

FORNAX SOLAR, LLC

CONDITIONAL USE PERMIT APPLICATION

TIPTON COUNTY, IN



SAMSUNG C&T



NOVEMBER 2023 | VERSION 3

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Kimley»Horn

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1.0 INTRODUCTION

Fornax Solar, LLC, a subsidiary of Samsung C&T (Applicant), hereby submits this application for a Conditional Use Permit (Application) to construct, operate, and maintain the Fornax Solar project, a proposed 120 MW AC commercial solar energy facility (Project) on 1,556 acres (Project Area) in unincorporated Tipton County, Indiana. As shown on the Zoning Site Plan in **Exhibit B** the Project's site layout meets the required minimum road right-of-way setbacks and property line setbacks per Tipton County Solar Ordinance.

The Project will be sited over approximately 1,556 acres of leased property north of W Division Road, west of N 300 W, east of US-31, and south of W 400 N. The Project has partnered with eighteen landowners who own the subject parcels (see page 5 for owner and parcel summary) which will host the Project's infrastructure. The Project's area can be characterized as cultivated agricultural fields. There is one US Route and no township roads adjacent to the project; if approved the roads summarized on page 6 will need an access permit from The Tipton County Highway Department. If approved, the Project will deliver power to the electrical grid through a point of interconnection at the 230kV transmission line, on the north side of county road W 100 S between the Kokomo substation and the Tipton substation.

The Applicant has considered recent updates to the Tipton County Zoning Ordinance (Section 523 – Solar Energy Conversion Systems) adopted 10/19/2022 to ensure the Project meets the latest requirements and submits this Application to obtain a Conditional Use Permit (CUP) from the Tipton County Board. Included in **Exhibit A** is a completed application for a CUP and associated documents, including the affidavits of owner's consent for all property owners.

In preparation for filing the CUP application, Fornax Solar, LLC will reach out to the public to provide Project awareness. Prior to the CUP public hearing, the Project team will reach out to neighboring parcels and stakeholders. The Project team will inform the public of the CUP public hearing through a meeting notice letter.

If the Application is approved and a Building permit is secured, construction of the Project is scheduled to commence as early as 2nd quarter of 2025.

2.0 PROJECT DESCRIPTION

The Project Area is currently cultivated and vacant cropland. The participating parcels are zoned as AG – Agricultural. Adjacent properties are also zoned AG and are used for agricultural purposes.

The Project, if approved, will be a ground mounted solar energy system comprised of solar photovoltaic (PV) modules, a racking system, inverters, and underground electrical conduits connecting PV array blocks with inverters. Access roads, with gated entrances, are located throughout the site for access and maintenance of inverters as well as construction access.

Proposed site access to existing roads will be limited to the driveway shown on the Zoning Site Plan, provided on **Exhibit B**. In accordance with Chapter 523.04-A.1.i of the Tipton County Zoning Ordinance, the first 12' of these driveways will be paved. Security fencing will enclose the perimeter of the Project, with road access secured through locked metal gates. A series of internal access roads will be used to



provide access to Project equipment for future maintenance. These roads are typically gravel and will be verified upon final design with the geotechnical engineer recommendations.

The following eighteen (18) landowners have signed agreements to participate in the Project.

Owner	Parcel Number
Peters, William L & Vonda Sue	80-06-17-200-005.000-005 80-06-18-100-005.000-005
Peters, Judith A	80-06-18-400-024.000-005
Mundell, Michael H & Jennifer Sue	80-06-18-400-025.000-005
Campbell, S & L Family Limited Partnership	80-06-19-100-004.000-005 80-06-19-100-004.030-005 80-06-19-200-002.000-005 80-06-19-200-005.000-005 80-06-19-200-006.000-005 80-06-19-200-007.000-005 80-06-19-100-003.000-005 80-06-19-300-008.000-005
Campbell, Julie A.	80-06-20-200-005.000-005
Foster, Nolan Brent & Ruth Aileen LLC	80-06-20-300-007.000-005 80-06-30-200-005.000-001
Ressler, Gregory P & Rebecca L	80-06-20-300-008.000-005
Ressler, Gregory Paul	80-06-29-300-010.000-001
Golden Opportunity Investments LLC	80-06-20-300-008.010-005
Beach, Jeffrey L	80-06-20-300-011.000-005 80-06-20-300-012.000-005 80-06-20-300-013.000-005
Trathen, Barbara J & Thomas G	80-06-20-400-009.000-005
Keever, LLC	80-06-30-400-014.000-001 80-06-30-400-016.000-001 80-06-30-400-017.000-001
Hopewell Rangeline LLC % Lisa Todd	80-06-30-400-018.000-001
Gary W. Lightfoot, Trustee of the Gary W. Lightfoot Recoverable Trust	80-06-32-100-003.000-001
McClellan Farmers, Harold, Inc	80-06-32-100-004.000-001
Lightfoot Farms, Gary & Maybeth & Glen & Lucille Lightfoot Farms	80-06-32-400-002.000-001
Michael H & Jennifer S. Mundell - 1/2 int. & Braden M & Samantha L Peters - 1/2 int.	80-06-32-400-007.000-001
LRB2 Baird Farms, LLC	80-06-33-300-005.010-001 80-06-33-300-010.000-001

The parcels included in the project have frontage along the following roads, all parcels have their access roads connecting to one of the county roads to minimize traffic interference. This can be seen in the Zoning Site Plan which is included as **Exhibit B**.

