APPENDIX H
Decommissioning Plan

Castle Rock Solar Project
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Decommissioning Plan
Castle Rock Solar Project
Dakota County, Minnesota

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Table of Contents

LIST OF TABLES

LIST OF FIGURES

1.0 INTRODUCTION

Castle Rock Solar LLC (Castle Rock Solar) is proposing to construct and operate the Castle Rock Solar Project (Project) southeast of the City of Farmington, Dakota County, Minnesota. The Project footprint encompasses approximately 932.2 acres within perimeter fencing. The maximum generating capacity of the Project photovoltaic system will be up to 150 megawatts (MW), alternating current (AC) at the point of interconnection (POI).

This Decommissioning Plan (Plan) provides a description of the decommissioning and restoration phase of the Project. Start-of-construction is planned for August 2026, with a projected Commercial Operation Date anticipated in October 2027. Major components of the Project include solar modules and associated trackers and steel piles; inverter stations; access roads; perimeter fencing; electrical collection system and a substation (Figure 1).

This Plan is applicable to the decommissioning/deconstruction and restoration phases of the Project and has been prepared as a summary of the activities and financial commitments required by the Minnesota Public Utilities Commission (MPUC) and in accordance with landowner lease agreements. Castle Rock Solar is committed to completing the decommissioning of the Project according to the conditions described within the Minnesota Department of Commerce Energy Environmental Review and Analysis (EERA) Application Guidance for Site Permitting of Solar Farms (Guidance).

A summary of the components to be removed is provided in Section 1.1. Summaries of the estimated costs and potential salvage value associated with decommissioning the Project are provided in Section 4.

1.1 FACILITY COMPONENTS

The main components of the Project include:

- Solar modules and associated electrical cabling
- Tracking system and steel piles
- Inverter and transformer stations
- Electrical cabling and conduits (above and below ground)
- Perimeter fencing
- Site access and internal roads
- Operations and maintenance (O&M) structure
- Project substation and overhead transmission generation tie-in line

1.2 TRIGGERING EVENTS AND EXPECTED LIFETIME OF PROJECT

Project decommissioning may be triggered by events such as the expiration of lease agreement(s), abandonment, or when the Project reaches the end of its operational life. Abandonment of a solar facility is typically defined as when a facility ceases to transfer energy on a continuous basis for 12 months.

The anticipated lifetime of the Project is approximately 45 years. At the end of the Project's useful life, the modules and associated components will be decommissioned and removed from the Project site. Castle Rock Solar will be the party responsible for decommissioning and restoring the site.

Components of the facility that have resale value may be sold in the wholesale market. Components with no wholesale value will be salvaged and sold as scrap for recycling or disposed of at an approved offsite licensed solid waste disposal facility (landfill). Decommissioning activities will include removal of the solar arrays, and associated components as listed in Section 1.1 and described in Section 2 and restoration activities as described in Section 3.

1.3 DECOMMISSIONING SEQUENCE

Decommissioning activities are anticipated to begin within twelve (12) months of the Project ceasing operation and be completed within the removal period required by the various lease agreements (ranging from 180 days to 12 months from the start of decommissioning) which govern this item. Notice to landowners and applicable units of government will be sent at least 90 days prior to the start of decommissioning. Monitoring and site restoration may extend beyond the decommissioning period to achieve successful revegetation and rehabilitation. The anticipated sequence of decommissioning and removal is described below; however, overlap of activities is expected.

- Obtain required permits prior to the start of any onsite activities.
- Reinforce access roads, if needed, and prepare site for component removal.
- Install erosion control materials and other best management practices (BMPs) to protect sensitive resources and control erosion during decommissioning activities.
- De-energize solar arrays.
- Dismantle and remove panels and above-ground wiring.
- Remove tracking equipment and piles.
- Remove inverter/transformer stations along with support system and foundation pads.
- Remove above and below ground electrical cables
- Remove solar array and substation perimeter fence.
- Remove access roads and grade site (as required).
- De-energize and make the substation safe for removal.
- Coordinate with transmission owner to disconnect from grid at the POI.
- Remove substation and associated overhead transmission tie-in line.
- Remove O&M structure
- De-compact subsoils as needed, restore, and revegetate disturbed land to allow for pre-construction land use.

