COMMERCIAL PRINCIPAL SOLAR ENERGY SYSTEMS IN

AGRICULTURAL ZONING DISTRICTS

MODEL ORDINANCE

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I. Introduction

The Commonwealth is moving towards a greener future in the area of clean energy and commercial principal solar energy systems (CPSES) are a key part of its strategy. Nearly 33 percent of the greenhouse gas emissions in the Commonwealth come from electricity generation.[1] Nationwide, Pennsylvania is the "third-largest producer of electricity" and "a leading East Coast supplier of natural gas, coal, [and] refined petroleum products."[2] According to the Solar Industries Association, the Commonwealth is ranked 23rd in the United States for solar installation with a growth projection to move into the 13th position in the next five years.[3] Currently, this is enough solar energy to power 115,177 homes but only contributes .43 percent to the state's electricity generation.[4] Advancements in solar energy need to be made to significantly reduce the Commonwealth's dependency on fossil fuels.

Solar energy systems can generally be defined within two categories: accessory or principal. An accessory system is a system designed to "reduce on-site consumption of utility

[1] PA. DEP'T OF ENV'T PROT., "*Pennsylvania's Solar Future" Plan*, https://www.dep.pa.gov/Business/Energy/OfficeofPollutionPrevention/SolarFuture/Pages/Pennsylvania's-Solar-Future-Plan.aspx (last visited Nov. 27, 2022).
[2] U.S. ENERGY INFO. & ADMIN., *Pennsylvania State Profile and Energy Estimates*, https://www.eia.gov/STATE/ANALYSIS.PHP?sid=PA (Oct. 21, 2021).
[3] *Pennsylvania Solar*, SOLAR ENERGY INDUSTRIES ASSOCIATION (2022), chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://www.seia.org/sites/default/files/2022-09/Pennsylvania%20State-Factsheet-2022-Q3.pdf.
[4] *Id*.

power or fuels" whereas a principal system is designed to collect energy for off-site use.[5] The principal system can be defined as:

> An area of land or other area used for a solar collection system principally used to capture solar energy, convert it to electrical energy or thermal power and supply electrical or thermal power primarily for off-site use. Principal solar energy systems consist of one (1) or more free-standing ground, or roof mounted solar collector devices, solar related equipment and other accessory structures and buildings including light reflectors, concentrators, and heat exchangers, substations, electrical infrastructure, transmission lines and other appurtenant structures.[6]

In order to generate energy for off-site use, principal sites are generally large sites with numerous solar arrays. Finding sufficient acreage for principal sites can be challenging. Farmland is an ideal location for CPSES. The installation of solar arrays on farmland has many benefits: (1) it allows for property owners to supplement their farming income; (2) it reduces energy costs; (3) it reduces the use of fossil fuels; and (4) it promotes agrivoltaics; "the use of land for both agriculture and solar photovoltaic energy generation."[7]

Although it is important to encourage CPSES in the Commonwealth, municipalities need to ensure that solar energy is not replacing farmland and is installed as a supplement to agricultural uses that are already in place. Currently, there are very few ordinances in the Commonwealth that address CPSES, and even fewer that address the preservation of farmland. One municipality attempts to address this issue by requiring that "[t]o the extent feasible, [s]olar-[r]elated [e]quipment . . . . shall be placed on lands unsuitable for agricultural use."[8] There is also a requirement for a special exception for the installation of CPSES in agricultural districts.[9]

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[5] CUMBERLAND CNTY. PLAN. DEP'T., *Solar Energy Systems Model Ordinance* https://www.cumberlandcountypa.gov/DocumentCenter/View/7947/final-solar-4-19-11?bidId= (last visited Sept. 25, 2022, 11:00 PM).
[6] *Id.*
[7] *Agrivoltaics: Coming Soon to a Farm Near You?*, U.S. DEP'T OF AGRIC., https://www.climatehubs.usda.gov/hubs/northeast/topic/agrivoltaics-coming-soon-farm-near-you (last visited Oct. 29, 2022).
[8] DOVER, PA., CODE §27-665a(2)(I)(5) (2021).
[9] *Id*. at §27-665a(2).

Cumberland County's model CPSES ordinance addressed the issue of preserving farmland while encouraging solar energy growth by including conservation incentives for CPSES installed in agricultural areas. It also requires that CPSES must further the "preservation goals of the municipality."[10] The ordinance mandates that only a specified percentage of the agricultural land can be dedicated to CPSES unless the land is being co-developed for solar power generation and agricultural use.[11] The incentives aimed at preserving farmland require an increase in the required impervious coverage, increased riparian buffers, and replacement of existing invasive vegetation with native vegetation.[12] By including these requirements, the ordinance serves to promote CPSES while protecting the environment through agricultural preservation. CPSES provide the economic benefit of reducing energy costs for municipalities and simultaneously reducing health-endangering greenhouse gas emissions.

The proposed ordinance serves to increase the utilization of solar energy but requires that CPSES are constructed in conjunction with agricultural preservation. To accomplish this goal, the proposed ordinance will provide regulations for the construction, operation, and decommissioning of CPSES in agricultural districts. These regulations will include zoning requirements to ensure the health, safety, and welfare of adjacent and surrounding land uses. Best practices for CPSES decommissioning will be addressed to ensure that municipalities are not bearing these costs, including a requirement that CPSES equipment is recycled at the end of its life cycle. The CPSES ordinance will also address the economic benefits to landowners, and improved conditions for agricultural workers and animals. The goal of the proposed ordinance is to encourage a

[10] CUMBERLAND COUNTY, PA., SOLAR ENERGY SYSTEMS (SOLAR FARMS) 2022 MODEL ORDINANCE at pg. 11.
[11] *Id.*
[12] *Id.*

harmonious balance between CPSES and agriculture in furtherance of the Commonwealth's goal to eliminate reliance on unsustainable energy sources and reduce greenhouse gas emissions.

The narrative will discuss the importance of growing the CPSES industry in the Commonwealth responsibly, to ensure that solar energy is not displacing farmland. It will also discuss the inadequacy of current ordinances to address CPSES in agricultural districts. Solutions to these challenges will be provided, along with explanations of how CPSES is beneficial for municipalities. The final section will include recommendations to address CPSES issues including concurrent land use of solar energy with agriculture, buffer zones, and decommissioning requirements.

II. Problem: Promoting Solar Energy while Preserving Pennsylvania's Farmland

Municipalities in the Commonwealth have failed to enact ordinances that address the issue of CPSES coexisting with agriculture. CPSES can be an extremely beneficial addition to farms across the Commonwealth, however, it is important that solar energy does not *replace* the Commonwealth's farmland. Due to a lack of state guidance, the task of regulating the solar energy industry has fallen on counties and municipalities. Cumberland, Dauphin, and Perry Counties do not currently have an ordinance in place to address CPSES.

