PEBBLE SOLAR, LLC

5 MW COMMUNITY SOLAR FACILITY

Prepared by: Pebble Solar, LLC
McHenry County Conditional Use Permit Application
Initial Submission: June 30, 2025
Revised Submission: July 21, 2025

Introduction

Pebble Solar, LLC is a limited liability company owned by Cultivate Power, LLC. Pebble Solar, LLC, the Applicant, has prepared this application for a 5 megawatt (MW) solar energy and battery energy storage system facility in McHenry County, Illinois. This 5 MW solar energy and battery facility may be referred to herein as "Pebble Solar" or "the project."

We submit this request on behalf of the property owners, Edward Sincere and Chris Biggus. Cultivate Power, LLC, or another qualified solar farm owner and operator, will provide financial backing and technical expertise to ensure the success of Pebble Solar. Cultivate Power is a dedicated distributed generation solar developer focused on Illinois. Our team has a combined 100 years of experience developing and financing solar projects and we are excited to bring solar power to McHenry County.

We are excited by the opportunity to provide McHenry County with a long-term source of clean, sustainable energy. Beyond that, the project will generate income for our landowner, create an opportunity for ComEd customers to subscribe to power at or below market rates, and increase the local tax base.

This application was prepared according to the requirements detailed in Title 16: Unified Development Ordinance, Chapter 16.56.030, Subsection PP and Chapter 16.20.40, Subsection E, Approval Standards for Conditional Use Permits of McHenry County Illinois, Code of Ordinances. Pebble Solar respectfully submits information, exhibits, and materials which are hereby incorporated into and made part of the Application below in order to comply with the McHenry County Conditional Use Permit Standards for Issuance.

We thank you for your consideration and look forward to working together to bring the benefits of a solar and battery energy facility to the area. Please let me know if I can provide additional information or assistance.

Sincerely,
Dylan Haber
312-447-1890
haber@cultivate-power.com
Cultivate Power

Project Overview

Project Name: Pebble Solar, LLC
Project Address: 6415 & 6517 Bull Valley Rd, McHenry, IL 60050
PINs: 14-05-400-006 & 14-05-400-004
Nearest Cross Streets: Bull Valley Rd and S Curran Rd
Size: 5 MWac
Acreage: 63 acre parcel area, 33 acre project area
Landowners: Edward Sincere and Chris Biggus

Pebble Solar, LLC will contain rows of Photovoltaic (PV) cell modules mounted on posts set in the ground. The project currently anticipates that a battery storage system will also be incorporated into Pebble Solar. The project will be a self-contained, low-impact development requiring little to no local municipal services.

Pebble Solar will bring significant economic and energy benefits to McHenry County and will not negatively impact public health, safety or general welfare, nor will it affect the comfort and convenience of the public or of the immediate neighborhood.

Pebble Solar was determined as an ideal location for solar farm development for a variety of factors including:

- → Proximity to relevant electrical and road infrastructure
- → Likelihood of wetlands and other protected landforms or species
- → Slope of land and direction of this slope
- → Interest from our landowner
- → Current zoning district and surrounding uses

The project will have minimal impact on surrounding properties, which are predominantly zoned Agricultural.

The anticipated power output of the project is approximately 8 million kilo-watt hours (kWh) annually, enough to power approximately 1,100 single-family homes.[1] Pebble Solar expects to invest an estimated $7,000,000 into the project; create 24 local jobs during construction[2]; and significantly increased property tax revenue over the lifetime of the project. Cultivate Power is a proud partner of each community that we work with, and we look forward to a continued relationship with McHenry County.

[1] https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator
[2] https://www.seia.org/research-resources/national-solar-jobs-census-2020

Solar Overview

Solar Technology

Pebble Solar will contain rows of Photovoltaic (PV) cell modules mounted on posts set in the ground. These rows of modules are referred to as "solar arrays" mounted on a single axis tracking system, which allows them to follow the sun throughout the day. The modules face east in the morning, are horizontal at midday, and face west in the afternoon, and are no more than fifteen (15) feet high at max tilt. Solar components will comply with the current edition of the National Electric Code, are UL Listed or equivalent, and will have an anti-reflective coating.

The project currently anticipates a battery storage system will also be incorporated into Pebble Solar, LLC. The battery will meet all applicable codes including NFPA and UL standards.