2.0 PROJECT COMPONENTS AND DECOMMISSIONING ACTIVITIES

This section describes the solar facility components and decommissioning activities necessary to restore the Project area to allow for land use similar to the use prior to Project construction.

2.1 OVERVIEW OF FACILITIES

Castle Rock Solar anticipates utilizing approximately 375,360 solar modules, with a total generating capacity of approximately 203 MW direct current (DC) with a maximum of 150 $MW_{[AC]}$ at the POI. The Project footprint encompasses approximately 932.2 acres of predominantly agricultural land within perimeter fencing as shown on Figure 1.

All foundations and steel piles will be removed. Electric cabling and conduit installed below the soil surface will be removed in accordance with landowner lease agreements. Access roads and fence may be left in place if requested and/or agreed to by the landowner; however, for purposes of this assessment, all access roads are assumed to be removed. Castle Rock Solar will communicate with the appropriate local agency to coordinate the repair of damaged or modified public roads during the decommissioning and reclamation process, and will coordinate with appropriate federal, state and/or local agencies for necessary permit approvals prior to decommissioning activities.

Estimated quantities of materials to be removed and sold, salvaged, or disposed of are included in this section. Many of the materials described have salvage value, although there are some components that will likely have none at the time of decommissioning. Removed materials that cannot be sold on the resale market will be salvaged or recycled to the extent possible. Other waste materials will be disposed of in accordance with state and federal law in an approved licensed solid waste facility.

Solar panels may have value in a resale market, depending on their condition at the end of the Project life. If the Project is decommissioned prior to the anticipated 45-year timeframe, the component's resale value will be substantially higher than at the end of the projected Project. Table 1 presents a summary of the primary components of the Project included in this decommissioning plan.

Table 1 Primary Components of Project to be Decommissioned

Component	Quantity	Unit of Measure
Solar Modules (approximate)	375,360	Each
Tracking System (equivalent full trackers)	3,910	Tracker
Steel Piles	46,920	Each
Inverter Stations with Steel Piers	40	Each
Below Ground Electrical Cables	64,944	Linear Foot
Perimeter Fencing	109,296	Linear Foot
Access Roads (approximate)	31,152	Linear Foot
Overhead Tie-in Transmission Line	200	Linear Foot

Component	Quantity	Unit of Measure
O&M Building (modular)	1	Each
Project Substation	1	Each

2.2 SOLAR MODULES

Statistics and estimates provided in this Plan are based on a First Solar Series 7 540-watt thin-film module. The module assembly (with frame) will have a total weight of approximately 87.5 pounds and will be approximately 90.6 inches long and 47.9 inches wide. The modules are mainly comprised of an anodized aluminum frame and various non-metallic materials such as silicon, glass, plastic, and epoxies.

At the time of decommissioning, module components in working condition may be refurbished and sold in a secondary market yielding greater revenue than selling as salvage material. The estimates in this report have been calculated using a conservative approach, considering revenue from salvage only, rather than resale of Project components.

2.3 TRACKING SYSTEM AND SUPPORT

The solar modules are planned to be mounted on a single-axis, one-in-portrait tracking system. Each tracker will be approximately 391 feet in length and will support 96 modules. Smaller trackers will be employed at the edges of the layout to efficiently utilize available space. The tracking system is mainly comprised of high-strength, galvanized steel and anodized aluminum; steel piles that support the system are assumed to be comprised of galvanized steel.

The solar arrays will be deactivated from the surrounding electrical system and made safe for disassembly. Liquid wastes, including oils and hydraulic fluids will be removed and properly disposed of or recycled according to regulations current at the time of decommissioning. Electronic components, and internal electrical wiring will be removed and salvaged. The steel piles will be completely removed from the ground.

The supports, tracking system, and posts contain salvageable materials which can be sold to provide revenue to offset the decommissioning costs.

2.4 INVERTER/TRANSFORMER STATIONS

The inverter and transformer stations are located within the arrays and will sit on platforms supported by steel piers. The inverters and transformers will be deactivated, disassembled, and removed. Depending on the condition of the unit at decommissioning, the equipment may be sold for refurbishment and re-use. If not re-used, they will be salvaged or disposed of at an approved solid waste management facility.

