

MEMORANDUM

TO: APC Ordinance Committee
FROM: Rabita Foley
SUBJECT: Solar Development Ordinance
DATE: October 1, 2020

The increased interest in solar energy systems is generally due to a reduction in installation cost for property owners and the state's voluntary clean energy portfolio standard (CPS) program, which provides Indiana's utilities an incentive to increase the amount of renewable energy sources in their portfolio. Many communities in Indiana have used renewable energy production as an economic development tool. Solar developments meet the triple bottom line framework: social, environmental, and financial, making it an attractive option for Tippecanoe County.

Staff conducted a comprehensive research of the existing solar ordinances from both in and out-of-state communities. The review included communities with extensive experience in large-scale solar energy systems and localities with newly adopted solar ordinances. Various experts affiliated with Duke and Tipmont REMC were consulted to help staff better understand the draft solar ordinance's applicability concerning industry practices, IURC regulations, and net metering. Staff also reviewed the draft Indiana solar ordinance and incorporated applicable components to the attached proposal.

Based on the knowledge gathered from research, community engagement, conference attendance, and conversation with stakeholders, staff prepared the draft solar energy systems amendment for further discussion.

1. Accessory Use

For accessory use solar energy systems, the proposal attempts to make the existing solar installations for residences (and some businesses) conforming. The allowances for building and ground-mounted accessory use is shown in the table below.

Accessory Use SES	
Building-mounted	Ground-mounted
Up to 5 feet above the existing maximum allowed building height	Maximum height allowed 15 feet
Up to 3 feet beyond the front or rear of the building	Setbacks same as any other accessory structure
Side setbacks same as any other accessory structure	Not calculated in lot coverage

2. Primary Use

For primary use solar energy systems, the proposal addresses visual buffers and noise concerns by requiring pollinator-friendly plantings, appropriate setbacks, bufferyards and fencing. The compliance with Federal Aviation Authority regulations will address glint and glare concerns. The proposal also includes a decommissioning plan that outlines the requirement to demolish, dispose, and regrade the site when the solar energy system reaches its end and creates a bonding structure to secure finances to ensure decommissioning completion.

The two types of primary solar energy systems proposed are community-scale and large-scale. The significant distinction between the two is shown in the table below.

Primary Use SES	
Community-Scale Solar Energy System	Large-Scale Solar Energy System
Less than 10 Acres	10 Acres or more
Ground-mounted and building-mounted	Ground-mounted
Permitted in all zones except Flood Plain	Permitted by right in Industrial zones
No special exception is required	Permitted by special exception in Agricultural and Office Research zones

Attached is the draft solar energy systems ordinance amendment and a list of references and resources.

STAFF RECOMMENDATION:

Approval

ORDINANCE NO. _____

AN ORDINANCE AMENDING ORDINANCE NO. _____ BEING THE UNIFIED ZONING ORDINANCE OF TIPPECANOE COUNTY.

Be it ordained by the (County Commissioners of Tippecanoe County, Indiana; the Common Council of the City of Lafayette, Indiana; the Common Council of the City of West Lafayette, Indiana; the Town Council of the Town of Battle Ground, Indiana; the Town Council of the Town of Dayton, Indiana; and the Town Council of Clarks Hill, Indiana), that Ordinance No. _____, being the Unified Zoning Ordinance of Tippecanoe County is hereby amended as follows:

Section 1: Change **UZO Section 1-10-2 Words and Terms Defined** to add the following definitions:

ABANDONED. Regarding *solar energy systems*, a **SES** that does not generate electricity for a continuous twelve (12) month period, or any solar energy system falling into a state of disrepair for twelve consecutive months shall be deemed abandoned.

ACCESSORY SOLAR ENERGY SYSTEM. The *ground-mounted or building-mounted SES*, accessory to a *primary use*.

BUILDING-MOUNTED SOLAR ENERGY SYSTEM. An **SES** in which solar panels are structurally mounted to a building.

COMMUNITY-SCALE SOLAR ENERGY SYSTEM. A *ground-mounted SES* on less than 10 acres or a *building-mounted SES* on any amount of acreage that provides power to residential or commercial or industrial uses located on-site or off-site from the location of the solar energy generation.

CONCENTRATED SOLAR POWER (CSP). A solar energy system that uses mirrors to reflect and concentrate sunlight. CSP is not permitted in any zone.

GROUND-MOUNTED SOLAR ENERGY SYSTEM. An **SES** that is directly installed into the ground and is not attached or affixed to an existing building.