Road Name	Jurisdiction
US 31 (N 600 W)	US Route
N 500 W	County Road
N 400 W	County Road
S 400 W	County Road
N 300 W	County Road
S 300 W	County Road
W 400 N	County Road
W 300 N	County Road
W 200 N	County Road
W 100 N	County Road
W Division Road	County Road

2.1 CONDITIONAL USE REQUIRED FINDINGS OF FACTS (SECTION 808.01, TIPTON COUNTY ZONING CODE)

- a) The zoning ordinance authorizes the conditional use request and the request conforms to all general regulations of this Ordinance.

The conditional use request will conform to all general regulations of this ordinance and will meet the setback distances for adjacent property lines, roadway ROW, and municipality boundaries along with other requirements including vehicular access and landscape cover.

- b) The approval will not be injurious to the public health, safety, morals and general welfare of the community.

The approval will not be injurious to the public health, safety, morals and general welfare of the community. The proposed use will not create any harmful condition. The solar facility will follow state and local guidelines as well as best practices regarding access routes and security fencing.

- c) The use and value of the area adjacent to the property included in the variance will not be affected in a substantially adverse manner.

The conditional use will not cause harm to neighboring property value and will not be affected in a substantially adverse manner.

- d) The proposed use shall promote the objectives of this ordinance and shall be consistent with the comprehensive plan.

The conditional use will be in compliance with the Tipton County Ordinances and will coincide with the Comprehensive Plan.

2.2 ECONOMIC BENEFITS

PROVIDED BY CLIENT.

2.3 INTERCONNECTION FACILITIES

PROVIDED BY CLIENT.

2.4 PROJECT CONSTRUCTION

Construction of the Project, if approved, is intended to commence in the 2nd quarter of 2025. Dust and noise from construction will be mitigated with industry standard best management practices.

All equipment uses and operations will be conducted to avoid impeding the flow of traffic on adjacent roadways. Contractor shall maintain access to adjacent landowners for the duration of the project construction. The Contractor shall be fully responsible to provide signs, barricades, warning lights, guard rails, and employ flaggers as necessary when construction endangers either vehicular or pedestrian traffic. These devices shall remain in place until the traffic may proceed normally again. Equipment will operate in the road right-of-way only to add gravel and make minor improvements to proposed site access driveways. Project construction shall ensure all equipment is properly maintained and equipped with manufacturer's standard noise control devices.

2.5 HEALTH AND SAFETY

During the Conditional Use Permit process, the Project will coordinate with the appropriate fire safety personnel to ensure adequate plans and systems are in place in the unlikely event a safety issue emerges. Appropriate signage containing necessary contact and safety information for the Commercial Solar Energy Facility will be displayed in accordance with local code and coordination with staff.

Upon request, a walk-through of the site with the local authorities and emergency agencies will be scheduled once construction is complete. Emergency personnel will also be given the key or code to access the facility.

Solar Energy Systems do not raise concern for fire and explosive hazards. The solar panels and racking, which comprise most of the Project's equipment, are not flammable. Tempered glass offers protection from heat and the elements, and the panels are designed to absorb heat as solar energy. From a study by North Carolina State University:

...Concern over solar fire hazards should be limited because only a small portion of materials in the panels are flammable, and those components cannot self-support a significant fire. Flammable components of PV panels include the thin layers of polymer encapsulates surrounding the PV cells, polymer back sheets (framed panels only), plastic junction boxes on rear of panel, and insulation on wiring. The rest of the panel is composed of non-flammable components, notably including one or two layers of protective glass that make up over three quarters of the panel's weight.

There are no toxic substances in the panels. The project will incorporate Tier 1 silicon-based PV panels, which have been analyzed as follows by North Carolina State University:

Well over 80% (by weight) of the content of a PV panel is tempered glass front and the aluminum frame, both of which are common building materials. Most of the remaining portion are common plastics, including polyethylene terephthalate in the back sheet, EVA encapsulation of the PV cells, polyphenol ether in the junction box, and polyethylene insulation on the wire leads. The active, working components of the system are the silicon photovoltaic cells, the small electrical leads connecting them together, and to the wires coming out of the back of the panel. The electricity generating and conducting components makeup less than 5% of the weight of most panels. The PV cell itself is nearly 100% silicon, and silicon is the second most common element in the Earth's crust. The silicon for PV cells is obtained by high-temperature processing of quartz sand (SiO_2) that removes its oxygen molecules. The refined silicon is converted to a PV cell by adding extremely small amounts of boron and phosphorus, both of which are common and of very low toxicity.

