

# EXHIBIT E: DECOMMISSIONING NARRATIVE

CONFIDENTIAL



January 2024

Soyoung Park  
Samsung C&T Renewables  
707 Skokie Blvd  
Northbrook, IL 60062

**RE: *Carina Solar Decommissioning Plans Request***

Dear Soyoung,

Pursuant to your request for Decommissioning Memorandum and Cost Estimate associated with the Commercial Solar Energy System/Power Generation Facility Project in Bartholomew County, IN, kindly refer to the following pages. Should you have any questions, please feel free to contact me directly.

Please contact me at 317-218-9565 or [Liam.Sawyer@kimley-horn.com](mailto:Liam.Sawyer@kimley-horn.com) should you have any questions or concerns.

Sincerely,

Liam Sawyer, P.E.  
*Project Manager*

**CARINA SOLAR  
DECOMMISSIONING PLAN  
JANUARY 2024**

**Purpose**

This decommissioning plan is provided by Samsung C&T Renewables (the “Project Company”) and will detail the projected decommissioning demands associated with the proposed project.

The purpose of this decommissioning plan is to provide procedures and an opinion of probable construction cost for partial or full closure of the Commercial Solar Energy System/Power Generation Facility. Bartholomew County Code requires a Decommissioning and Site Restoration Plan, and performance guarantees to supplement plans submitted as part of a conditional use permit package. This decommissioning plan details provisions for facility deconstruction and site restoration to satisfy the specific guidelines set forth in the Project’s Conditional Use Permit. This decommissioning plan shall take effect upon facility abandonment, discontinuation of operation, or expiration of the use permit as defined by Bartholomew County Code.

**Site Location**

Carina Solar proposes to build a photovoltaic (PV) Commercial Solar Energy System/Power Generation Facility (“Solar Facility”) with a nameplate capacity of approximately 100 MW<sub>AC</sub> (“Project”), in Bartholomew County, IN. The Facility is located within tax parcel identification numbers (“Property”).

Name	Parcel Tax Number
Arnholt Brothers, LLC	03-86-05-000-000.200-004 03-86-05-000-000.201-004 03-96-32-000-000.702-004
Arnholt, Ronald B.	03-86-03-000-002.300-004 03-86-04-000-000.200-004
Arnholt Ronald & Teresa (Easement)	03-96-35-000-001.502-004
Crider, Brent J.	03-86-10-000-000.500-018
Daily, Gregory W.	03-86-11-000-000.101-018 03-86-01-000-000.800-017 03-86-01-000-000.803-017 03-86-02-000-000.100-004 03-86-02-000-000.105-004 03-86-02-000-001.200-004 03-86-02-000-000.200-004 03-86-02-000-001.300-004
Eiler, Gayle L.	03-96-35-000-001.400-004 03-96-34-000-003.100-004

Forster, D. Lynn, (1/2%) & D. Lynn Forster, Trustee Of The Elizabeth S Forster Trust (1/4%) & Frank C Forster Trust (1/4%)	03-86-09-000-000.500-018 03-86-09-000-000.700-018
Staci J. Goodwin and Jarrod C. Whipker	03-86-10-000-000.400-018 03-86-03-000-002.600-004 03-86-04-000-001.500-004
Hackman, John & Barbara	03-86-04-000-000.100-004 03-96-33-000-003.400-004
Hackman's Farm Market & Greenhouse LLC (Easement)	03-96-34-000-001.704-004
Hoeltke, Larry & Mary Jane	03-86-05-000-000.300-004
Landmark Farms & Livestock LLC. Kristin A. Whittington, Manager	03-86-03-000-002.500-004
Mark & Jana Fischer Farms LLC Mark Fischer, GP	03-96-33-000-003.300-004
Niemoeller, John Dale & Cynthia Dawn	03-96-32-000-000.801-004 03-96-33-000-003.000-004
Niemoeller, Mark R.	03-86-04-000-000.700-004 03-86-05-000-000.100-004 03-96-32-000-000.800-004
Page Kerry W (Easement)	03-96-34-000-002.300-004
Robert C. Niemoeller, an Undivided ¼ Interest and Delores I. Niemoeller, an Undivided ¼ Interest and Susan J. Scales, an Undivided 1/8 Interest and Mark R. Niemoeller, an Undivided 1/8 Interest and Ross W. Niemoeller, an Undivided 1/8 Interest and John D. Niemoeller, an Undivided 1/8 Interest	03-86-05-000-000.700-004
Sefcik, Bryan S.	03-86-04-000-001.100-004
Shuff, Michael R., a married man	03-86-04-000-000.402-004
The John William Steinker and Lucretia Anne Steinker Revocable Living Trust, dated August 14, 2020	03-86-04-000-000.800-004 03-86-04-000-000.801-004 03-86-05-000-000.202-004 03-86-05-000-000.203-004 03-86-05-000-000.204-004 03-86-05-000-000.500-004
The Loretta K. Vinson Revocable Trust Dated August 21, 2015 David Bonnell - Land Manager	03-86-04-000-000.400-004 03-86-04-000-000.500-004
Wehmiller, Willis	03-86-09-000-000.300-018
Route 3, LLC	03-96-34-000-002.000-004
Dwight David Smith and Janet S. Smith, husband and wife	03-96-34-000-000.400-004