INVERTER. A device that converts direct current (DC) to alternating current (AC).

LARGE-SCALE SOLAR ENERGY SYSTEM. A *ground-mounted solar energy system*, on a tract(s) equal to or more than ten acres, for the purpose of generating

- (C) **Ground-mounted solar energy systems** shall be exempt from **lot coverage** requirements.

Section 5: Add UZO 4-5-1 (d) Height of the accessory solar energy system:

- (1) **Building-mounted solar energy systems** may exceed the maximum allowed **building height** on which it is located by five feet at the maximum incline (tilt).
(2) **Ground-mounted solar energy systems** shall have a maximum height of 15 feet.

Section 6: Add UZO 4-11-14 Large Scale Solar Energy System as follows:

- (a) A **large-scale solar energy system** is exempt from UZO 4-6 and **lot coverage** requirements.
- (b) The site shall be planted and maintained to be free of all invasive species, as listed by the Indiana Invasive Species Council.
- (c) The applicant shall submit the following with a **special exception** request or an **improvement location permit** application.
- (1) A **large-scale solar energy system site plan** shall also include the following:
- (A) All solar panels, **mounting devices**, and **inverters** shall be **setback** 50 feet from all property lines.
 - (B) Solar **inverters** shall be **setback** a minimum of 200 feet when abutting a residential use property line or residential zone.
 - (C) The height shall be calculated as the distance from ground level to the top of the solar panel at its greatest incline (tilt).
 - (D) All solar panels, as well as all **mounting devices**, shall be a minimum of 36 inches above ground level as measured from any ground point to the closest point of any solar panel or **mounting devices**.
 - (E) A security fence at least 6' high shall be installed around the **large-scale solar energy system** with emergency access allowed 24/7.
 - (F) Power transmission lines from a **large-scale solar energy system** shall be underground and shall be completely shielded against shock hazard. Lines that connect one panel to another or from the system to the main transmission lines are not required to be underground.
 - (G) Driveway entrances shall comply with UZO 4-7.
- (2) A stormwater management plan shall be reviewed and approved by the participating jurisdiction.
- (3) All driveway entrances shall be approved by the participating jurisdiction.

- (4) Any approval, if required from the Federal Aviation Administration regulations, for installations surrounding airports shall conform to UZO 5-3.
 - (5) All applicable approvals from federal, state and local agencies.
 - (6) A **Bufferyard** is required except when waived by the **Administrative Officer**.
 - (7) Pollinator-friendly seed mixes and native plants plan approved by a Registered Landscape Architect or Certified Ecologist or Licensed Horticulturist, are required around/under a large-scale solar energy system.
 - (8) The applicant shall provide a redacted version of the executed power purchase agreement.
- (d) Decommissioning plan and removal requirements:
- (1) A decommissioning plan for a **large-scale solar energy system** shall be approved by the **ABZA** when **special exception** is required or by the **Administrative Officer** for systems permitted by right, prior to issuance of the **improvement location permit**.
 - (2) A decommissioning plan shall include removal of all solar electric systems, buildings, cabling, electrical components, security fence, driveway entrance, foundations, pilings, and any other associated facilities, pollinator friendly seed mixes and native plants, so that any agricultural ground upon which the facility or system was located is again tillable and suitable for agricultural uses. However, the landowner may request in writing that the existing pollinator friendly seed mixes and native plants, driveway entrance, security fence or other land surface areas not be restored, and this request shall be approved by the **ABZA** or the **Administrative Officer**. Hazardous materials, including **mounting devices** from a **large-scale solar energy system** shall be disposed of in accordance with federal and state law.
 - (3) The final decommissioning plan shall be certified by a Professional Engineer, or a Registered Land Surveyor, or a Registered Landscape Architect.
 - (4) The applicant shall provide an itemized cost estimate to decommission the **large-scale solar energy system** prepared by a Professional Engineer or contractor who has expertise in the removal of solar facilities to the **ABZA** or the **Administrative Officer**. The cost estimate shall not include any estimates or offsets for the resale or salvage values of the **large-scale solar energy system** equipment and materials.
 - (5) The applicant shall be required to file a surety bond, for the estimated amount, approved by the **ABZA** when **special exception** is required or by **the Administrative Officer** for systems permitted by right, prior to the issuance of an **improvement location permit**.