A. Making CPSES Compatible with Farmland Preservation

The best use of CPSES in agricultural districts is to ensure that these districts continue to be used for their intended purpose with solar energy serving as a secondary use. The Commonwealth is moving toward renewable energy with a goal of 10 percent of electrical power being sourced from renewable energy by 2024.[13] This equates to over 80,000 acres of property,

[13] Ashley Little, *Pa. paves way with solar energy development — but at what cost?*, NORTHCENTRALPA.COM, (April 14, 2022), https://www.northcentralpa.com/business/pa-paves-way-with-solar-energy-development-but-at-what-cost/article_7f2c20ee-bc18-11ec-bd32-cf8d07750186.html.

with most CPSES currently installed on agricultural land.[14] Solar energy corporations have found that the Commonwealth's farmland is well-suited to establishing CPSES because it is "usually flat or gentle sloping land that makes [solar energy] more cost effective."[15] The Commonwealth currently has 6,044 preserved farms and 611,620 acres under the state's farmland preservation program.[16] The Bureau of Farmland Protection has "suggested guidance related to agriculture zoning that would deter development from occurring on prime farmland soils unless it is compatible with farming."[17] By installing CPSES in conjunction with agriculture, municipalities would be able to benefit from solar while still utilizing their farmlands for farming.

Solar energy systems can generally be defined within two categories: accessory or principal. An accessory system is a system designed to "reduce on-site consumption of utility power or fuels" whereas a principal system is designed to collect energy for off-site use.[18] The principal system can be defined as:

> An area of land or other area used for a solar collection system principally used to capture solar energy, convert it to electrical energy or thermal power and supply electrical or thermal power primarily for off-site use. Principal solar energy systems consist of one (1) or more free-standing ground, or roof mounted solar collector devices, solar related equipment and other accessory structures and buildings including light reflectors, concentrators, and heat exchangers, substations, electrical infrastructure, transmission lines and other appurtenant structures.[19]

In order to generate energy for off-site use, principal sites are generally large sites with numerous solar arrays. Finding sufficient acreage for principal sites can be challenging. Farmland is an ideal

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[14] *Id*.
[15] Wayne Campbell, *Your View by Pennsylvania State Grange: Is solar energy a threat to farming?*, THE MORNING CALL (Mar. 8, 2022, 9:00 AM), https://www.mcall.com/opinion/mc-opi-solar-energy-threat-farming-campbell-20220308-exopfieyafhgbcbctxk37iwlyq-story.html.
[16] PA. DEPT. OF AGRIC., BUREAU OF FARMLAND PRESERVATION 2021 ANNUAL REPORT, ACT 149 OF 1988 (May 2022).
[17] *Id.*
[18] CUMBERLAND CNTY. PLAN. DEP'T., *Solar Energy Systems Model Ordinance* https://www.cumberlandcountypa.gov/DocumentCenter/View/7947/final-solar-4-19-11?bidId= (last visited Sept. 25, 2022, 11:00 PM).
[19] *Id.*

location for CPSES. Solar energy companies are particularly interested in farms that have existing infrastructure, such as electrical substations.[20]

Although CPSES can be beneficial, they do threaten to displace the Commonwealth's farmland which has been historically protected from commercial and residential development under the clean and green tax assessment program.[21] "Clean and [g]reen is a preferential tax assessment program, that bases property taxes on use values rather than fair market values."[22] The program encourages the protection of the Commonwealth's farmland and has the added benefit of tax savings for landowners.[23]

Solar array installation prevents municipalities from utilizing farmland for some agricultural purposes. Corn and other tall crops cannot be grown in the same space as solar energy arrays and some animals, such as goats, cannot be raised because of their destructive nature. Both of these agricultural operations are incompatible with CPSES. Another issue is whether "the arrays would be considered additional impervious material under Pennsylvania's storm water runoff regulations" which could make it more costly for municipalities to comply with municipal separate storm sewer system requirements.[24] Municipalities should also be aware of the time commitment required by solar energy companies, which is often at least 25 years; much longer than leases required by the gas industry.[25]

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[20] Sarah Donaldson, *Solar farms bring opportunities, land use questions for Pa. agriculture*, FARM AND DAIRY (Jan. 14, 2022), https://www.farmanddairy.com/news/solar-farms-bring-opportunities-land-use-questions-for-pa-agriculture/699986.html.
[21] Sarah Donaldson, *Solar farms bring opportunities, land use questions for Pa. agriculture*, FARM AND DAIRY (Jan. 14, 2022), https://www.farmanddairy.com/news/solar-farms-bring-opportunities-land-use-questions-for-pa-agriculture/699986.html.
[22] PA. DEPT. OF AGRIC., *Clean and Green*, https://www.agriculture.pa.gov/Plants_Land_Water/farmland/clean/Pages/default.aspx (last visited Nov. 27, 2022).
[23] *Id.*
[24] Cristina Tuser, *Proposed Solar Farm Project in Pennsylvania Sparks Storm Water Concerns*, STORM WATER SOLUTIONS, (June 8, 2021), https://www.estormwater.com/treatment/runoff-treatment/news/10992140/proposed-solar-farm-project-in-pennsylvania-sparks-storm-water-concerns.
[25] *Id.*

Although not all agricultural operations are compatible with CPSES, they can coexist harmoniously with various crops and livestock. A new concept called "agrivoltaics" is the combination of crops or livestock and solar arrays.[26] Under this practice, the solar arrays provide shade, which improves farming practices. One study noted that "the productivity of tomatoes grown under solar panels doubled while conserving 65 percent more water."[27] The CPSES benefit from the cooling effect of photosynthesis, "allowing them to run 1-3 percent more efficiently."[28] Having shaded areas for animals improves the conditions under which they are pastured. It also improves working conditions for farm laborers harvesting crops grown under or near the CPSES. An additional consideration for co-existence is the practice of turning "solar arrays" into sustainable habitats for pollinating insects.[29] Pollinators are critical to farming and require spaces with vegetation and flowering plants.[30] There has been extensive habitat destruction from agriculture, mining, and human development.[31] Using the space around CPSES is a solution.

One farm in the Commonwealth is seizing the opportunity to add solar energy to its existing agricultural operation. The Owens Farm located at Susquehanna University, completed in 2018, uses agrivoltaics by grazing sheep with solar generation.[32] The farm is currently home to 40 sheep. Besides the ability to dual-purpose the farm by raising sheep and creating solar energy, the owners

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[26] Sheldon Krause, *Crops grown under solar panels and pollinator habitats could be wave of the future* (Apr. 16, 2021), https://news.jrn.msu.edu/2021/04/crops-grown-under-solar-panels-and-pollinator-habitats-could-be-wave-of-the-future/.
[27] *Id*.
[28] *Id.*
[29] NAT'L PARK SERV., *Pollinators in Trouble*, https://www.nps.gov/subjects/pollinators/pollinators-in-trouble.htm (June 18, 2018).
[30] *Id*.
[31] *Id.*
[32] Jack Copus, *Dual Uses of Agriculture and Solar,* SGC Power LLC (Sept. 21, 2021), chrome-extension://efaidnbmnnnibpcajpcglclefindmkaj/https://agriculture.pasenategop.com/wp-content/uploads/sites/26/2021/09/Copus-Updated-presentation-for-Sept-21-2021_Renewables-Work-for-PA-SGC-_Final.pdf.

have also found that agrivoltaics serves as a farm preservation tool.[33] The American Farmland Trust reported that 70 percent of lost farmland is due to low-density residential developments.[34] The American Farm Bureau Federation reported that the Commonwealth lost more than 6,000 farms between 2012 and 2017 and over 700 dairy farms in the last two years.[35] Municipalities can help to save farms by encouraging agrivoltaics which also have the benefit of decreasing energy costs for municipal residents. It also reduces greenhouse gas emissions in two ways; land that is grazed by animals does not need to be mowed, and green energy reduces reliance on fossil fuels. Agricultural preservation also has the added advantage of supporting local food production which can reduce food costs for municipal residents.