Stray voltage issues and remedies are detailed in the USDA's Agriculture Handbook Number 696. While the vast majority of stray voltage concerns are caused by the farm's electrical system and wiring, some may be caused by off-site utility issues, including the following, per the Iowa State Dairy Association's *Stray Voltage Guide*:

- Loose neutral wire connection
- Damaged neutral wires
- Poor grounding
- Undersized neutral wires
- Load imbalances on three phase lines
- Improperly functioning utility equipment
- Ground faults at nearby locations

While malfunction of utility equipment may cause stray voltage issues for local livestock, these threats are pre-existing as the new PV generation facility will tie into existing utility owned distribution lines. The addition of the PV facility has no bearing on these concerns. The utility is responsible for maintenance of these lines and any existing stray voltage concerns should be addressed directly with the utility provider. Note that the utility will install power quality meters and recloser devices at the new point of interconnection for the PV generation, which will assist in the identification of any issues on the local circuit, if they are present.

Undersized distribution neutral wires carrying electrical current may cause excessive neutral-to-earth voltage (NEV) which may be detectable on local premises. Unbalanced customer electrical load between the three voltage phases on a distribution circuit cause these currents to appear in the neutral wire, increasing NEV. It is the utility's responsibility to maximize the balance of customer loads across the three circuits and to ensure a properly sized neutral wire. However, electrical generators, including PV and other inverter-based generation operate as balanced three-phase sources, meaning that all current is

directed through the three phase conductors, not the neutral conductor. These PV sites have no connection to the distribution neutral, as they are designed with a "delta" connection to only the three phase lines in the circuit. Thus, the addition of a PV generation facility on the circuit has no impact on NEV induced from existing circuit imbalances or an undersized neutral conductor.

PV generation is not designed to direct electric current to the earth during normal operations. Excess power produced by the PV array is managed by inverter controllers but is not directed into the ground. However, electrical line-to-ground faults may occasionally occur in the local electrical circuit including downed power lines or transformer internal faults. These fault conditions may cause temporary rises in NEV due to current flowing through the neutral and/or to ground. The electrical protection system and site grounding system at the PV generating facility is designed to isolate ground faults in the alternating-current, high-voltage and low-voltage power systems within seconds of initiation to prevent further equipment damage. The protection system has multiple layers including UL1741/IEEE1547 compliant inverters, fuses, circuit breakers, digital relays, and reclosers, which will isolate faults and/or disconnect the site from the grid. The utility will also provide a second recloser to trip the site offline in the event of abnormal behavior.

Ground faults at the direct-current PV modules themselves have no effect on other local properties as they are electrically isolated from the distribution circuit, in addition to the fact that the modules produce relatively low-voltage and that they are unable to generate short-circuit currents of any significance. The site grounding plan developed by qualified engineers and installed by qualified electricians prevents significant ground voltage rise during a ground fault.

Stray voltage is a concern that may affect livestock behavior and dairy production. While most stray voltage concerns are due to on-farm electrical and wiring issues, issues on the utility's distribution circuit causing high neutral-to-earth voltage (NEV) may contribute to stray voltage on local farms. However, the addition of local PV generation on the distribution circuit has no impact on the neutral-to-earth stray voltage seen by these farms.

2.6 OPERATIONS AND MAINTENANCE

Once constructed, the solar farm will operate throughout the year, passively generating renewable energy. The site and equipment will be designed, approved, maintained, and inspected to ensure safety and security. Maintenance activities during operation are expected to be minimal with occasional service for inverters and transformers. Solar panels are monitored remotely. Traffic is not anticipated to increase during the operations of the Project.

Maintenance operations will likely be carried out rarely and with minimal traffic as only one vehicle will likely be needed to help carry out maintenance tasks several times a year. To prevent shading of the panels for solar energy production, an on-going vegetation maintenance program will be implemented for all vegetated areas within the fenced boundary and buffer areas. After construction is complete and stabilized vegetation has been established within the fenced Project Area, the Project will conduct vegetative management at appropriate frequency based on weather and moisture conditions. This management schedule would continue each year until implementation of the Decommissioning Plan.

3.0 FEDERAL AND STATE APPROVALS, PERMITS, AND AGREEMENTS

3.1 FEDERAL AVIATION ADMINISTRATION (FAA)

The FAA's policy for Solar Energy System Projects on Federally Obligated Airports only requires glint and glare screening for solar projects located on federally obligated towered airports. Since this project is not on an airport, it does not require a glint and glare screening. According to Tipton County Zoning Ordinance 523.04-A.6, the effect on the airspace needs to be confirmed, but based on the result of the FAA Notice Criteria Tool included in **Exhibit C**, the coordinates of this project and structure heights do not exceed Notice Criteria.