The basic components of any solar energy facility include: PV modules, inverters, combiner boxes, transformers, battery, wires and conductor cables, structural racking system for PV modules, an access road, and perimeter fencing. Solar electricity production includes the following components:

1. Electrical Power Generation. Sunlight strikes the PV module cells, which convert photons of light into electrons, producing low-voltage, Direct Current (DC) electricity.

2. Combiner Boxes. The low-voltage, DC electricity is fed through cables from each PV module to a combiner box.

3. Inverters. The low-voltage, DC electricity is fed through cables from the combiner box to an inverter, where it is converted to low-voltage, Alternating Current (AC) electricity.

4. Transformers. The transformer steps up the low-voltage, AC electricity to the appropriate voltage so that it can be fed into the electrical transmission system.

5. Battery Storage. The battery can store electricity generated by the solar system in order to distribute the energy to the local grid when the electricity is in higher demand.

6. Utility Distribution. Electricity is sent through the electrical sub-transmission lines to utility distribution systems for delivery to ratepayers.

Current photovoltaic modules are typically Crystalline Silicone (C-Si) and Thin Film (TF). The solar PV modules function as a solid state, inert crystal, similar to a pane of solid glass. The modules do not corrode and do not produce any emissions. The technology is encapsulated in layers of plastic and glass to prevent air and moisture from entering the cell and conversely prevents the release of materials out of the module and into the environment. The solar panels are expected to work upwards of 40 years before they are recycled to recover the valuable materials contained inside.

Current battery technology is typically lithium-ion batteries. The battery can enhance the electric grid by storing electricity produced by the solar panels and deploying that power to the grid at times of high stress.

Glare

Photovoltaic solar energy systems are designed to reduce reflection and have low potential to produce hazardous glare. Modules are covered with anti-reflective coating and demonstrate less glare than windows and water.

Sound

The solar energy system produces minimal sound during the day and no sound overnight. The main source of noise is from the inverter, but this noise cannot be heard beyond the project boundary. The inverter rated at 67 decibels, about the volume of a washing machine, at 10 meters.

Environmental Impact

Pebble Solar will contract environmental consultants to perform field investigations, literature reviews, and agency consultations to identify and assess existing environmental conditions at the project site. Information derived from the environmental diligence is used by Cultivate to avoid and minimize effects to environmental resources during the design process. Full compliance with federal, state, and local regulations will ensure Pebble Solar will not result in adverse impacts to environmental resources. Pebble Solar has consulted with the Illinois Department of Natural Resources regarding protected species.

Pebble Solar will comply with the McHenry County Stormwater Management Ordinance and NPDES permit requirements.

Safety

Pebble Solar will be a safe facility that will not impact the well-being of local residents or McHenry County. Solar energy facilities are very safe, with simple and proven technologies.

The project will be constructed according to all required building and electrical codes and safety measures. Site plans will be approved by all applicable local authorities and regularly visited throughout construction as required by the McHenry County or by the State of Illinois' building codes. Energized system components, such as inverters, will be commissioned by the manufacturers' technicians. The project will employ required lock-out measures and safety warnings. A 7' tall security perimeter fence per National Electrical Code regulations will prevent trespassing and vandalism. Access codes to the gate will be provided to the Police Department, Fire Department, and emergency service providers. Vehicular access to the site is adequate for the proposed use and for emergency services.

The regular vegetation control methods prevent buildup of debris that could otherwise pose risk of fire material, thus Pebble Solar will pose no increased risk of fires to the surrounding areas.

Pebble Solar will continue to coordinate with all necessary Federal, State, and County agencies and other entities throughout the planning process.

Construction Overview

Timeline

The construction of Pebble Solar is expected to take approximately 20-26 weeks using standard solar construction procedures. The utility's engineering, procurement, and construction of the interconnection facilities will take 6-18 months total and will be complete just before the construction of the solar farm itself. Finally, the solar farm energy facility will go through 2-3 months of commissioning before reaching commercial operation.

Finances and Labor

Pebble Solar expects to invest an estimated $7,000,00 into the project. These costs are based on build cost assumptions and include all construction, material, labor, and professional service-related expenditures. Cultivate Power, in combination with tax equity and debt partners, will provide the financial backing for the project.

Approximately $4,000,000 of the project cost will benefit the local economy including expenditures on parts and labor, goods and services, fuel and lodging, dining and other consumer resources. Pebble Solar will result in the creation of approximately 24 local jobs during construction provided that qualified, local labor is available. Cultivate Power hires and works with qualified, local subcontractors wherever possible. Local contractors are most familiar with local practices and authorities, which streamlines work on our projects.