B. How Local Ordinances Have Addressed CPSES Issues

The Cumberland County Planning Department created a model ordinance in 2022 based on other Commonwealth ordinances, to create guidelines for medium and large-scale solar energy systems to be used for its municipalities.[36] Similarly, the Tri-County Regional Planning Commission has created a solar facilities fact sheet with links to model ordinances as part of its planning toolkit.[37] Both of these resources provide municipalities with a starting point for creating CPSES ordinances, but they do not address all of the problems created by solar energy located on farmlands. These counties are not alone in failing to address the issues presented by commercial solar energy. Currently "only 13 percent [of municipal ordinances] mention solar energy and 5 percent address grid-scale solar projects."[38] Municipalities in the Commonwealth that enacted

[33] *Id.*
[34] *Id.*
[35] *Id.*
[36] CUMBERLAND COUNTY, PA., SOLAR ENERGY SYSTEMS (SOLAR FARMS) 2022 MODEL ORDINANCE at pg. 1.
[37] TRI-COUNTY REGIONAL PLANNING COMMISSION, TRCPC PLANNING TOOLKIT FACT SHEET SOLAR FACILITIES.
[38] Rachel McDevitt, *Solar companies are eyeing Pa. farmland. A legislative agency is looking at ways communities can prepare*, STATEIMPACT PENNSYLVANIA (Oct. 1, 2021), https://stateimpact.npr.org/pennsylvania/2021/10/01/solar-companies-are-eyeing-pa-farmland-a-legislative-agency-is-looking-at-ways-communities-can-prepare/.

CPSES ordinances have addressed: agrivoltaics, zoning, buffering requirements, and decommissioning.

1. Agrivoltaics

Despite solar corporations' interest in developing farmland, few of the Commonwealth's ordinances address restrictions and requirements specific to agricultural land. Both Montour and York counties discuss agrivoltaics, which they define as "the co-development of land for both solar photovoltaic power and '[n]ormal [f]arming [o]perations.' "[39] These ordinances stipulate that "[o]nly shade tolerant crops may be used," "erosion and sediment control plans are developed," and fertilization is limited to the "agronomic needs of the crop(s)."[40] York County's ordinance goes one step further by requiring the development of a "manure management plan" if the property is also used for grazing livestock.[41]

Cumberland County gives the most consideration to farmland under the principal solar energy systems section of its solar energy model ordinance.[42] This ordinance sets out specific guidelines for agricultural districts depending on size, with areas over 20 acres requiring either conditional or specific use permits.[43] Other requirements include a minimum lot size of ten acres, minimum setbacks of 50 yards, maximum heights of 30 feet, and at least 30 to 40 percent impervious coverage, depending upon the municipality's preference.[44] Cumberland County's model ordinance considers the preservation of farmland by including a provision for conservation incentives.[45] These include increasing impervious coverage by at least 10 percent when at least

[39] MONTOUR COUNTY, PA., ORDINANCE 1 OF 2021, §3(1)(C)(3)(d)(ii, iii, v) (2021).
[40] *Id*., YORK COUNTY, PA., YORK COUNTY PLANNING COMMISSION MODEL ORDINANCE § 4(B)(6)(b)(2)(d)(i, ii, iv) (April 2022).
[41] YORK COUNTY, PA., YORK COUNTY PLANNING COMMISSION MODEL ORDINANCE § 4(B)(6)(b)(2)(d)(v) (April 2022).
[42] CUMBERLAND COUNTY, PA., SOLAR ENERGY SYSTEMS (SOLAR FARMS) 2022 MODEL ORDINANCE at pg. 7-11.
[43] *Id*. at pg. 8.
[44] *Id*. at pg. 9.
[45] *Id*. at pg. 11.

20 percent of the CPSES are located on rooftops.[46] Cumberland County's model ordinance does the best job of addressing concerns over farmland destruction and highlights the importance of preserving farmland which provides food for the Commonwealth and prevents green spaces from being developed for residential or commercial use.

2. Zoning

The Commonwealth's current CPSES ordinances allow use by right in all zoned districts, including those zoned for agriculture use. Monroe Township defines its CPSES zoning requirements as "permitted in all zoning districts as an accessory to [the] principal use."[47] It highlights an issue around solar zoning in the Commonwealth by explaining that CPSES "shall provide power for the principal use and/or accessory use of the property on which the solar energy system is located and shall not be used for the generation of power for the sale of energy to other users."[48] The issue Monroe Township seeks to address with its CPSES ordinance is that community solar is not currently available in Pennsylvania.

Community solar allows "residents who are unable to afford or otherwise install panels themselves to subscribe to solar power from a large array."[49] It can also allow participation from people who do not "own their homes, have insufficient solar resources or roof conditions to support a rooftop [solar] system due to shading, roof size, or other factors."[50] The Commonwealth currently only allows for distributed generation, where the electricity is used at

[46] *Id.*
[47] MONROE CNTY., PA., MODEL ORDINANCE FOR ON-SITE USAGE OF SOLAR ENERGY SYSTEMS §3(1)(A).
[48] *Id.*
[49] Quinn Glabicki, *To turn up the solar power, PA needs new laws. One bill is poised to move, but here's why others seem stalled*, PUBLICSOURCE (Sep. 20, 2022), https://www.publicsource.org/solar-power-pennsylvania-general-assembly-community-portfolio-renewable-legislation/.
[50] OFF. OF ENERGY EFFICIENCY AND RENEWABLE ENERGY, COMMUNITY SOLAR BASICS.

or near the site of production, and utility-scale solar (CPSES), which transmits electricity directly to the electric grid.[51]

Although community solar is not currently allowed in the Commonwealth, municipalities should anticipate that it may be available in the future. Bills have been introduced by both houses of the Pennsylvania Legislature to bring community solar to the Commonwealth. Anticipating this possibility allows municipalities, like Monroe Township, to regulate how their residents participate in solar energy programs that are not located on their own property. Allowing for community solar would help to increase the Commonwealth's ability to meet the requirements of its renewable portfolio and increase the number of residents able to participate in CPSES.