3.2 LEVEL 1 WETLAND ANALYSIS AND FEMA ANALYSIS

A field wetland delineation investigation will be conducted prior to final design to verify waters and wetlands in the Project Area. A Level 1 Wetland Analysis was performed and is included in **Exhibit D**. Wetlands were identified on site during the desktop review using historical data and aeriels, National Wetland Inventory data, and topographic analysis. During final engineering, the Project will be designed to avoid wetland impacts to the greatest extent possible. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) portal was consulted to determine if any FEMA 100-year floodplains are on the site. There are two FEMA 100-year floodplain Zone A areas located throughout the site. The FEMA Firmette is included in **Exhibit D**.

3.3 U.S. FISH & WILDLIFE SERVICE (USFWS)

The Project will be designed such that federally listed species will not be significantly impacted. Solar projects typically impose only minimal impacts on wildlife species. Fornax Solar, LLC will evaluate the Project's potential to impact federally protected species. Prior to construction, consultation with the USFWS will occur to confirm a "No Effect" determination for these species.

3.4 INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT (IDEM) – SWPPP

IDEM's Office of Water Quality (OWQ) is responsible for overseeing the issuance of permits within the National Pollutant Discharge Elimination System (NPDES) program that regulates construction stormwater discharges. Permits require a Storm Water Pollution Prevention Plan (SWPPP), which is a site-specific document that outlines the measures a project will take to reduce pollutants in the stormwater discharges from a construction site. Stormwater controls reduce silt transport and sedimentation during precipitation events.

Prior to construction, the Project will prepare a SWPPP as well as sediment and erosion control plans for submittal and approval for an NPDES Permit through IEPA. The SWPPP will ensure construction activity compliance with guidelines and regulations for controlling sediment and erosion runoff.

4.0 TIPTON COUNTY ZONING CODE AND OTHER LOCAL APPROVALS

The Project will comply with Tipton County's Amended Zoning Ordinances (dated 10/19/2022) as described below and as shown on the Zoning Site Plan, included as **Exhibit B**. The Project Area is located on agricultural land and is classified as AG – Agricultural. The Project will be a ground-mounted solar energy system comprised of solar photovoltaic (PV) modules, racking system, inverters and medium voltage transformers, and underground electrical conduits connecting PV array blocks with inverters. Access roads with gated entrances shall be located for site maintenance, maintenance of inverters, as well as construction access.

Per Tipton County Zoning Ordinance 605, an advisory meeting with the Planned Unit Development Administrating Officer meeting shall be held before submission of a site development and/or building permit application.

4.1 HEIGHT REQUIREMENTS

According to Tipton County Zoning Ordinances 523.04-A.1.c, ground or pole-mounted solar energy systems may not exceed 20 feet in height when oriented at maximum tilt. This height restriction does not apply to any building constructed for maintenance or operations purposes. Installation shall not be located as to interfere with existing satellite television, cell phone and/or internet service. The Project will ensure no system of the solar energy system exceeds the maximum height requirement.

4.2 SETBACKS

Per Tipton County Zoning Ordinance 523.04-A.1.a, Solar Energy Systems, measured from the edge of the solar energy system, excluding security fencing, screening, or berm, are subject to the following setbacks:

- At least 300 feet property line setback from a non-participating landowner's property line
- Written agreement of the landowners to waive property line setback between two participating parcels in the project
- Written agreement of the landowners to reduce property line setback between participating and non-participating parcels to 20 feet.

- **NOTE: The Project is actively seeking setback waiver agreements with adjacent property owners. This may affect the overall project area in the future. Any agreements will be submitted to Tipton County staff for review.**
- At least 100 feet roadway setback from ROW of all federal, state, and local roads
- At least ½ a mile setback from limits of any municipality or incorporated area
- Zero feet for side and rear yards on all properties that are adjacent and within the subject property

The Project will adhere to the requirements set forth above. The Project demonstrates its compliance in the Zoning Site Plan, included as **Exhibit B**.

4.3 GLARE

Per Tipton County Zoning Ordinance 523.03-C.2.2-3, Solar Energy Systems must be designed, constructed, and sited to minimize visual impacts from the public right-of-way to the extent that doing so does not affect the cost or efficacy of the system consistent with Indiana Code 36-7-2-8. Ground mounted systems shall be screened from the right-of-way per section 306.13 to reduce glare or reflections on adjacent properties and roadways and to not interfere with traffic, including air traffic, or otherwise create a safety hazard. The Project is designed to meet the required setbacks and by utilizing these measures, the Project will not adversely affect nearby properties or traffic.