2.5 ELECTRICAL CABLING AND CONDUITS

The Project's underground electrical collection system will be placed at a depth of three feet (36 inches) or greater below the ground surface. This Plan assumes that all underground cabling will be removed in accordance with landowner lease agreements.

2.6 PROJECT SUBSTATION

A Project substation with a footprint up to approximately 6 acres will be constructed as part of the Project development adjacent to a 6-acre utility-owned switchyard. The substation will contain within its perimeter, a gravel pad, power transformer and footings, an electrical control house, and concrete pads, as needed. The substation transformer may be sold for re-use or salvage. Components of the substation that cannot be salvaged will be transported off-site for disposal at an approved waste management facility. Although the Project substation may remain at the end of the Project life, an estimated decommissioning cost has been included in this Plan. The switchyard will remain after Project decommisisioning.

2.7 OVERHEAD GENERATION TIE-IN TRANSMISSION LINE

An overhead electrical generation tie-in transmission line, approximately 200 feet in length, will be constructed between the Project substation and a proposed utility switchyard (the POI). Removal of the overhead generation tie-in transmission line is included in this Plan.

2.8 OPERATIONS AND MAINTENANCE BUILDING

Castle Rock Solar will include one operations and maintenance (O&M) building as part of the Project. The structure will be a modular building with connections to electrical or other services, as needed. The placement of the structure on the site will be in conformance with local and state building codes and will be removed during the decommissioning process.

2.9 PERIMETER FENCING AND ACCESS ROADS

The Project will include an eight-foot-high wildlife-permeable security fence around the perimeter of each solar array site and an eight-foot-high chain link fence around the Project substation. The total length of fences will be approximately 109,296 feet (20.7 miles).

Access drives from local roads and within the arrays will provide direct access to the solar facility and substation equipment. The access drives will be approximately 16 feet in width and total approximately 31,152 feet (5.9 miles) in length. The access drive lengths may change with final Project design. Landowners may choose to retain the access drives at completion of the Project; however, to be conservative, the decommissioning estimate assumes that all access drives will be removed. Access drives will be comprised of cement stabilized gravel.

During installation of the Project, site access drives will be excavated to remove topsoil, the subgrade will be compacted, and aggregate fill will be placed as necessary. This plan is based on a design of six inches of cement stabilized gravel. The estimated quantity of these materials is provided in Table 2.

Table 2 Typical Access Drive Construction Materials

Item	Quantity	Unit
Aggregate fill, 6-inch thick – to be removed	9,230	Cubic Yards

Decommissioning activities include the removal and stockpiling of aggregate materials onsite for salvage preparation. It is conservatively assumed that all aggregate materials will be removed from the Project site and hauled up to five miles from the Project area. Following removal of aggregate, the gravel access road areas will be de-compacted with deep ripper or chisel plow (ripped to 18 inches), backfilled with native subsoil and topsoil, as needed, and graded as necessary.

3.0 LAND USE AND ENVIRONMENT

3.1 SOILS AND LAND USE

The proposed Project is predominantly located on agricultural land. Areas of Project disturbance will be restored to substantially similar conditions that existed immediately prior to Project construction. Soils compacted during de-construction activities will be de-compacted, as necessary.

3.2 RESTORATION AND REVEGETATION

Areas of the Project that have been excavated and backfilled will be graded as previously described. If present, drain tiles that have been damaged will be restored to pre-construction condition. Restored areas will be revegetated in consultation with the current landowner and in compliance with regulations in place at the time of decommissioning. Work will be completed to comply with the conditions agreed upon by Castle Rock Solar, Project leaseholders, and the MPUC or other federal, state, and local regulations in affect at the time of decommissioning.

If permitted by the landowner who retains control of the land following decommissioning of the Project, Castle Rock Solar will monitor the site for successful revegetation.

3.3 SURFACE WATER DRAINAGE AND CONTROL

Project facilities are being sited to avoid impacts to wetlands and waterways. The existing Project site conditions and proposed BMPs to protect surface water features will be detailed in a Project Stormwater Pollution Prevention Plan (SWPPP) prior to the commencement of decommissioning construction activities.