3. Buffer Requirements

An issue that has not been addressed by existing Commonwealth ordinances is the concern of neighbors over CPSES changing the aesthetics of their communities. Many citizens are worried about the impact CPSES will have on the appeal of their neighborhoods and the farming landscape of the Commonwealth in general. They are also concerned about CPSES affecting their property values.[52] Residents in Dover Township opposed a proposed CPSES because they were worried it would ruin their "natural view,"[53] while Lebanon County residents argued that a proposed CPSES would cause the "destruction of scenic views."[54] Some solar companies have countered this

[51] Urban Grid, *What is Utility-Scale Solar? An Overview*, (Aug. 19, 2019) https://www.urbangridsolar.com/what-is-utility-scale-solar-an-overview/. (last visited Sept. 24, 2022).
[52] Angel Albring, *Solar farm proposal: Dover Twp. zoning meeting continued after community raises concerns*, YORK DAILY RECORD, (Dec. 16, 2021), https://www.ydr.com/story/news/2021/12/16/dover-township-zoning-board-continues-meeting-600-acre-solar-farm/8914082002/.
[53] *Id*.
[54] Matthew Toth, *Crowd fills hearings to determine fate of proposed Lebanon County solar farm*, LEBANON DAILY NEWS (Jan. 27, 2022), https://www.ldnews.com/story/news/2022/01/27/lebanon-1-solar-farm-project-seeks-permit-develop-north-annville/9204827002/.

argument by installing an "evergreen vegetative buffer, where native plant species could be used"[55] to minimize the impact a CPSES would have on the aesthetics of a landscape. "[A]s renewable energy has grown, along with project sizes, NIMBY [not in my backyard] has become something solar developers have to deal with."[56]

Municipalities could mitigate the concerns of neighbors to CPSES if they required a vegetative buffer instead of making it an option for solar developers. York and Montour Counties and Southampton Township all address buffering requirements in their ordinances to differing degrees. Southampton Township requires a fifty-foot buffer strip for ground-mounted CPSES, while Montour County requires a fifty-foot buffer from residential properties, a 15 foot buffer from agricultural land, and a twenty-foot buffer from other adjacent uses.[57] Neither of these ordinances requires a vegetative buffer.

The model solar energy ordinance from York County allows municipalities to determine buffer zones from residential, agricultural, and adjacent uses but goes further and includes vegetative buffering guidelines for CPSES.[58] The model ordinance defines a solar energy facility as: "[a]n area of land used for a solar collection system principally to capture solar energy, convert it to electrical energy or thermal power and supply electrical or thermal power primarily for off-site use."[59] CPSES would fall under this definition. York County's model ordinance requires that vegetative buffering be installed around the entire perimeter of the CPSES, except where existing

[55] Cristina Tuser, *Proposed Solar Farm Project in Pennsylvania Sparks Storm Water Concerns*, STORM WATER SOLUTIONS, (June 8, 2021), https://www.estormwater.com/treatment/runoff-treatment/news/10992140/proposed-solar-farm-project-in-pennsylvania-sparks-storm-water-concerns.
[56] Matt Chester, Wesley Smith, Nathan Coleman, *How solar developers can respect property ownership rights while providing benefits to host communities*, SOLAR POWER WORLD (Mar. 22, 2022), https://www.solarpowerworldonline.com/2022/03/how-solar-developers-can-respect-property-owners-rights-provide-benefits-to-host-communities/.
[57] SOUTHAMPTON TOWNSHIP, PA., ORDINANCE 2021-003, §4(d)(v) (2021); MONTOUR COUNTY, PA., ORDINANCE 1 OF 2021, §3(1)(C)(3)(d)(i, iii, v) (2021).
[58] SOUTHAMPTON TOWNSHIP, PA., ORDINANCE 2021-003, §3(C)(6) and §4(B)(7) (2021).
[59] *Id*. at §2.

trees create a buffer "or where the municipality determines that the CPSES cannot be viewed from a public roadway or residential building."[60] The ordinance also requires that the vegetative buffer should provide year-round coverage, and be a mix of naturally occurring vegetation and that "[n]o less than 20% of vegetative buffering plantings shall be pollinator friendly species."[61] York County's ordinance is the most effective at ensuring that CPSES blend in naturally with the surrounding landscape, which would also dispel the concerns of neighbors to these systems.

4. Decommissioning

CPSES projects typically last for around 30 years but when the time comes to decommission the arrays and the structure the cost can be over $1 million.[62] To ensure that decommissioning costs are covered, a decommissioning bond is required, although proponents of the bond have conceded that it is often difficult to predict future decommissioning costs.[63] The bonds are important because they "guarantee removal of the solar farm and land restoration to its original condition."[64] Many states are also following Europe's lead and requiring that CPSES be recycled at the end of their life cycle.[65]

Two bills have been proposed to deal with decommissioning bonds at the state level. Senator Yaw introduced Senate Bill 284, an Act amending Title 27 (Environmental Resources) of the Pennsylvania Consolidated Statutes, in environmental protection, providing for decommissioning of solar energy facilities, and Representative Knapp introduced House Bill 2104, An Act amending Title 27 (Environmental Resources) of the Pennsylvania Consolidated Statutes,

[60] *Id.*
[61] *Id.*
[62] *Id.*
[63] *Id.*
[64] PA. PUBLIC UTILITY COMMISSION, SOLAR ENERGY SOLAR LAND LEASE AGREEMENTS FOR LANDOWNERS (Nov. 2019).
[65] *Id.*

providing for decommissioning of alternative energy facilities.[66] Both bills call for decommissioning requirements that will prevent the public from paying the costs associated with dismantling CPSES.[67] The bills also require that the decommissioning bond cover at least 70 percent of the anticipated decommissioning cost.[68] It is important for municipalities to be aware of these bills because both contain a clause that if enacted, the state law will preempt any local solar energy regulation.[69] Senate Bill 284 has been approved by the Senate and is currently with the House of Representatives committee on environmental resources and energy while House Bill 2104 has passed the House of Representatives and is with the Senate committee on environmental resources and energy.[70]

In lieu of state guidance on decommissioning bonds, some municipalities and counties have addressed the issue through their ordinances. Montour and York Counties have nearly identical language in their decommissioning bond provisions and require security "in the form of cash deposit, surety bond, irrevocable letter of credit, cashier's check, or escrow account from a federal or Commonwealth chartered lending institutions in the amount of 110% of the total proposed decommission cost estimate."[71] Southampton Township structures its decommissioning requirements differently and requires "financial security in a form and amount acceptable to the Township," and includes the cost of "restoration of the land to its original condition, including forestry plantings of the same type/variety and density as the original."[72] It also requires the

[66] Lewis Roca, Thomas Doughterty, Dietrich Hoefner, *Solar Decommissioning Debate Heats Up Pennsylvania Legislature*, JDSUPRA, (June 22, 2022), https://www.jdsupra.com/legalnews/solar-decommissioning-debate-heats-up-8744889/.
[67] *Id.*
[68] S.R. 284, 206th Gen. Assemb., Reg. Sess. (Pa. 2022); H.R. 2104, 206th Gen. Assemb., Reg. Sess. (Pa.2022).
[69] *Id.*
[70] *Id.*
[71] MONTOUR COUNTY, PA., ORDINANCE 1 OF 2021, §3(2)(A)(10)(h)(iv) (2021); YORK COUNTY, PA., YORK COUNTY PLANNING COMM'N MODEL ORDINANCE § 4(A)(15)(i)(4)(d) (April 2022) at pg. 10.
[72] SOUTHAMPTON TOWNSHIP, PA., ORDINANCE 2021-003, §4(C)(3) (2021).

estimated cost of decommissioning to be reverified every five years and the security amount to be updated as required.[73] These bond provisions prevent municipalities from bearing the cost of decommissioning.