4.4 SOILS AND GROUND COVER

Per Tipton County Zoning Ordinance 523.04-A.1.d, ground around and under solar panels and in project site buffer areas shall be planted, established, and maintained for the life of the solar project in perennial vegetated ground cover. Perennial vegetation ground cover shall be based on a diverse seed mix of native species consistent with guidance specific to the local area provided by the Soil and Water Conservation District office or the Indiana Native Plant Society. The owner/operator shall demonstrate site maintenance that is intended to remove invasive or noxious species, as listed by the Indiana Invasive Species Council, without harming perennial vegetation. The ordinance specifies no insecticide use is permitted on site, which does not apply to insecticide or herbicide use on in-site buildings, in and around electrical boxes, spot control or noxious weeds, or as otherwise may be deemed necessary to protect public health and safety. Plant material must not have been treated with systemic insecticides, particularly neonicotinoids.

The ordinance includes additional requirements for conservation and topsoil protection which shall also be followed during project construction. Per Tipton County Zoning Ordinance 523.04-A.1.d, community or large-scale ground-mounted solar energy systems that propose to install, establish, and maintain pollinator-friendly vegetative cover are to demonstrate the quality of the habitat by using approved guides or solar-pollinator friendly scorecards designed for Midwestern ecosystems, soils, and habitats. Projects certified and maintained as pollinator-friendly compliant may be exempt from landscaping requirements and stormwater management controls as stated in Section 2. of Tipton County Zoning Ordinance 523.04. During final engineering, a Landscape Plan will be developed by a licensed landscape architect to detail

all proposed buffer vegetation, seed mix specifications, and vegetation management/weed control to comply with county, state, and national requirements.

Per Tipton County Zoning Ordinance 523.04-A.7, the owner/operator of the Commercial Solar Energy Facility is responsible for repair, maintenance, and replacement of the solar energy system and related solar equipment during the term of the permit in a manner consistent with industry standards to keep the solar energy system in good repair and operating condition.

The applicant shall submit a plan as part of the development plan process for the operation and maintenance of the solar energy system, which shall include measures for maintaining safe access to the installation, storm water controls, as well as general procedures for operation and maintenance of the installation. This Operations and Maintenance Plan will also include plans for maintaining and repairing any security or operational infrastructure.

Tipton County Zoning Ordinance 523.04-A.7 indicated that any physical modification to any solar energy system or part thereof which materially alters the mechanical load, mechanical load path, or major electrical components shall require recertification by all appropriate regulatory authorities. Like-kind replacement shall not require recertification, unless required by a regulatory authority. Prior to making any material physical modification, other than a like-kind modification, the owner or operator of such solar energy system shall confer with the zoning administrator, County Surveyor, County Engineer, and any other appropriate regulatory authority as to whether or not the proposed physical modification requires recertification of such solar energy system.

4.5 SECURITY BARRIER

Per Tipton County Zoning Ordinance 523.04-A.1.f, perimeter fencing of Solar Energy Systems that are part of a commercial solar energy facility must be at a minimum height of six feet. Perimeter fencing must not include barbed wire, except for the perimeter of a substation. No wood fencing shall be permitted, although wooden poles may be used with wire fencing. Alternative fencing can be used if the site is incorporating agrivoltaics. The Project will be secured by a minimum six-foot-tall metal fence. A fence detail has been included with the Zoning Site Plan which details this fence. The Project fence shall comply with the requirements of Tipton County Zoning Ordinance as well as the National Electric Code.

4.6 DECOMMISSIONING PLAN

The Tipton County Zoning Ordinance 523.04-A.8 indicated the requirement of a decommissioning agreement to ensure that facilities are properly removed after their useful life. Decommissioning of the system must occur in the event the project does not produce power for six consecutive months. An owner may petition the county executive for an extension of this period upon showing of reasonable circumstances that have caused the delay in the start of decommissioning. If the owner or operator of the ground-mounted solar energy system fails to remove the installation in accordance with the requirements of section 523.04-A.8 within 90 days of abandonment or the proposed date of decommissioning, Tipton County or their designee retains the right, after receipt of an appropriate court order, to enter and remove an abandoned, hazardous, or decommissioned ground-mounted solar energy system.

A Decommissioning Plan shall consist of the physical removal of all solar energy system structures and equipment from the site, disposal of all solid and hazardous waste in accordance with local, state, and federal disposal regulations, and stabilization or re-vegetation of the site as necessary to minimize erosion is included in **Exhibit E**. The Plan Director or the county executive may enter into an agreement to allow the owner or operator to leave landscaping or designated below-grade foundations in order to minimize erosion and disruption to vegetation. The combination of the native grasses and pollinator friendly seed mix established during the Project life and temporary rest of the soils from agricultural planting will promote soil restoration and more productive farmland after decommissioning.

The plan shall include provisions for removal of all structures and foundations to a depth of 48", restoration of soil and vegetation and assurances that financial resources will be available to fully decommission the site. Disposal of structures and for foundations shall meet the provisions of the Tipton County Solid Waste Ordinance. All solar panels are to be disposed of at a site certified for disposal of solar panels.