## **Anticipated Service Life of the Project**

Unless the system is purchased by Bartholomew County/City of Columbus or other entity, the facility shall be decommissioned in accordance with this Decommissioning Plan ("Plan"), restoring the site to as close to its agreed-upon post-decommissioned state as practicably possible upon expiration or termination of the Power Purchase Agreement. The Commercial Solar Energy System/Power Generation Facility carries an expected useful lifetime of more than 30 years. The expected useful life of the Project is forty (40) years, and is expected to be operational for the full forty (40) years.

Decommissioning responsibilities include the removal of any perimeter fences, any concrete or steel foundations, all metal structures (mounting racks and trackers), all photovoltaic (PV) modules, pipelines, alternators, generators, aboveground and underground cables, transformers, inverters, fans, switch boxes, fixtures, etc. and otherwise restoring the premises to its original position or mutually-agreed upon state. Other Plan activities include the management of materials and waste, projected costs, and a decommissioning fund agreement overview.

## **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:

- Project owners have sophisticated financing structures that allow the lender or tax equity partner to step in and rectify the event that may lead to abandonment.
- Most critical solar components have original equipment manufacturer (OEM) warranties with terms exceeding five years that include labor and parts. A warranty is an agreement or guarantee outlined by a manufacturer to a customer that defines performance requirements for a product or service. Warranties give customers a form of insurance if the purchased product or service does not adhere to quality standards. These warranties assure the Project owner, financing parties, and other stakeholders, that equipment will perform as expected which minimizes the risk of a decommissioning event. Average warranty lengths for critical solar components range from 5 to 10 years, with production warranties on solar panels extending to 20 to 25 years.
- Solar projects consist of many networked components designed to convert solar radiation into electrical energy. The failure of any single component will not result in a substantial reduction of energy generation that could lead to a decommissioning event.
- Solar projects are required to maintain replacement value property damage insurance coverage and business interruption insurance coverage. Business interruption insurance covers the loss of income that a business suffers after a disaster or equipment failure. Typical solar business interruption insurance covers income loss for twelve months from the date of the event triggering the loss.
- The replacement costs of solar components will typically decline over time, and accordingly, costs to replace failed or damaged equipment after lapsed OEM warranties will not create large financial hurdles for the Project.

- In the early stages of the Project, the resale value of the equipment is significantly higher than the decommissioning costs, resulting in a net positive (revenue).

Considering the reasons stated above, a decommissioning bond early in the life of a solar project life is not required to assure the coverage facility removal and site restoration costs.