III. Recommendations

The proposed ordinance includes key elements based on the experience of other municipalities to ensure that CPSES is a beneficial part of agricultural districts. Municipalities with the most effective CPSES ordinances include requirements for agrivoltaics, buffer zones, and decommissioning. The proposed ordinance does not create any financial responsibility on the part of the municipality and ensures that all costs, including decommissioning, are paid by the CPSES owner.

Agrivoltaics is key to the success of CPSES in agricultural districts. The proposed ordinance requires that at least 50 percent of the property be used for agricultural purposes. This helps to ensure that farmland continues to be used for agricultural purposes and is not overrun with solar energy. By utilizing the same area of land for solar energy generation and compatible crop farming or animal pasturing, municipalities can protect agriculture while simultaneously reducing their carbon footprint. Studies have shown that animals raised and plants grown on land in conjunction with CPSES create a symbiotic relationship that municipalities can encourage through these ordinance provisions. The Owens Farm is evidence that agrivoltaics increases the productivity potential of agricultural land.

Buffer zones are another key element of a successful CPSES ordinance. Utilizing native plants allows as a buffer allows CPSES to seamlessly blend in with the Commonwealth's natural habitat. It also allays the concerns of municipal residents who do not want CPSES obstructing the

[73] *Id.*

aesthetic of their municipalities. By requiring solar energy companies to plant native plant species, it will also help to eradicate municipalities of invasive plant species. The vegetative buffering will also serve as a year-round screen for the CSPES and will provide a habitat for pollinator friendly species. Our recommendation is that the buffer will provide complete coverage of the CSPES within three years of planting.

It is also important for municipalities to include comprehensive decommissioning provisions in their ordinance to prevent landowners and the municipality from being encumbered with these costs. The proposed ordinance recommends that these costs be reevaluated every five years to ensure that they are in line with current market standards and pricing. It is also a requirement that all components of the CPSES be recycled upon decommissioning. This prevents CPSES from causing the unintended consequence of creating landfill waste. The decommissioning provision also requires that the land be restored to its condition prior to the installation of the CPSES.

IV. Conclusion

A CPSES can be a beneficial addition to the Commonwealth's farmland and help to reduce its dependence on fossil fuels. Utilizing farmland to produce solar energy in conjunction with agriculture is key to this success. Although there are no municipalities in the Commonwealth that currently address all of the issues surrounding CPSES, those that have done so successfully include provisions for agrivoltaics, buffer zones, and decommissioning. As CPSES gains traction in the Commonwealth, it is important that municipalities draft ordinances that comprehensively address these issues. Counties and municipalities can facilitate the goal of increased use of solar energy in the Commonwealth with the recommendations and accompanying model ordinance.

COMMERCIAL PRINCIPAL SOLAR ENERGY SYSTEMS IN

AGRICULTURAL ZONING DISTRICTS

MODEL ORDINANCE

ORDINANCE NO. _____

AN ORDINANCE OF THE _____ [TOWNSHIP/BOROUGH/CITY] OF _____ COUNTY, PENNSYLVANIA, TO PROMOTE THE GENERAL HEALTH, SAFETY AND WELFARE OF THE COMMUNITY BY ADOPTING AND IMPLEMENTING AN AMENDMENT TO THE ZONING ORDINANCE FOR THE ESTABLISHMENT OF REGULATIONS RELATED TO THE IMPLEMENTATION OF COMMERCIAL PRINCIPAL SOLAR ENERGY SYSTEMS IN AGRICULTURAL ZONING DISTRICTS.

NOW, THEREFORE, IT IS HEREBY ENACTED AND ORDAINED by the authority of the [Council/Board/Supervisors] of the _____ [Township/Borough/City] of _____ County, Pennsylvania:

Chapter 1

General Provisions

Section 101. **Short title**.

This ordinance shall be known as the Mixed-Use Solar Ordinance of the [Township/Borough/City] of _____.

Section 102. **Legal authority**.

The act of July 31, 1968 (P.L.805, No.247), known as the Pennsylvania Municipalities Planning Code, enables a municipality through its zoning ordinance to regulate the use of property and to promote the conservation of energy through access to and use of renewable energy resources.

Section 103. **Purpose**.

The purpose of this ordinance is to:

(1) Promote the creation and proliferation of Commercial Principal Solar Energy Systems in agricultural zoning districts in [municipality];

(2) Provide regulations for the construction, operation, and decommissioning of mixed-use solar while ensuring the protection of the health, safety and welfare of adjacent and surrounding land uses through appropriate zoning and land use controls;

(3) Promote sustainable electricity generation through renewable resources;

(4) Improve the economic condition of landowners by decreasing reliance on traditional power generation;

(5) Increase revenue streams for landowners; and

(6) Improve conditions for agricultural workers and animals.

Section 104. **Definitions**.

The following words and phrases when used in this ordinance shall have the meaning given to them in this section unless the context clearly indicates otherwise:

"Adjacent space mixed-use." A variation of agrivoltaics involving use of a single lot for two concurrent functions, specifically a commercial principal solar energy system next to an agricultural operation. The term includes: commercial principal solar energy system on the same lot and directly beside a field planted with crops or grazed by livestock.

"Agricultural operation." An enterprise that is actively engaged in the agricultural, agronomic, horticultural, silvicultural, or aquacultural business.[74] The term includes: animal husbandry, crop production, machinery sales and repair, fertilizer production and distribution, specialized farming, food, fiber, and energy processing and manufacturing, packaging, transportation, wholesale and retail trade, and related distribution.

"Agrivoltaics." The co-development of the same area of land for both solar photovoltaic power and agricultural operations.

"Buffer." A landscaped or vegetative area intended to be used as a means of limiting the potentially adverse effects created by solar equipment on adjoining properties.[75]

"Commercial Principal Solar Energy System (CPSES)." An area of land used for a solar collection system to capture sunlight, convert it to electrical energy or thermal power, and supply electrical or thermal power primarily for off-site use. The commercial principal solar energy system consists of one or more free-standing ground, floating, or roof mounted solar collector devices, solar related equipment and other accessory structures

[74] DOVER, PA., CODE §27-202 (2021).
[75] YORK CNTY., PA., SOLAR ENERGY SYSTEMS MODEL ORDINANCE § 2 (April 2022).

and buildings including light reflectors, concentrators, heat exchangers, substations, electrical infrastructure, transmission lines and other appurtenant structures.[76]

"Financial security." A monetary assurance of payment including a cash deposit, surety bond, irrevocable letter of credit, cashier's check, or escrow account that is satisfactory to the municipality and municipal solicitor.[77]

"Floating solar." The installation of solar energy systems on ponds, lakes, reservoirs, or other bodies of water.