Prior to issuance of any Tipton County approval, the Applicant shall establish a cash security fund in the form of a bond, irrevocable letter of credit or other means to secure the payment of removing any abandoned solar energy system, and to provide Tipton County a fund from which to deduct fines and penalties for non-compliance with this Ordinance or other applicable laws.

Unless otherwise agreed to by all parties, every three (3) years a new engineer's estimate of probable cost of decommissioning and restoration shall be submitted to the zoning administrator of Tipton County Planning Commission for approval in the same manner as the initial submission.

4.7 STORMWATER AND NPDES

According to Tipton County Zoning Ordinance 523.04-A.2 large and community-scale solar projects are subject to Tipton County's stormwater management and erosion and sediment control provisions and Nonpoint Pollution Discharge Elimination System (NPDES) permit requirements.

4.8 STANDARDS AND CODES

Per Tipton County Zoning Ordinance 523.04-A.2, the Project will comply with all local, state, and federal regulatory codes, including the State of Indiana Uniform Building Code, as amended, and the National Electric Code, as amended. The Project will comply with the State of Indiana Plumbing Code, the State of Indiana Electric Code, the State of Indiana Uniform Building Code, the National Electric Code, and all Tipton County Health Department and Zoning Board requirements. The Applicant understands these requirements and all final engineering documents shall be designed in accordance with these standards.

4.9 AVOIDANCE AND MITIGATION OF DAMAGES TO PUBLIC INFRASTRUCTURE

Per Tipton County Zoning Ordinance 523.04-A.8.f, the Applicant shall submit a Road Use and Services maintenance Agreement approved by the County Commissioners and the County Highway Superintendent that addresses the following:

- A compilation of routes that will be used for construction and maintenance purposes, approved by the County Highway Superintendent
- A documented baseline survey to determine existing road conditions prior to construction. The survey shall include photographs or video, or a combination thereof and a written agreement to document the condition of the public facility.
- A construction bond as indicated in Tipton County Zoning Ordinance 523.04-A.4
- A plan to address transportation routes and conditions during construction. If the route includes a public road, it shall be approved by the County highway Superintendent. The affected school system(s) transportation department must also be consulted.
- A plan to avoid damage and address repair to damaged roads
- A requirement that newly constructed solar energy system access roads will not impede the flow of surface and subsurface water
- Provisions to address crop, field tile, waterway, and other infrastructure damage

The Project Owner shall fulfill all requirements of the Tipton County Zoning Ordinance 523.04-A.8.f.

5.0 CONCLUSION

The Fornax Solar, LLC project adheres to all requirements of Tipton County and The State of Indiana and should qualify for a Conditional Use Permit to construct a Solar Energy System in unincorporated Tipton County.

Exhibit A. Conditional Use Permit Application

Tipton County Board of Zoning Appeals Checklist:

The following information must be provided thirty days prior to the regularly scheduled BZA meeting. BZA meetings are held the first Wednesday of every month (except for holidays). BZA meetings are held at 101 E. Jefferson Street Tipton, IN 46072 (Tipton County Court House).

Filing Fee: \$350.00

Variance from Development Standards
 Variance of Use
 Special Exception
 Conditional Use
 Variance from Floodplain
 Appeal to Administrative Decision

Applicant checklist:

1. Application completed and signed. A Power of Attorney letter is required when petitioner is not owner.
2. Complete Legal Description, deed, or Plat of Survey.
3. Site Plan drawn to scale showing existing and proposed structures with dimensions, driveways, and any roads the property has frontage on, and the dimensions from all structures to the property lines. Any additional information required by staff.
4. Legal advertisement placed in a paper, by petitioner, of local circulation at least 10 days prior to public hearing. Legal Advertisement drafted by Plan Commission. Proof of publication must be presented to staff prior to public hearing.
5. Notification of adjacent property owners. This list is generated by Tipton Plan Commission staff. Petitioner is responsible to contact via certified US Mail and return certification to staff prior to prior to public hearing.
6. Place sign and frame at location at least 10 days prior to public hearing.
7. Appear before the Advisory Board of Zoning Appeals.

This is to certify that _____ Soyoung Park _____ (hereinafter

“Petitioner”) is authorized to apply for a _____ Conditional Use Permit _____,

concerning the attached described real estate. Said petition will appear before the County of Tipton Advisory Board of Zoning Appeals.