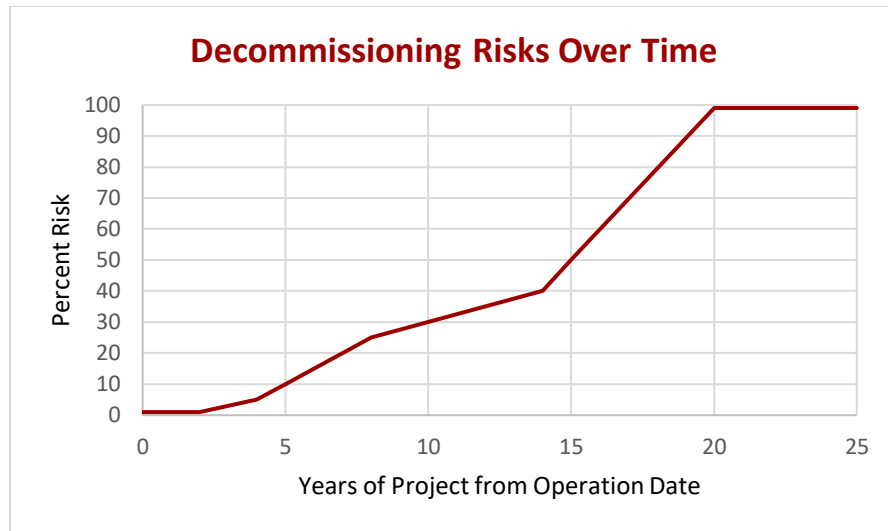
Solar power is an increasingly popular form of renewable energy around the world and as an alternative to the burning of fossil fuels, solar ranks alongside wind and hydropower as essential energy options for the future of the planet. Solar also offers the additional benefit of being easier to build, operate, and decommission with minimal environmental risks. Recent rises in popularity and use can be linked to lower installation and operation costs and it is expected that this pattern will continue, further reducing the risk of a decommissioning event.

### **Decommissioning Risks Over Time**

As previously noted, the probability of a decommissioning event that would lead to abandonment or long-term financial interruption is extremely low during the first 15 to 20 years of the Project life and accordingly, the financial risk to decommission the Project is also extremely low. A risk analysis approach is presented here for informational purposes only and has not been considered in the decommissioning cost estimates present in this Plan. It is important to note that there are two aspects to consider when evaluating the risk for decommissioning the Project:

1. The risk of the need to decommission the Project as a whole (Project termination risk), and
2. The risk of failing to recuperate the cost of the decommissioning activities (decommissioning funding).

The most important concern for Bartholomew County/City of Columbus is the ability to recuperate the cost of decommissioning and restoration of the land to pre-Project conditions. The presence of a Power Purchase Agreement (PPA) in the first 20 years of the Project makes the likelihood of decommissioning very low during that time. The graph below summarizes the estimated decommissioning risk of cost recovery for the Project. The graph utilizes a “one percent” risk as the lowest risk; however, the financial value of the Project or equipment in the early years would far exceed the cost of the decommissioning and restoration activities and therefore, the graph is conservative.



The factors taken into consideration in estimating the risk include, but were not limited to:

- Years 1-5 – Minimal Project termination or financial risk due to presence of PPA with guarantee to purchase power, resale of value components, component warranties, value of facility.
- Years 5-10 – Similar consideration of previous period, except minimal increased financial risk due to the decrease in resale value of used components and rise in technological improvements of new equipment in market.
- Years 10-15 – Similar consideration of previous period, with slightly increased risk as warranties start to expire. Value of equipment is still substantial but decreasing.
- Years 15-20 – Similar consideration of previous period, warranties continue to expire; value of equipment diminishes with age and technological improvements in market.
- Years 20-25 – PPA expires, Project termination and funding risks increase, value of equipment diminishes, and technological improvements in market. A rise in salvage value of removed equipment due to diminishing natural resources and improvements in the efficiency of recycling/extraction technologies will offset the cost of decommissioning.

### Commencement of Decommissioning

This Plan assumes that the Facility will be decommissioned under any of the following conditions:

1. The land lease (including the exercise of any extension options) ends and will either not be renewed or a new lease will not be entered into for the Project.
2. The system does not produce power for sale for a consecutive 12-month period, except in the instance of a force majeure event in which the Project is being repaired and/or restored.
3. The system is damaged and will not be repaired or replaced.