"Glare." The direct or indirect effect produced by light with an intensity sufficient to cause annoyance, discomfort, or loss in visual performance and visibility.[78]

"Good industry practice." The practices, methods, standards, and acts, engaged in or approved by a significant portion of the solar power industry for similar facilities in similar geographic areas that are similar in size and complexity, that, at a particular time, in the exercise of reasonable professional judgment in light of the facts known at the time the decision was made, would have been expected to accomplish the desired result in a manner consistent with applicable law, regulation, codes, good business standards, reliability, safety, environmental protection, economy, and expedition.[79]

"Impervious area." Any portion of a lot covered by material that cannot be penetrated by precipitation and/or surface water, including buildings, structures, parking lots, parking areas and paved areas.[80]

[76] CUMBERLAND CNTY., PA., SOLAR ENERGY SYSTEMS MODEL ORDINANCE §2 (2011).
[77] YORK CNTY., PA., SOLAR ENERGY SYSTEMS MODEL ORDINANCE §2 (2022).
[78] CUMBERLAND CNTY., PA., SOLAR ENERGY SYSTEMS MODEL ORDINANCE §2 (2011).
[79] YORK CNTY., PA., SOLAR ENERGY SYSTEMS MODEL ORDINANCE §4(A)(2) (2022).
[80] DOVER. PA., CODE §27-202 (2021).

"Impervious surface." Any material which prevents the absorption of water into the ground.[81]

"Lot." A portion, piece, division, or parcel of land.[82]

"Mixed-use solar." A form of agrivoltaics involving simultaneous co-existence and operation of commercial principal solar energy system with agricultural operations on a lot zoned as an agricultural district.

"Permitted use." A use permitted in a particular zoning district. A permitted use shall be deemed not to include any nonconformity.[83]

"Principal use." The main or primary use of property, buildings, or structures.[84]

"Responsible party." The person, partnership, or corporation who own and/or operate the commercial principal solar energy system. If owned and operated by two different entities, the commercial principal solar energy system owner will be the ultimate responsible party.

"Same space mixed-use." A variation of agrivoltaics involving use of a single lot for two concurrent functions, a commercial principal solar energy system and an agricultural operation occurring in the same area. The term includes: floating solar or the use of a commercial principal solar energy system area to grow crops or pasture livestock.

"Setback." The distance between a setback line and a property or street line.[85]

"Solar connection." The electric conveyance lines which connect a solar energy system to the high-voltage electric interconnection grid. [86]

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[81] *Id*.
[82] *Id*.
[83] *Id*.
[84] *Id*.
[85] DOVER. PA., CODE §27-202 (2021).
[86] YORK CNTY., PA., SOLAR ENERGY SYSTEMS MODEL ORDINANCE §2 (2022).

"Solar energy." Direct, diffuse, or reflective radiant energy received from sunlight.[87]

"Solar energy system." Solar related equipment working as a system to capture solar energy, convert it into electrical energy power, and to supply it for use.[88]

"Solar related equipment." Items including a solar photovoltaic cell, module, or array, or solar hot air or water collector device panels, lines, pumps, batteries, mounting brackets, framing and possibly foundations or other structures used for or intended to be used for collection of solar energy.[89] Includes the following:

"Array." A grouping of multiple solar modules, generally up to several feet long.[90]

"Module." A grouping of solar cells, generally 40 or more.[91]

"Photovoltaic cell." The smallest basic solar electric device capable of generating electricity when exposed to sunlight.[92]

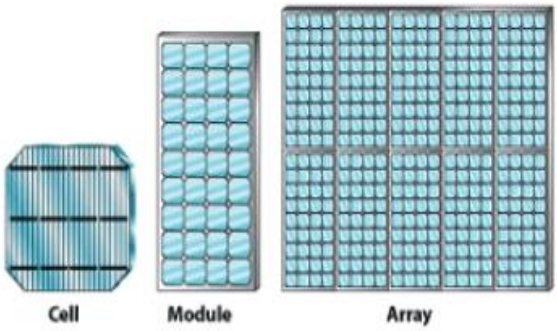

Figure 1. Visual Depiction of Solar Cell, Module, and Array.
Source: Solar Energy Development Programmatic EIS Information Center, https://solareis.anl.gov/guide/solar/pv/index.cfm.

"Use." The specific purpose for which land or a building or structure is designed, arranged, intended, occupied, or maintained.[93]

[87] CUMBERLAND CNTY., PA., SOLAR ENERGY SYSTEMS MODEL ORDINANCE §2 (2011).
[88] DOVER. PA., CODE §27-202 (2021).
[89] CUMBERLAND CNTY., PA., SOLAR ENERGY SYSTEMS MODEL ORDINANCE §2 (2011).
[90] *Id*.
[91] *Id*.
[92] *Id*.
[93] DOVER. PA., CODE §27-202 (2021).

“Zoning hearing board.” A quasi-judicial board within the municipality responsible for overseeing the administration of zoning including variances, special exceptions, amendments, and appeals.

“Zoning officer.” An individual designated by the municipality as having the responsibility for the enforcement of zoning regulations and provisions.

Chapter 2

Requirements and Restrictions

Section 201. **Permitted Use.**[94]

(a) On any lot, agrivoltaics shall be permitted as a use by right in all agriculturally zoned districts through the authorization of two principal uses:

(1) Agriculture, and

(2) The CPSES.

(b) Under Section 201, two authorized CPSES arrangements shall be permitted, provided there is compliance with the remainder of this ordinance:

(1) Adjacent space mixed-use; or

(2) Same space mixed uses.

(c) For all other permitted uses, refer to the requirements in the underlying zoning district.

Section 202. **Requirements.**

The responsible party for any CPSES constructed following the effective date of this ordinance shall be required to obtain and maintain compliance with the terms and conditions set forth within this ordinance.

Section 203. **Lot Characteristics**.

(a) Minimum Lot Size.

[94] Based on the needs and goals of the municipality, this could be changed to conditional use or special exception.

(1) The CPSES shall be situated on a lot not smaller than 10*[95] acres, except as provided in paragraph 203(a)(2).

(2) The CPSES may be located on multiple contiguous lots.

(i) If the contiguous lots have common ownership, the portion of each lot utilized to is irrelevant.

(ii) If each of the contiguous lots have different owners, the minimum lot size for any individual lot shall be 5* acres and at least 50%* of the involved lots host an agricultural operation.

(b) Setback Requirements.

(1) Perimeter Fencing shall be located at least 25* feet from all property or public street/road right-of-way lines. No setbacks are required between contiguous lots that are included within the footprint of the CPSES.[96]

(2) Solar Related Equipment shall be located at least 35* feet from all property lines and 50* feet from all public street/road right-of-way lines. No setbacks are required between contiguous lots that are included within the footprint of the CPSES.[97]

(3) In all cases there shall be a minimum distance of 75* feet between adjacent non-participating residential structures and any component of the CPSES including fences, buildings, and other equipment.[98]

(c) Height. The CPSES shall not exceed 20* feet in height; with the exception of the substations, transmission lines, and infrastructure connecting the CPSES to the electrical grid.[99]

[95] Throughout the model ordinance, the asterisk denotes a suggested number. The number should be adapted to meet the needs and requirements of the municipality adopting the ordinance.
[96] DOVER. PA., CODE §27-665(a)(2)(C)(1) (2021).
[97] *Id*.
[98] *Id*. at §27-665(a)(2)(C)(3).
[99] *Id*. at §27-665(a)(2)(D).

Section 204. **Design and Operational Requirements**.

(a) The layout, design, and installation shall conform to good industry practice and applicable industry standards.

(b) The layout, design, and installation shall comply with the PA Uniform Construction Code and with all other applicable fire and life safety requirements.[100]

(c) Glare prevention and reduction.