Soil, Grading, and Vegetation

Most sites require minimal grading and an entire facility can often be installed with minimal soil disturbance. Soil will not be removed from the site except in the case of remediation. Structural frames are driven into the ground with steel beams on which PV modules are mounted. The battery storage system, inverters and transformers are mounted on top of small concrete pads – the only concrete on the project. The project area will be seeded with native plantings.

Drain Tile

Pebble Solar is committed to maintaining the integrity of existing drain tile conditions. Field tile will be surveyed prior to construction and repaired or replaced if impacted.

Traffic

A temporary and limited rise in vehicle traffic during the construction period is anticipated: approximately 2-15 personal cars and 1-10 trucks will visit the site per day.

Operation and Maintenance Overview

Equipment Maintenance

Once constructed, the project will be monitored remotely and will require minimal maintenance, anticipated 5-9 site visits per year. The project will not require on-site manning, nor will it require sewer, water, or other services.

Vegetation Maintenance

Pebble Solar is committed to landscaping best practices that stabilize the soil to add strength and durability for the long-term success of the project and the health of the land. Based on the specific site, local plantings will be chosen and maintained to prevent erosion, manage run off, and build soil. Seeding will be from a mix of local plants.

Pebble Solar will maintain vegetation for property within the fence line and property immediately surrounding fencing (within reason), specifically ensuring vegetation does not encroach on solar panels. Frequency of vegetation management visits is determined by both regional and seasonal factors. We anticipate mowing will occur at the Pebble Solar site at maximum 6 times a year.

Traffic Safety

No significant traffic impacts are anticipated due to Pebble Solar. With no more than one to three vehicle visits per quarter on average, the project will not be a significant traffic generator and will not cause undue harms to the surrounding road networks, to local responders, or to the Illinois Department of Transportation.

Decommissioning

Commitments and Code Adherence

Pebble Solar, LLC guarantees that Pebble Solar shall be removed, at the expense of the operator, at the end of the project lifetime or in the unlikely event that the system ceases power production according to the conditions below. The project will comply with McHenry County decommissioning requirements and will sign an Agricultural Impact Mitigation Agreement (AIMA) with the Illinois Department of Agricultural that further commits Pebble Solar to proper decommissioning processes.

Decommissioning Conditions

Decommissioning will occur as a result of any of the following conditions:

- The land lease expires or is terminated; or
- The solar energy system the ("SES") does not produce power for a period of 12 consecutive months

Decommissioning Steps

If any of the decommissioning conditions are met, the operator is responsible for decommissioning steps including:

- Remove all Operator-owned equipment, conduits, structures, and foundations to a depth of at least five feet below grade; and
- Remove all fencing, unless the owner of the leased real estate requests in writing for it to stay in place;
- Remove concrete pads, metal structures (mounting racks and trackers), all photovoltaic (PV) modules, pipelines, alternators, generators, aboveground and underground cables, transformers, inverters, battery energy storage system (BESS) batteries, BESS shells, fans, switch boxes, fixtures, etc.; and
- Take the following steps to restore the land:
    - Grade to maintain existing drainage patterns at the time of decommissioning unless stated otherwise by the leading Authority Having Jurisdiction (AHJ) or in any governing decommissioning ordinance;
    - Reseed the land using local non-invasive grasses; and
    - Maintain the grass for a total of three months after the seeding.

Financial Assurance

Pebble Solar will provide McHenry County with financial assurance of decommissioning in the form of a surety bond as determined by the decommissioning estimate. The preliminary decommissioning estimate is approximately $550,000. Pebble Solar will submit a surety bond to the McHenry County zoning office prior to building permit issuance. According to the Standard Solar AIMA V.8.19.19, we propose financial assurance be posted as follows:

- 10% prior to the end of the first year of operation
- 50% prior to the end of the sixth year of operation
- 100% prior to the end of the eleventh year of operation

Plan Changes

Updates to the decommissioning plan will be submitted within 30 days to the McHenry County Planning and Development Department by the party responsible for decommissioning the SES.

Commercial Solar Ordinance – Title 16: Unified Development Ordinance, Chapter 16.56.030 (Principal Use Standards), Subsection PP (Commercial Solar Energy Facility)

PP. *Commercial solar energy facility.* Conditional use permits for a commercial solar energy facility shall have no time limit, unless the use is abandoned as specified in subsection PP.4. below (Commercial solar energy facility: Abandonment), or the permit is revoked in accordance with § 16.20.040 I. (Revocation of Conditional Use Permits).