Surface water conditions at the Project site will be reassessed prior to the decommissioning phase. Castle Rock Solar will obtain the required water quality permits from the Minnesota Department of Natural Resources (MNDNR) and the U.S. Army Corp of Engineers (USACE), as needed, before decommissioning of the Project. Decommissioning construction stormwater permits will also be obtained and a SWPPP prepared describing the protection needed to reflect conditions present at the time of decommissioning. BMPs may include enhancement of construction entrances, temporary seeding, permanent seeding, mulching (in non-agricultural areas), erosion control matting, silt fence, filter berms, and filter socks.

3.4 MAJOR EQUIPMENT REQUIRED FOR DECOMMISSIONING

The activities involved in decommissioning the Project include removal of the above- and below-ground ground components of the Project and restoration as described in Sections 2, 3.1 and 3.2.

Equipment required for the decommissioning activities is similar to what is needed to construct the solar facility and may include, but is not limited to: small cranes, low ground pressure (LGP) tracked excavators, backhoes, LGP tracked bulldozers and dump trucks, front-end loaders, deep rippers, water trucks, disc plows and tractors to restore subgrade conditions, along with ancillary equipment. Standard dump trucks may be used to transport material removed from the site to disposal facilities.

4.0 DECOMMISSIONING COST ESTIMATE SUMMARY

Expenses associated with decommissioning the Project will be dependent on labor costs at the time of decommissioning. For the purposes of this report, approximate 2024 market values were used to estimate labor expenses. Fluctuation and inflation of the labor costs or equipment were not factored into the estimates.

The value of the individual components of the Project will vary with time. In general, the highest component value would be expected at the time of construction with declining value over the life of the Project. During the early life of the Project, components such as the solar modules and batteries could be sold in the wholesale market for reuse or refurbishment. Secondary markets for used solar components include other utility scale solar facilities with similar designs that may require replacement equipment due to damage or normal wear over time; or other buyers (e.g., developers, consumers) that are willing to accept a slightly lower power output in return for a significantly lower price point when compared to new equipment. As efficiency and power production of the panels decrease due to aging and/or weathering, the resale value will decline accordingly.

4.1 DECOMMISSIONING RISK OVER THE LIFECYCLE OF A PROJECT

The probability of an event that would lead to abandonment or long-term interruption is extremely low during the first 15 to 20 years of the Project life. Accordingly, the risk of decommissioning the Project is extremely low during this time frame. The reasons why the risk to decommission the Project is extremely low in the early phases of the Project include, but are not limited to, the resale value of the facilities; power purchase agreements in place; manufacturer warranties on components; property damage and business interruption insurance coverage; and the value of renewable energy in general in the current market.

4.2 DECOMMISSIONING EXPENSES

Project decommissioning will incur costs associated with disposal of components not sold for salvage, including materials which will be disposed of at a licensed facility, as required. Decommissioning costs also include backfilling, grading, and restoration of the Project site as described in Sections 2 and 3. Table 3

summarizes the estimates for activities associated with removal of the major components of the Project and site restoration.

Table 3 Estimated Decommissioning Expenses

Activity	Unit	Quantity	Cost per Unit	Total
Overhead and management (includes estimated permitting required and public road repairs)	Lump Sum	1	$703,400	$703,400
Solar modules; disassembly and removal	Each	375,360	$5.15	$1,933,104
Tracking System disassembly and removal (equivalent full trackers)	Each	3,910	$790	$3,088,900
Steel pile/post removal	Each	46,920	$12.70	$595,884
Inverter and transformer removal with foundation	Each	40	$2,535.6	$101,424
Remove buried cable	Linear Feet	64,944	$0.91	59,099
Access road excavation and removal	Lump Sum	1	$27,700	$27,700
Restoration of access roads and rehabilitation of site	Lump Sum	1	$495,400	$495,400
Perimeter fence removal (wildlife fence)	Linear Feet	109,296	$3.10	$338,818
O&M building (modular)	Lump Sum	1	$50,000	$50,000
Project substation	Lump Sum	1	$330,000	$330,000
Removed above ground transmission line and poles	Linear Mile	0.04	$330,000	$13,200
Total Estimated Decommissioning Cost				**$7,736,929**

4.3 DECOMMISSIONING REVENUES

Revenue from decommissioning the Project will be realized through the sale of the facility components and construction materials. As previously described, the value of the decommissioned components will be higher in the early stages of the Project and decline over time. Resale of components such as solar panels is expected to be greater than salvage (i.e., scrap) value for at least the first ten years of the Project.