- (6) The decommissioning cost estimate shall include a mechanism for calculating increased removal costs due to inflation. This cost estimate shall be recalculated every five years and the surety bond shall be updated to reflect the change. Failure to renew the cost estimate and update the bond every five years shall void the grant of special exception.
- (7) The applicant shall file and receive an approval for a demolition permit before decommissioning begins.
- (8) When the decommissioning is complete, the applicant shall submit the final report outlining the completion of the decommissioning plan to the **ABZA** or the **Administrative Officer** for approval. The **ABZA** or the **Administrative Officer** shall then release the applicant from the conditions of approval and the surety bond.
- (9) If the applicant fails to meet the requirements set in the decommissioning plan or the **large-scale solar energy system** is **abandoned**, the **ABZA** or the **Administrative Officer** may request the county to declare the bond in default and use the proceeds to complete the decommissioning plan.

Section 7: Add UZO 4-11-15 Community-Scale Solar Energy System as follows:

- (a) A **community-scale solar energy system** is exempt from UZO 4-6 and **lot coverage** requirements.
- (b) **Ground-mounted:**
 - (1) The applicant shall submit the following with an **improvement location permit** application:
 - (A) All solar panels, **mounting devices**, and **inverters** shall be **setback** 25 feet from all property lines.
 - (B) Solar inverters shall be **setback** a minimum of 50 feet when abutting a residential use property line or residential zone.
 - (C) The height shall be calculated as the distance from ground level to the top of the solar panel at its greatest incline (tilt).
 - (D) A security fence at least 6' high shall be installed around the **community-scale solar energy system** with emergency access allowed 24/7.
 - (E) Power transmission lines from **ground-mounted community-scale solar energy system** shall be underground and shall be completely shielded against shock hazard. Lines that connect one panel to another or from the system to the main transmission lines are not required to be underground.
 - (F) Driveway entrances shall comply with UZO 4-7.

- (2) A stormwater management plan shall be reviewed and approved by the participating jurisdiction.
- (3) All driveway entrances shall be approved by the participating jurisdiction.
- (4) Any approval, if required from the Federal Aviation Administration regulations, for installations surrounding airports shall conform to UZO 5-3.
- (5) All applicable approvals from federal, state and local agencies.
- (6) A **Bufferyard** is required except when waived by the Administrative Officer.
- (7) Decommissioning plan and removal requirements:
 - (A) A decommissioning plan for a **community-scale solar energy system** shall be approved by the **Administrative Officer** prior to issuance of the **improvement location permit**.
 - (B) A decommissioning plan shall include removal of all solar electric systems, buildings, cabling, electrical components, security fence, driveway entrance, foundations, pilings, and any other associated facilities. However, the landowner may request in writing that the existing driveway entrance, security fence or other land surface areas not be restored, and this request shall be approved by the **Administrative Officer**. Hazardous materials, including **mounting devices** from a **community-scale solar energy system** shall be disposed of in accordance with federal, state and local laws.
 - (C) The final decommissioning plan shall be certified by a Professional Engineer.
 - (D) The applicant shall provide an itemized cost estimate to decommission the **community-scale solar energy system** prepared by a Certified Engineer or contractor who has expertise in the removal of solar facilities to the **Administrative Officer**. The cost estimate shall not include any estimates or offsets for the resale or salvage values of the **community-scale solar energy system** equipment and materials.
 - (E) The decommissioning cost estimate shall include a mechanism for calculating increased removal costs due to inflation. This cost estimate shall be recalculated every five years and the bond shall be updated to reflect the change. Failure to renew the cost estimate and update the bond every five years shall void the grant of special exception.
 - (F) The applicant shall be required to file a surety bond, for the estimated amount, approved by the **Administrative Officer** prior to the issuance of an **improvement location permit**.

- (G) The applicant shall file and receive an approval for a demolition permit before decommissioning begins.
- (H) When the decommissioning is complete, the applicant shall submit the final report outlining the completion of the decommissioning plan to the **Administrative Officer** for approval. The **Administrative Officer** shall then release the applicant from the surety bond.
- (I) If the applicant fails to meet the requirements set in the decommissioning plan or a **community-scale solar energy system** is **abandoned**, the **Administrative Officer** may request the county to declare the bond in default and use the proceed to complete the decommissioning plan.

(c) **Building-mounted:**

- (1) A **community-scale solar energy system** may exceed the maximum allowed **building height** on which it is located by ten feet at the maximum incline (tilt).
- (2) A **community-scale solar energy system** may project up to three feet beyond the **front** or **rear** of the building, and as regulated in UZO 4-4-5 below.
- (3) A **community-scale solar energy system** shall comply with all applicable federal, state and local laws and ordinances, including but not limited to building codes, fire codes, and historic preservation districts.