(1) The CPSES shall be situated to prevent concentrated glare onto nearby structures or roadways.[101]

(2) Exterior surfaces shall have a non-reflective finish.[102]

(3) CPSES shall not be placed in the vicinity of any airport in a manner that would interfere with airport flight patterns.[103] CPSES shall comply with applicable FAA requirements.[104]

(d) All on-site utility transmission lines and plumbing shall be placed underground to the greatest extent feasible.[105]

(e) Solar connections.

(1) DC voltage solar connections may be located above ground.[106]

(2) AC solar connections shall be located underground where feasible.

However, AC solar connections may be located above ground where the responsible

[100] YORK CNTY., PA., SOLAR ENERGY SYSTEMS MODEL ORDINANCE §4(A)(2) (2022).
[101] MONROE CNTY., PA., MODEL ORDINANCE FOR ON-SITE USAGE OF SOLAR ENERGY SYSTEMS §3(1)(K).
[102] YORK CNTY., PA., SOLAR ENERGY SYSTEMS MODEL ORDINANCE §3(A)(11) (2022).
[103] MONROE CNTY., PA., MODEL ORDINANCE FOR ON-SITE USAGE OF SOLAR ENERGY SYSTEMS §3(1)(L).
[104] *Id*.
[105] YORK CNTY., PA., SOLAR ENERGY SYSTEMS MODEL ORDINANCE §4(A)(4) (2022).
[106] *Id*. at §4(A)(5).

party can demonstrate to the satisfaction of the zoning officer that the overall environmental impacts would support above ground locations.[107]

(f) The CPSES shall be maintained in good working order in accordance with standards of the municipal codes under which the solar energy system was constructed.

(g) The responsible party shall, at the request of the municipality, provide information concerning the amount of energy generated by the CPSES in the last 12* months.[108]

Section 205. **Impervious Coverage**.

The total land area of the CPSES may be covered by no more than 25%* of permanent impervious area. This requirement shall be calculated as a percentage of the total acreage within the CPSES and not on an individual lot basis[109].

(a) Areas within the footprint of the CPSES, including those under the CPSES modules or array, which are maintained in a grassy or vegetative state shall be considered to be pervious areas. Grassy and vegetative areas shall be maintained in compliance with applicable Federal, state, and municipal laws and ordinances.

(b) Areas within the footprint of the CPSES, including those under the CPSES modules or array, maintained non-vegetative material shall be classified consistent with existing municipal ordinances.

(c) The following components of the CPSES shall be considered impervious coverage and calculated as part of the impervious area limitations:

(1) Foundation systems, typically consisting of driven piles or monopoles or helical screws with or without small concrete collars.

[107] *Id*. at §4(A)(5).
[108] *Id. at* 2(A)(8)(c) (2022).
[109] DOVER. PA., CODE §27-665(a)(2)(E) (2021).

(2) All mechanical equipment of CPSES including any transformer, substation, or structures for batteries.

(3) Paved access roads and parking areas servicing the CPSES.

Section 206. **Stormwater Management**.

(a) Stormwater management shall be designed, constructed and maintained in accordance with the municipal stormwater management ordinance of [municipality].

(b) Prohibited Locations. The CPSES shall not be placed within any storm water conveyance system or facility or in any location that would alter or impede storm water runoff from collecting in a constructed storm water conveyance system.[110]

Section 207. **Perimeter Fencing**.[111]

(a) The CPSES shall be completely enclosed by a minimum eight* foot high, chain link fence.

(b) Fence gates shall secured at all times; gates shall be locked when unoccupied.

(c) Clearly visible "High Voltage/Danger" warning signs shall be placed at the base of all transformers and substations and on the fence on the surrounding the CPSES.

Section 208. **Access**.

(a) Driveway. At a minimum, a 20* foot wide access road must be provided from a state or municipal roadway into the site. The access drive or driveway shall be designed and constructed in accordance with applicable ordinances.[112]

[110] *Id*. at §27-665(a)(2)(I)(5).
[111] *Id*. at §27-665(a)(2)(J).
[112] *Id*. at §27-665(a)(2)(G).

(b) Maintenance and Emergency Response.

(1) A gated opening of at least 10* feet shall be constructed in the perimeter fencing to allow vehicular access to the site for maintenance, inspection, or emergency response.

(2) A 15* foot area between the perimeter fence and all solar modules shall be passable and maintained in an unobstructed condition so as to permit vehicular travel along the interior perimeter of the fence[113].

Section 209. **Lighting**.

Lighting shall not be permitted except to the extent required for security or by applicable Federal, state, or local law or ordinance.[114]

Section 210. **Screening and Buffering**. [115]

(a) Vegetative Buffering. The CPSES shall be screened and buffered in accordance with the following standards:

(1) Vegetative buffering, to the extent practical, shall be installed around the entire perimeter of the CPSES installation, except where the municipality determines that the retention of existing trees within the vegetative buffering area may constitute the required vegetative buffer or where the municipality determines that the CPSES cannot be viewed from a public roadway or residential building.

(2) The vegetative buffering shall be installed along the exterior side of the fencing.

[113] *Id*. at §27-665(a)(2)(G)(1).
[114] *Id*. at §27-665(a)(2)(K).
[115] YORK CNTY., PA., SOLAR ENERGY SYSTEMS MODEL ORDINANCE §4(A)(7)(a-g). (2022).

(3) All required vegetative buffering shall be located within 25* feet of the required fencing.

(4) A combination of natural topography and vegetation can serve as a buffer, if the CPSES will not be visible from public roads, public parks, or existing residences on surrounding properties.

(b) Selection of buffering materials.

(1) Vegetative buffering should be designed to emulate the appearance of existing tree lines, hedge rows, and wooded areas already in existence within the landscape where the CPSES is proposed. The responsible party shall assess the species mix and characteristics found in existing tree lines, hedge rows, and wooded areas surrounding the CPSES and document that the vegetative buffering is designed to emulate these characteristics.

(2) Arborvitae may be used as vegetative buffering.

(3) At least 25%* of vegetative buffering plantings shall be pollinator friendly species.

(4) At least 75% of the vegetative buffering plantings must be native to the municipality.

(5) Vegetative buffering shall be selected to provide year-round buffering and shall be of sufficient height, density, and maturity to screen the facility from visibility within 36* months of the installation of the CPSES.

(c) Resolving conflicts between ordinances.

(1) The buffering requirements of this section shall supersede the provisions of any municipal zoning or subdivision and land development ordinance as they may pertain to the CPSES.

(2) No trees or other landscaping otherwise required by the municipal ordinances or attached as a condition of approval of any plan, application, or permit may be removed for the installation or operation of a CPSES without approval of the municipality.

Section 211. **Emergency Management**.

(a) The key for gate should be readily available for emergency responders, consistent with municipal ordinance.

(b) The name and contact information for a local, after-hours emergency contact should be filed with the municipality and responsible emergency response providers including: police, fire, emergency medical services, county Office of Emergency Management, and other designated or appropriate agencies.

(c) An Emergency Management Plan, consistent with standard operating practices of the industry shall be developed by the responsible party and furnished to the municipality, the local fire company, and the county Office of Emergency Management.[116]

Section 212. **Business Information**.