Board of Zoning Appeals Application: County of Tipton, IN
101 E. Jefferson St. Tipton, IN 46072

County Plan Commission: (765) 675-6063
tiptoncoplan@tds.net

Petition #: 10-CV-32-23

Fee: \$350



Petitioner Information: (if petitioner is not owner of record a power of attorney is required)

Petitioner Name: Soyoung Park

Petitioner Address: 707 Skokie Blvd., Northbrook, IL 60062

Phone: (312) 560-3282

Email: sy0917.park@samsung.com

Site Information:

Location address: N/A

General location of property: Various parcels north of W 100 S, west of N 300 W, east of N 600 W, and south of W 300 N

Zoning District: AG

Overlay: Yes

Floodplain Designation: Zone A

Petition Request:

Variance from Development Standards:

Variance of Use:

Special Exception:

Conditional Use: X

Appeal administrative decision:

Flood Zone Variance:

Petition Request:

Zoning Ordinance Regulation:

Application checklist: Initial when complete

Application:

Site Plan:

Findings of fact:

Fee:

Copy of deed:

Petitioner Responsibility:

As required by Director:

This is to certify that Soyoung Park (hereinafter "petitioner") is authorized to apply for a

Conditional Use Permit, concerning attached described real estate. Said case will appear before the: Board of Zoning Appeals

Signature

Soyoung Park

2023-10-02

Date

Findings of Fact: Conditional Use

808 CONDITIONAL USE: A Board of Zoning Appeals shall approve or deny all special exceptions from the terms of the zoning ordinance, but only as specified in the zoning ordinance. The Board may impose reasonable conditions as a part of its approval.

- A. The zoning ordinance authorizes the conditional use request and the request conforms to all general regulations of this Ordinance; The conditional use request will conform to all general regulations of this ordinance and will meet the setback distances for adjacent property lines, roadway ROW, and municipality boundaries along with other requirements including vehicular access and landscape cover.
- B. The approval will not be injurious to the public health, safety, morals and general welfare of the community; The proposed use will not create any harmful condition. The solar facility will follow state and local guidelines as well as best practices regarding access routes and security fencing.
- C. The use and value of the area adjacent to the property included in the variance will not be affected in a substantially adverse manner; The conditional use will not cause harm to neighboring property value and will not be affected in a substantially adverse manner.
- D. The proposed use shall promote the objectives of this ordinance and shall be consistent with the comprehensive plan; The conditional use will be in compliance with the Tipton County Ordinances and will coincide with the Comprehensive Plan.

Signature of Petitioner

BZA Decision:

It is therefore the recommendation of the Board of Zoning Appeals that this Special Exception is:

Approved/Denied ()

Findings of Fact and Conditions: _____

Chairperson _____ Date _____

Exhibit E. Decommissioning Narrative

CONFIDENTIAL



November 6, 2023

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

RE: *Fornax Solar Decommissioning Plans Request*

Dear Soyoung,

Pursuant to your request for a Decommissioning Memorandum and Cost Estimate associated with the Solar Project in Tipton 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 should you have any questions or concerns.

Sincerely,

Liam Sawyer, P.E.
Project Manager

FORNAX SOLAR DECOMMISSIONING PLAN 11/06/2023

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 solar facility. Tipton County Code requires a decommissioning 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 Tipton County Code.

Site Location

Fornax Solar proposes to build a photovoltaic (PV) solar facility ("Solar Facility") with a nameplate capacity of approximately 120 MW_{AC} ("Project"), in Tipton County, IN. The Facility is located within tax parcel identification numbers ("Property"):

Owner	Parcel Number
Peters, William L & Vonda Sue	80-06-17-200-005.000-005
	80-06-18-100-005.000-005
Peters, Judith A	80-06-18-400-024.000-005
Mundell, Michael H & Jennifer Sue	80-06-18-400-025.000-005
Campbell, S & L Family Limited Partnership	80-06-19-100-004.000-005
	80-06-19-100-004.030-005
	80-06-19-200-002.000-005
	80-06-19-200-005.000-005
	80-06-19-200-006.000-005
	80-06-19-200-007.000-005
	80-06-19-100-003.000-005
	80-06-19-300-008.000-005
Campbell, Julie A	80-06-20-200-005.000-005
Foster, Nolan Brent & Ruth Aileen LLC	80-06-20-300-007.000-005
	80-06-30-200-005.000-001
Ressler, Gregory P & Rebecca L	80-06-20-300-008.000-005
Ressler, Gregory Paul	80-06-29-300-010.000-001
Golden Opportunity Investments LLC	80-06-20-300-008.010-005
Beach, Jeffrey L	80-06-20-300-011.000-005
	80-06-20-300-012.000-005
	80-06-20-300-013.000-005

Trathen, Barbara J & Thomas G	80-06-20-400-009.000-005
Keever, LLC	80-06-30-400-014.000-001 80-06-30-400-016.000-001 80-06-30-400-017.000-001
Hopewell Rangeline LLC % Lisa Todd	80-06-30-400-018.000-001
Gary W. Lightfoot, Trustee of the Gary W. Lightfoot Recoverable Trust	80-06-32-100-003.000-001
McClellan Farmers, Harold, Inc	80-06-32-100-004.000-001
Lightfoot Farms, Gary & Maybeth & Glen & Lucille Lightfoot Farms	80-06-32-400-002.000-001
Michael H & Jennifer S. Mundell - 1/2 int. & Braden M & Samantha L Peters - 1/2 int.	80-06-32-400-007.000-001
LRB2 Baird Farms, LLC	80-06-33-300-005.010-001 80-06-33-300-010.000-001

Anticipated Service Life of the Project

Unless the system is purchased by Tipton County 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 Solar 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.