This ordinance shall be in full force and effect from and after its passage.

References and Resources

Are You Solar Ready? Seven steps to successfully manage large-scale solar development.

<https://www.planning.org/planning/2020/mar/are-you-solar-ready/>

Bloomington, Indiana (Ordinance)

<https://bloomington.in.gov/planning/udo>

Elkhart County, Indiana (Ordinance)

<http://www.elkhartcountyplanninganddevelopment.com/>

Fulton County, Indiana (Ordinance)

<https://www.co.fulton.in.us/departments/index.php?structureid=14>

Henry County, Indiana (Ordinance)

<http://www.henryco.net/attachments/Henry%20County%20Draft%20Solar%20Ordinance.pdf>

Henry County REMC

<https://www.hoosierenergy.com/my-solar-henry/>

Indiana Office of Energy Development (OED)

<https://www.in.gov/oed/2650.htm>

Logansport, Indiana (Ordinance)

<http://www.cityoflogansport.org/departments/planning-zoning-department/>

Michiana Area Council of Governments

http://macog.com/solar_energy.html

Monroe County, Indiana (Ordinance)

https://www.co.monroe.in.us/egov/documents/1579205918_0969.pdf

National Conference of State Legislatures

[https://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx#:~:text=The%20state's%20two%20investor%20Downed,megawatts%20\(MW\)%20or%20less.](https://www.ncsl.org/research/energy/renewable-portfolio-standards.aspx#:~:text=The%20state's%20two%20investor%20Downed,megawatts%20(MW)%20or%20less.)

Planning for Solar Energy (PAS REPORT 575)

<https://www.planning.org/publications/report/9117592/>

Planning for Utility-Scale Solar Energy Facilities PAS Memo

<https://www.planning.org/pas/memo/2019/sep/>

Randolph, Indiana (Ordinance)

<https://randolphcounty.us/form/randolph-county-unified-zoning-ordinance-1>

Renewable Energy Used in State Renewable Portfolio Standards Yielded Sizable Benefits and Other Impacts in 2013

<https://www.nrel.gov/news/press/2016/21615.html>

Shelby County, Indiana (Ordinance)

<https://ag.purdue.edu/Documents/ordinance/Shelby.pdf>

Solar Energy Industries Association

<https://www.seia.org/state-solar-policy/indiana-solar>

<https://www.seia.org/sites/default/files/2020-09/Indiana.pdf>

Solar Powering Your Community: A Guide for Local Governments

<https://www.epa.gov/repowertoolbox/solar-powering-your-community-guide-local-governments>

Solarize Indiana

<https://solarizeindiana.org/>

St. Joseph County, Indiana (Ordinance)

<https://www.sjcindiana.com/352/Zoning-Ordinances>

Tribal Energy Efficiency and Renewable Energy Development on Tribal Lands (Brochure)- 2010

White County, Indiana (Ordinance)

<http://www.whitecountyin.us/index.php/home/area-plan>

Recent articles related to large-scale solar energy systems in Indiana.

NIPSCO announces 100-megawatt solar farm for Henry County, 200M W one for Boone County, both with plans for 2023 completion

<https://indianaeconomicdigest.com/Content/Default/Also-In-The-News/Article/NIPSCO-announces-100-megawatt-solar-farm-for-Henry-County-200M-W-one-for-Boone-County-both-with-plans-for-2023-completion/-3/5307/100831>

IURC says solar farm project should be under local jurisdiction

<https://www.wishtv.com/news/iurc-says-solar-farm-project-should-be-under-local-jurisdiction/>

Indiana county adopts new solar energy ordinance requiring pollinator-friendly groundcover

<https://www.solarpowerworldonline.com/2020/07/indiana-county-adopts-first-ever-solar-energy-ordinance-requiring-pollinator-friendly-groundcover/>

Tax break given to \$175 million Shelby County solar panel project

<https://indianaeconomicdigest.com/MobileContent/Most-Recent/Region-1/Article/Tax-break-given-to-175-million-Shelby-County-solar-panel-project/31/79/95603>

Bloomington, Indiana diversifies its energy supply with residential and municipal solar

<https://eri.iu.edu/erit/case-studies/bloomington-solar-initiatives.html>

The Push For Solar Energy In Indiana

<https://www.wfyi.org/programs/all-in/radio/The-Push-For-Solar-Energy-In-Indiana-Repeat>