1. *Application.*
   a. A threatened and endangered species consultation (EcoCAT) from the Illinois Department of Natural Resources is required at the time of conditional use permit application for any site that is five (5) acres or greater in size and currently in agricultural use or undeveloped.
   Pebble Solar has completed an Ecological Compliance Assessment Tool (EcoCAT) assessment with the Illinois Department of Natural Resources.

   b. A site plan shall be provided showing all improvements, including structures, fencing, power lines (above and below ground), lighting, and landscaping, at a detail sufficient to understand the location, height, appearance, and area.
   A detailed site plan has been provided that shows existing conditions of the property as well as the proposed improvements. It depicts the solar array, battery energy system, structures, fencing, power lines, driveways, etc.

   c. All other application submittal requirements outlined in the *Planning and Development Department Zoning Application Packet* as published on the McHenry County Website.
   Pebble Solar has submitted all requirements outlined in the Planning and Development Department Zoning Application Packet via the McHenry County Portal.

2. *Site design.*
   a. Solar panels, structures, and electrical equipment, excluding fences and power lines for interconnection, shall be erected no less than fifty (50) feet from any lot line and no less than one hundred fifty (150) feet from any residence, other than a residence on the same ownership parcel.
   The project panels, structures and electrical equipment will comply with the setback requirements outlined above. These setbacks are incorporated into the Site Plan.

   b. No structures, excluding power lines for interconnection, may exceed twenty (20) feet in height. Power lines shall be placed underground to the maximum extent possible.
   The project will comply with the requirement to keep all structures, (excluding power lines for interconnection, less than 20 feet in height. Power and communication lines running between solar panels will be secured using a cable management system. The remaining DC power and communication lines will be buried underground. To support the

requirement utility interconnection equipment, utility poles and power lines will be installed overhead to connect into existing overhead infrastructure.

c. Lighting must comply with § 16.60.020 (Exterior Lighting).
There is no lighting on site.

d. Solar panels shall have a surface that minimizes glare and shall comply with § 16.60.040D. (Lighting and Glare).
Photovoltaic solar energy systems are designed to reduce reflection and have low potential to produce hazardous glare. Modules are covered with anti-reflective coating and demonstrate less glare than windows and water.

e. The facility shall be situated as to minimize impacts to woodlands, savannas, wetlands, drainage tiles, and encroachment into flood plains. All site development shall comply with the Stormwater Management Ordinance. Any damaged drainage tiles shall be repaired.
Pebble Solar has been situated to minimize impacts to impacts to the surrounding environment and will comply with the Stormwater Management Ordinance. The project will repair any damage to the drain tile system.

f. In order prevent erosion, manage run-off, and provide ecological benefit, the facility shall be planted with "low-profile" native prairie species, using a mix appropriate for the region and soil conditions per Illinois Department of Natural Resources (IDNR) standards, as amended from time to time.
The project will provide a Vegetation Management Plan outlining the native prairie species mix appropriate for the region and soil conditions in alignment with the IDNR standards, prior to building permit issuance.

g. Fencing shall be provided in compliance with the National Electrical Code, as applicable. The use of barbed wire must comply with § 16.56.050H.1.c. of this Ordinance
The project will be surrounded by a 7' tall perimeter security fence, per National Electrical Code regulations, to prevent trespassing and vandalism

h. Any part of the facility that is within five hundred (500) feet of a NONPARTICIPATING RESIDENCE, or road right-of-way, shall be landscaped with an arrangement of native shrubs, subject to approval by the County Board, unless the facility is screened from view by existing vegetation.
Pebble Solar has included a landscaping buffer on the Site Plan. It exists where the project is within 500 feet of nonparticipating residences or road rights-of-way.

i. Prior to building permit issuance, the operator shall prepare a landscape monitoring and maintenance plan to ensure the establishment and continued maintenance of the native prairie species, all installed landscape screening, and all existing vegetation that provides required landscape screening.