Modules and other solar facility components may be sold within a secondary market or as salvage. A current sampling of used solar panels indicates a wide range of pricing depending on age and condition ($0.10 to $0.30 per watt). Future pricing of solar panels is difficult to predict, due to the relatively young age of the market, changes to solar panel technology, and the ever-increasing product demand. A conservative estimation of the value of solar panels at $0.10 per watt would yield approximately $20,300,000. To preserve the integrity of the modules, higher removal and handling costs would be expected for module

resale versus salvage. However, although costs would be higher, the net revenue due to resale would still be substantially greater than the estimated salvage value.

The resale value of components such as trackers, may decline more quickly; however, the salvage value of the steel that makes up a large portion of the tracker is expected to stay at or above the value used in this report.

The market value of steel and other materials fluctuates daily and has varied widely over the past five years. Salvage value estimates were based on an approximate five-year-average price of steel derived from sources including on-line recycling companies and United States Geological Survey (USGS) commodity summaries. The price used to value the steel used in this report is $254 per metric ton; aluminum at $0.40 per pound; silicon at $0.40 per pound and glass at $0.05 per pound. The main component of the tracking system and piles is assumed to be salvageable steel. Solar panels are estimated to contain approximately 75 percent glass, 8 percent aluminum and 5 percent silicon. A 50 percent recovery rate was assumed for aluminum and all panel components, due to the processing required to separate the panel components. Alternative and more efficient methods of recycling solar panels are anticipated before this Project is decommissioned, given the large number of solar facilities that are currently being developed. Table 4 summarizes the potential salvage value for the solar array components and construction materials.

Table 4 Estimated Decommissioning Revenues

Item	Unit of Measurement	Quantity per Unit	Salvage Price per Unit	Total Salvage Price per Item	Number of Items	Total
Panels - Silicon	Pounds per Panel	2.2	$0.40	$0.880	375,360	$330,317
Panels - Aluminum	Pounds per Panel	3.5	$0.40	$1.400	375,360	$525,504
Panels - Glass	Pounds per Panel	32.8	$0.05	$1.640	375,360	$615,590
Tracking System and Posts	Metric tons per $MW_{[DC]}$	32.0	$254	$8,128	203	$1,649,984
Substation	Each	1	$50,000	$50,000	1	$50,000
Total Estimated Decommissioning Revenue – Solar Facilities						**$3,171,395***

* Revenue based on salvage value only. Revenue from used panels at $0.10 per watt could raise $20,300,000 as resale versus the estimated salvage revenue.

4.4 DECOMMISSIONING COST SUMMARY

Table 5 provides a summary of the estimated cost to decommission the Project, using the information detailed in Section 4.2. Estimates are based on 2024 prices, with no market fluctuations or inflation considered.

Table 5 Net Decommissioning Cost Summary

Item	(Cost)/Revenue
Decommissioning Expenses	**($7,736,929)**
Potential Revenue – salvage value of panel components and recoverable materials	**$3,171,395**
Net Decommissioning Cost/Revenue	**($4,565,534)**

4.5 FINANCIAL ASSURANCE

Castle Rock Solar will be the financially responsible party for decommissioning the Project and restoring the site to a condition similar to that which existed prior to the Project construction. As recommended in the EERA Guidance, Castle Rock Solar proposes the following schedule of decommissioning cost re-assessment and financial assurance. The schedule is based on Year 0 being the Project date of commissioning.

- Year 5 – Re-assessment of the net decommissioning cost; update to be provided to Dakota County Zoning Administrator or applicable Dakota County officer (Dakota County).
- Year 10 – Re-assessment of the net decommissioning cost and issuance of surety bond or other agreed upon method of financial assurance.
- Years 15 through end of Project life – Re-assessment of net decommissioning cost and update of financial assurance.

FIGURE

Figure 1 Proposed Project Layout