## **Removal of Nonutility Owned Equipment**

To decommission the Commercial Solar Energy System/Power Generation Facility, the Project will include at a minimum:

- Disconnection from the utility power grid
- Removal of all Facility components including but not limited to all solar arrays, electric systems and components, buildings, cabling, security barriers, interior drives, gravel areas, foundations, pilings, and fences.
- Removal of all non-utility owned equipment (at point of interconnection), conduits, structures, fencing, and foundations to a depth of at least three feet below grade.
- Restoration of surface grade and soil to pre-construction conditions, documented by pre-construction and post-decommissioning as-built topographic maps.

The owner of the leased property may request in writing for certain items to remain, e.g., access roads.

This decommissioning plan is based on current best management practices and procedures. This Plan may be subject to revision 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 necessary stakeholders prior to decommissioning.

Based on the extent of decommissioning, prior to beginning construction activities, the developer will submit applicable demolition and construction plans and permit applications which will outline the schedule and extents of demolition. Decommissioning activities will not begin prior to issuance of approved permits by local regulatory agencies with appropriate jurisdiction.

## **Restoration of Property**

In order to adequately restore the site to its previous condition, documentation using pre-construction video and/or digital photography will be performed prior to construction activities. This information will be reviewed prior to preparation of decommissioning demolition documents and included in the submittal to the County. Pre-construction documentation will also consist of detailed descriptions of existing vegetative and soil conditions as well as existing topography and drainage patterns.

At the time of decommissioning, the Project Company will restore the Commercial Solar Energy System/Power Generation Facility to a meadow-like condition. All waste and excess materials will be disposed of in accordance with municipal, provincial and federal regulations. Waste that can be recycled under municipal programs will be recycled accordingly. Provided, however, the Project Company shall not be required to replace any structures that were removed to build the Solar Facility.

The restoration will consist of de-compaction of the topsoil by disking or tilling and re-vegetation of the property. Mass grading is not anticipated since the initial project will not alter topography significantly. At the end of the project the area will be seeded and fertilized with native vegetation as needed to return the site to as close as practicable to original or initially agreed-upon condition. The future use of the land will. Deciding factors will be influenced by Bartholomew County/City of Columbus land use and comprehensive plans and regulations at such time in the future.



The developer will coordinate with Bartholomew County to monitor vegetation and drainage following restoration until permanent vegetation is established. Erosion and sediment control, re-seeding, soil stabilization, weed control and fertilization will be provided by the developer as needed until the site is stabilized and approved to be completed by Bartholomew County.

Upon completion of the site restoration, a final report of activities will be submitted to Bartholomew County documenting the process and results.

### **Time Period to Complete Decommissioning**

The Project Company will have twelve (12) months from the date decommissioning commences in order to complete decommissioning. Provided, however, the Project Company shall be able to request an extension of an additional duration if it is in good faith diligently decommissioning and is delayed due to weather conditions or other items outside its control.

### **Party Responsible for Decommissioning**

The Project Company is responsible for this decommissioning, provided however that the Project Company may contract with a third-party to perform the decommissioning on its behalf. Nothing in this plan relieves any obligation that the real estate property owner may have to remove the Facility as outlined in the Conditional Use Permit in the event the operator of the Facility does not fulfill this obligation.

### **Decommissioning Cost Estimate and Bonding**

An engineer's opinion of probable construction cost will be prepared as part of this decommissioning plan. Exhibit A will summarize probable costs associated with decommissioning exclusive of salvage values. Exhibit B will summarize probable costs associated with trucking panels to approved recycling facilities.

Bartholomew County Code requires Carina Solar, LLC to provide a faithful performance bond as a financial guarantee for proper decommissioning. This bond is separate from, and in addition to, performance bonding submitted for permitting. Furthermore, Carina Solar, LLC will be required to submit detailed engineering plans at the time of decommissioning, and obtain construction permits as required by appropriate authorities.

Industry standard prices for removal costs (labor, material and equipment) were determined using RSMMeans cost data. Removal cost includes materials, contractor installation/demolition, mobilization and demobilization, overhead and profit, performance bonding, contingency, and engineering plans and permitting.

Total probable cost of decommissioning is estimated to be **TBD**.