The operator of the facility will prepare a landscape monitoring and maintenance plan to ensure establishment and oversight of vegetation screening and prairie species maintenance, prior to building permit issuance.

j. Prior to scheduled public hearing, the operator shall enter into an Agricultural Impact Mitigation Agreement with the Illinois Department of Agriculture (IDOA), as required by that department.
Pebble Solar has executed an Agricultural Impact Mitigation Agreement with IDOA, which is being submitted as a part of this application.

k. Prior to building permit issuance, the operator shall provide an executed road use agreement between the Applicant and the appropriate governing road and highway jurisdictions or the Illinois Department of Transportation (IDOT), showing approved entrances.
Prior to building permit issuance, the project will obtain the required IDOT road permit and enter into a Road Use Agreement with the County, Highway Commissioner or Township Road District, as necessary. The facility owner will pay for any reasonable costs incurred to repair and improve the roads following construction of the facility

3. *Safety.*

a. Prior to construction, the operator shall prepare an emergency management plan acceptable to the County and the local fire district and shall be responsible for training of emergency personnel, as needed.
Pebble Solar will consult with the local fire district to share site plans. In advance of construction, the project will provide resources to train emergency personnel, as needed.

b. A sign shall be posted providing the name of the operator and a phone number to be used in case of an on-site emergency.
The proposed project will have a sign with the name of the operator and emergency contact number at the entrance to the site.

c. Access shall be granted, provided appropriate advance notice, for periodic inspection of the site by the County or the local fire district.
The project will grant access, with advance notice, for periodic inspections by the County or local fire district.

d. Damaged solar panels shall be removed, repaired, or replaced within sixty (60) days of the damage. The ground shall remain free of debris from damaged solar panels at all times.
In the even solar panels are damaged, they will be removed, repaired or replaced within 60 days. The project will undergo regular inspections to ensure the ground will remain free of debris from damaged panels.

4. *Abandonment.*

a. The COMMERCIAL SOLAR ENERGY FACILITY shall be considered abandoned if the operator fails to pay rent as specified in the Agricultural Impact Mitigation Agreement, or it ceases to generate electricity for a period of twelve (12) consecutive months. Reports of electrical power production shall be provided to the County upon request. An abandoned COMMERCIAL SOLAR ENERGY FACILITY must be decommissioned and removed within twelve (12) months from the time it is deemed abandoned. The operator may appeal in writing to the Zoning Enforcement Officer for an extension of time in order to remove the facility or to bring the solar farm back into operation.
Pebble Solar guarantees the facilities will be decommissioned and properly removed within 12 months of the end of the project lifespan, or in the unlikely even that the system ceases power production for a period of 12 months. The project will provide the County with reports of electrical production, upon request. If necessary, the project will appeal Zoning Enforcement Officer in writing for an extension of time to bring the project back into operation, or extend decommissioning.

5. ***Decommissioning.*** Decommissioning and removal of the COMMERCIAL SOLAR ENERGY FACILITY shall be the responsibility of the operator upon abandonment or revocation of the conditional use permit. All operators shall comply with the following:

a. Prior to building permit issuance, the operator shall prepare a decommissioning plan which shows the final site conditions after the COMMERCIAL SOLAR ENERGY FACILITY has been removed from the property. Decommissioning plans shall require removal of all solar panels, electrical equipment, poles, piles, foundations, and conduits (above and below ground). Access roads, fencing, groundcover, and landscaping may remain only by agreement of property owner.
Prior to building permit issuance, Pebble Solar will prepare a decommissioning plan showing final site conditions and outlining steps to bring the facility back to the original site condition. Pebble Solar guarantees that the facilities will be properly removed within 12 months of the end of the project lifetime or in the unlikely event that the system ceases power production for a period of 12 consecutive months. The project will comply with all McHenry County decommissioning requirements.

b. Prior to building permit issuance, the operator shall submit an engineer's estimate of cost for decommissioning the facility and restoring the site in accordance with the approved decommissioning plan. Upon review and approval by the Zoning Enforcement Officer of the estimate, the operator shall obtain a bond, letter of credit, or other form of surety acceptable to the County to be held by the Department of Planning and Development in the amount of one hundred percent (100%) of the estimate. Provision of this financial assurance shall be phased in over the first eleven (11) years of the project's operation or as otherwise provided in accordance with the executed Agricultural Impact Mitigation Agreement.

Prior to building permit issuance, Pebble Solar will post a decommissioning bond for 100% of the decommissioning estimate to the County. The bond will be phased in over the first 11 years of the project's operation, in accordance with the AIMA.

c. During the operation of the facility, a new engineer's estimate of cost for decommissioning shall be submitted every ten (10) years to the Department of Planning and Development. Upon approval of the estimated costs by the Zoning Enforcement Officer, a revised surety shall be provided to the Department of Planning and Development in the amount of one hundred percent (100%) of the new estimate. *Pebble Solar will submit an updated cost estimate for decommissioning every 10 years. Upon approval by the Zoning Enforcement Officer, a revised surety bond will be provided that meets 100% of the updated cost estimate.*