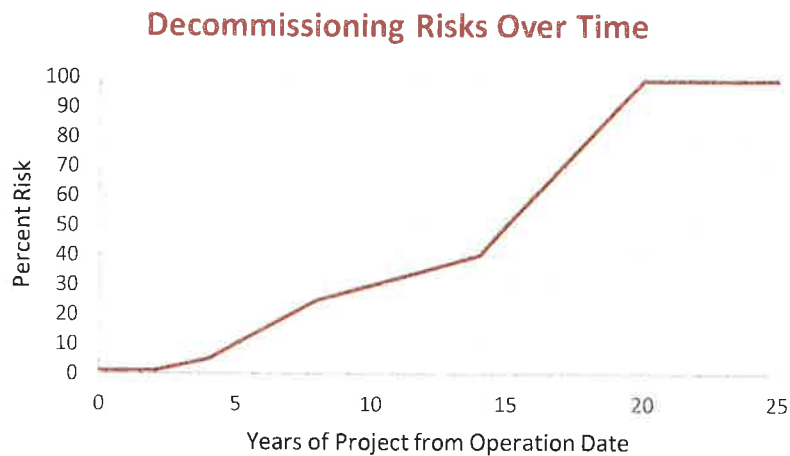
Decommissioning Risks Over Time

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 Tipton County 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 6-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 Solar Facility, the Project will include at a minimum:

- Disconnection from the utility power grid
- Removal of all Facility components: panels, inverters, wire, cable, combiner boxes, transformers, racks, trackers, tracker motors, weather monitoring, control system apparatus, etc.
- 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 property to a condition reasonably similar to its condition prior to Facility installation, or as initially agreed upon.
- Plant vegetation suitable for the location, native to the region, and which matches surrounding vegetation.

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.

The decommissioning process will maximize the recycling, reuse and salvage of applicable facility components, which are outlined in the opinion of probable construction costs. 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 Solar 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. Landscaping and paved entrance will remain following site restoration. Deciding factors will be influenced by Tipton County land use and comprehensive plans and regulations at such time in the future.

The developer will coordinate with Tipton 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 Tipton County.

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

Time Period to Complete Decommissioning

The Project Company will have twelve (12) months from the date decommissioning commences 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 and analysis of material salvage value will be prepared as part of this decommissioning plan. Exhibit A will summarize the probable costs and salvage values associated with decommissioning. Exhibit B will summarize probable costs associated with decommissioning exclusive of salvage values. Exhibit C will summarize probable costs associated with trucking panels to approved recycling facilities.

Tipton County Code requires Samsung C&T Renewables 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, Samsung C&T Renewables will be required to submit detailed engineering plans at the time of decommissioning, and obtain construction permits as required by appropriate authorities.

Expenses associated with decommissioning the Project will be dependent on labor costs at the time of decommissioning. For the purposes of this report, current RSMeans data was used to estimate labor, material, and equipment expenses. Fluctuation and inflation of the labor costs were not factored into the estimates.

Total probable cost of decommissioning in Year 40 is estimated to be **TBD**.

Resale/Salvage Value Estimate

There is a robust secondary market for resale of solar PV panels worldwide and a network of facilities available for recycling panels. Solar PV panels are estimated to degrade less than 0.5% per year, meaning they're expected to operate at 90% of capacity after 20 years. Panel manufacturers will guarantee the performance for each individual module and replace defective modules per the terms of warranty. Panels can therefore be sold for a price higher than their scrap value.

In general, the highest component value would be expected at the time of construction with declining value over the life of the Project. Over most of the Project's life, components such as the solar panels could be sold in the wholesale market for reuse or refurbishment. As panel efficiency and power production decrease due to aging and/or weathering, the resale value will decline accordingly. 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; 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. The solar facility's additional supporting components, such as inverters, transformers, racking and piles, can be dismantled and resold for scrap value. Inverters and transformers are comprised of salvageable materials such as copper, aluminum, and silver. Piles and other steel components can likewise be recovered and salvaged. Resale values at the end of Year 40 for equipment of significant value were calculated with straight-line depreciation after an instant depreciation of the original material cost.

A current sampling of reused solar panels indicates a wide range of pricing depending on age and condition (\$0.10 to \$0.50 per watt). Future pricing of solar panels is difficult to predict currently, 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 in Year 40 at \$0.18 per watt would yield approximately **TBD**. Increased costs of removal, for resale versus salvage, would be expected to preserve the integrity of the panels; however, the net revenue would still be substantially higher 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 larger portion of the tracker is expected to stay at or above the value used in this report.

The price used to value the steel in this report is \$184.24 per ton. The price used to value copper in this report is \$3.00 per lb.

No salvage value was anticipated for the battery energy storage system components.

Total probable salvage value of decommissioning in Year 40 is estimated to be **TBD**.