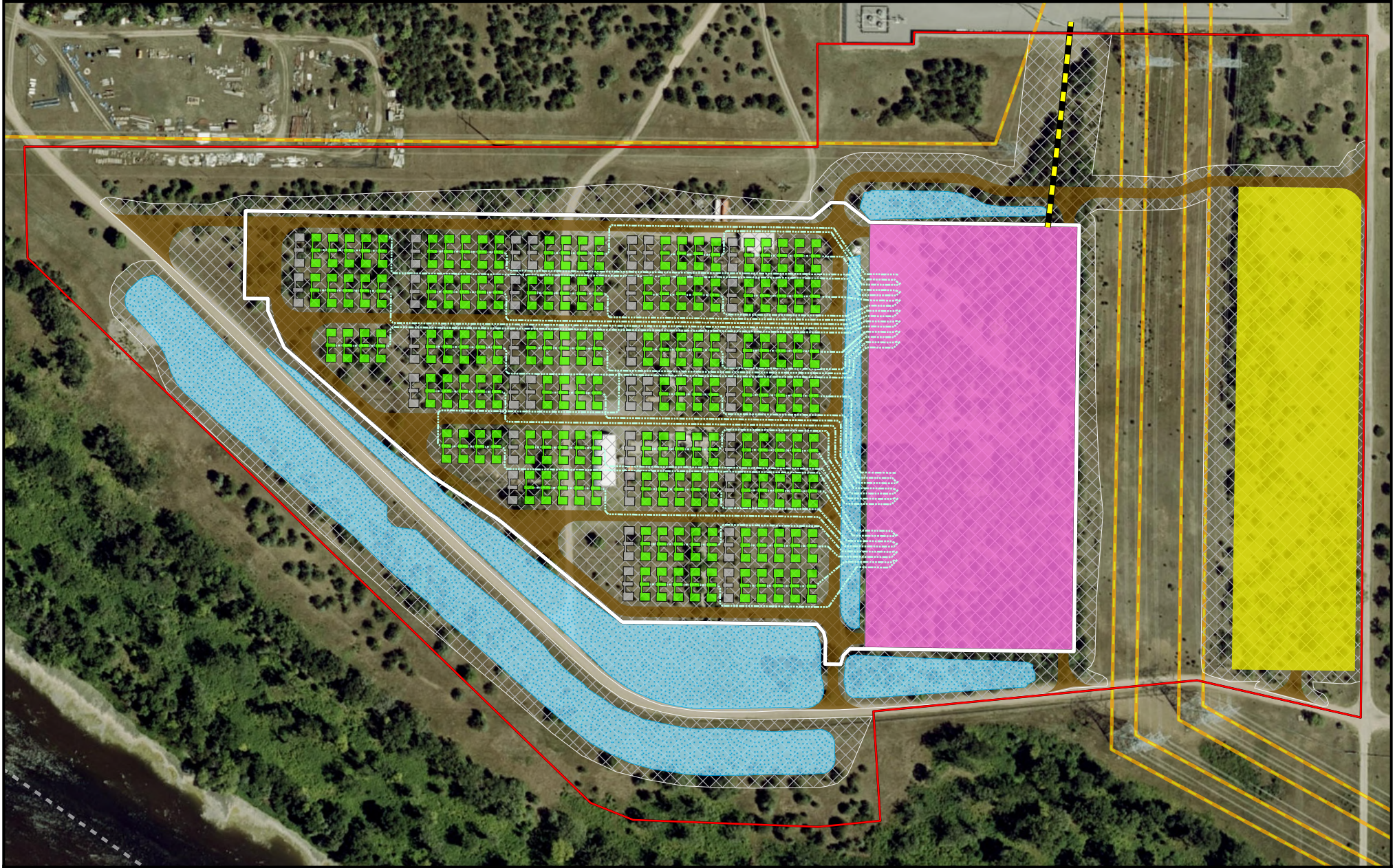
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**Table A-1**  
**Sherco South and West BESS**  
**Decommissioning Cost Summary**

BESS Module Removal Cost	Quantity	Unit	\$/Unit	Rounded Cost
<b>BESS Module Removal</b>				
Disconnect Batteries	28160	EA	\$ 62.00	\$ 1,750,900.00
Battery Recycling	40353412	lb	\$ 0.50	\$ 20,176,700.00
Total				\$ 21,927,600.00
<b>BESS Container Removal Cost</b>				
BESS Container Removal	704	EA	\$ 762.00	\$ 536,800.00
Total				\$ 536,800.00
Scrap Total	Steel 12804	ton	\$ (227.00)	\$ (2,900,600.00)
				\$ (2,900,600.00)
<b>BESS Foundation</b>				
<b>BESS Foundation Removal</b>				
Pile	22528	VLF	\$ 15.00	\$ 329,600.00
Total				\$ 329,600.00
Scrap Total	Steel 68	ton	\$ (227.00)	\$ (15,300.00)
				\$ (15,300.00)
<b>BESS MV and Auxiliary Transformer Removal</b>				
Removal of MV Transformer Skid	88	EA	\$ 1,625.00	\$ 143,000.00
Removal of Auxiliary Transformer	8	EA	\$ 1,625.00	\$ 13,000.00
Debris Hauling & Disposal	489	ton	\$ 56.00	\$ 27,200.00
Foundation Removal				
Pad	1295	CY	\$ 148.00	\$ 191,400.00
Transformer Foundation Removal				
Pile	128	VLF	\$ 15.00	\$ 1,900.00
Crushed Rock Debris Hauling & Disposal	2591	ton	\$ 15.00	\$ 38,200.00
Total				\$ 414,700.00
Scrap Total	Steel 785	ton	\$ (227.00)	\$ (177,900.00)
	Copper 414826	lb	\$ (3.00)	\$ (1,339,300.00)
				\$ (1,517,200.00)
<b>Collection System Removal Cost</b>				
Wiring Removal Cost	821500	LF	\$ 7.00	\$ 5,614,800.00
Total				\$ 5,614,800.00
Scrap Value	Copper 267809	lb	\$ (3.00)	\$ (864,600.00)
				\$ (864,600.00)
<b>Substation Removal Cost</b>				
Substation Removal Cost	1	EA	\$ 386,562.73	\$ 386,600.00
Hauling & Disposal Cost	29	ton	\$ 44.60	\$ 1,300.00
Total				\$ 387,900.00
Scrap Value	Steel 1626.7979	ton	\$ (226.53)	\$ (368,500.00)
	Copper 59.72645	lbs	\$ (3.23)	\$ (200.00)
				\$ (368,700.00)
<b>Transmission Line Removal</b>				
Transmission Line Removal	13155	ft	\$ 0.33	\$ 4,400.00
Total				\$ 4,400.00
Scrap Total	Steel 4	tons	\$ (906.13)	\$ (900.00)
	Aluminum 11826.345	lbs	\$ (5,688.52)	\$ (5,700.00)
				\$ (6,600.00)
<b>Civil Works</b>				
Crushed Rock Road Removal & Haul	38812	ton	\$ 15.00	\$ 571,600.00
Perimeter Fence Removal	3690	LF	\$ 6.00	\$ 20,800.00
Rough Grade Disturbed Area	24	Acre	\$ 3,226.00	\$ 77,600.00
Import /Spread Topsoil	19406	CY	\$ 28.00	\$ 546,200.00
Hydroseed	1048	MSF	\$ 89.00	\$ 93,400.00
Total				\$ 1,309,500.00
<b>Total Decom Cost</b>				\$ 30,520,900.00
<b>Project Indirects (5%)</b>				\$ 1,526,000.00
<b>Contingency (20%)</b>				\$ 6,104,200.00
<b>Total Project Cost</b>				\$ 38,151,100.00
<b>Total Scrap</b>				\$ (5,666,400.00)
<b>Total Net Project Costs</b>				\$ 32,484,700.00

## APPENDIX B - PLANT AERIAL

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Project Site	Proposed Gen-tie	Proposed Access Road
Proposed BESS Container	Proposed Fence Line	Proposed Preliminary Development Area
Proposed Future Augmentation Block	Proposed Substation	Existing Transmission Lines
Proposed Collection Lines	Proposed Laydown Yard	
	Proposed Stormwater Basin	

Scale in Feet



**Sherco Energy Storage System**  
**Figure 2**  
**Project Facilities**  
**City of Becker, MN**



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