The responsible party shall maintain an accurate phone number for the public to contact with inquiries and complaints throughout the life of the CPSES. This number shall be provided

[116] DOVER. PA., CODE §27-665(a)(2)(J)(3) (2021).

to the municipality and posted on the gate of the CPSES. The responsible party shall respond to the public's inquiries and complaints within 72 hours of notice of the same.[117]

Section 213. **Conservation Incentives**.[118]

The following are incentives for conservation activities that further the agricultural goals of [municipality]. These regulations apply to CPSES in the Agricultural District. Multiple conservation incentives may not be applied to the same area.

(a) Open Space Benefits.[119]

(1) For every 2* acres of land subject to a conservation easement to provide open space benefits as defined in the Land Preservation for Open Space Uses,[120] the landowner's maximum impervious coverage may be increased by 1%*, up to a maximum increase of 20%*.

(2) The Open Space Benefits shall be located on the same property as the CPSES.

(3) The open space benefits shall be secured by a conservation easement in a form acceptable to the municipality under the Conservation and Preservation Easements Act.[121]

(b) Prime (Class I or II) Agricultural Soils.[122]

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[117] *Id*. at §27-665(a)(2)(L).
[118] CUMBERLAND CNTY., PA., SOLAR ENERGY SYSTEMS (SOLAR FARMS) 2022 MODEL ORDINANCE §3(B)(8)(a-e) (2022).
[119] CUMBERLAND CNTY., PA., SOLAR ENERGY SYSTEMS (SOLAR FARMS) 2022 MODEL ORDINANCE §3(B)(8)(a-e) (2022).
[120] Act of December 18, 1996 (P.L. 994, No. 153).
[121] Act of Jun. 22, 2001 (P.L. 390, No. 29).
[122] CUMBERLAND CNTY., PA., SOLAR ENERGY SYSTEMS (SOLAR FARMS) 2022 MODEL ORDINANCE §3(B)(8)(a-e) (2022).

(1) For every 2* acres of prime agricultural soils subject to an agricultural preservation easement as defined in the Land Preservation for Open Space Uses,[123] the landowner's maximum impervious coverage may be increased by 1%*, up to a maximum increase of 20%*.

(2) The prime agricultural soils subject to an agricultural preservation easement shall be located on the same property as the CPSES.

(3) The agricultural preservation easement shall be secured by a conservation easement in a form acceptable to the municipality under the Conservation and Preservation Easements Act.[124]

[123] Act of December 18, 1996 (P.L. 994, No. 153).
[124] Act of Jun. 22, 2001 (P.L. 390, No. 29).

Chapter 3

Decommissioning

Section 301. **Cessation of Operations**.

(a) The responsible party is required to notify the municipality immediately upon cessation or abandonment of the operation of the CPSES.

(b) After the initial commencement of commercial generation of electricity or power, the CPSES shall be presumed to be discontinued or abandoned if no electricity or power is generated by such system for a period of six* continuous months. However, if the responsible party notifies the municipality of a written plan to bring the CPSES back into operation, the municipality may toll this six* month period and shall notify the responsible party of its decision within 45* days of receipt of the responsible party's notice.

Section 302. **Financial Security**.[125]

(a) Initial submission.

(1) The responsible party shall provide financial security, acceptable to the municipality, prior to the operation of the CPSES.

(2) The probable cost of decommissioning and salvageable value shall be determined and certified by a licensed professional engineer.

(3) Financial security shall be calculated as 110%* of the estimated cost of decommissioning, dismantling, and removing the CPSES and restoration of the land to its original condition minus the salvageable value of the solar-related equipment, fencing, buildings, and any other CPSES materials.

[125] DOVER. PA., CODE §27-665(a)(2)(M)(2) (2021).

(4) Regardless of the calculation, the minimum acceptable financial security shall be calculated as $500,000.

(5) The responsible party shall submit a copy of the engineer's certified estimate with an acceptable form of financial security to the township for approval prior to the operation of the CPSES.

(b) Renewal.

(1) Every five* years, the responsible party shall acquire a new engineer's estimate of probable cost of decommissioning.

(2) The responsible party shall pay for all fees associated with the review and approval of each decommissioning cost estimate.

(3) The responsible party shall submit the revised estimate to the municipality for approval in the same manner as the initial submission.

(4) The financial security shall be adjusted upward or downward as necessary. At no time shall the financial security be an amount less than $500,000.

Section 303. **Removal**.[126]

(a) The responsible party shall comply with all of the following:

(1) Within 12* months from the cessation or abandonment of the operation of the CPSES, the responsible party shall remove the CPSES, including all solar related equipment, unless the landowner requests in writing that the access roads are to remain.

(2) Removal of CPSES in decommissioning shall be completed in its entirety.

[126] DOVER. PA., CODE §27-665(a)(2)(M)(3) (2021).

(3) Upon removal, earth disturbance resulting from the removal shall be graded and seeded to re-establish a natural ground cover.

(4) The municipality may authorize no more than two* six-month extensions of the time under paragraph (a)(1), for just cause shown by the responsible party.

(b) If the responsible party fails to dismantle and/or remove the CPSES within the established timeframes of this section, the municipality may complete the decommissioning at the expense of the responsible party, subject to any recovery under the financial security provided above.

Section 304. **Recycling**.

In accordance with industry standards, decommissioned solar related equipment shall be recycled.

Chapter 4

Enforcement, Violations, and Appeals[127]

Section 401. **Enforcement**.

(a) The municipality, on the recommendation of the planning commission, shall have the duty and authority for the administration and general enforcement of the provisions of this ordinance, unless otherwise specified herein.[128]

(b) The zoning officer shall have the duty and authority for controlling enforcement of the provisions of this chapter, as specified or implied herein or in other ordinances of the municipality.[129]

(c) The zoning officer shall ensure that the CPSES meet all the requirements and such are acceptable in accordance with the provisions of this ordinance, and any other applicable Federal, state, or municipal law or ordinance.[130]

Section 402. **Violations**.

(a) Any responsible party who has violated the provisions of this ordinance shall pay a fine of not more than $1500* per violation.

(b) Each day that a violation continues shall constitute a separate violation. The showing of a good faith basis for the responsible party violating the ordinance to have believed there was no violation shall be deemed to have been only one violation until the fifth day

[127] Taken from the Wind Farm Paper, https://widenerenvironment.files.wordpress.com/2022/03/wind-farms.pdf.
[128] Taken from the Accessory Dwelling Units, https://widenerenvironment.files.wordpress.com/2022/03/accessory-dwelling-units.pdf.
[129] *Id*.
[130] *Id.*

following the date of the determination of a violation and thereafter each day that a violation continues shall constitute a separate violation.

(c) If the responsible party who is assessed a penalty neither timely pays nor timely appeals the penalty, the municipality may enforce the penalty pursuant to the applicable rules of civil procedure.

Section 402. **Appeals**.

(a) The responsible party who is assessed a penalty has the right to appeal it within 30* days to the zoning hearing board of [municipality].[131]

(b) The appeal must be made in writing.[132]

(c) The zoning hearing board must review the appeal within 45* days of receipt and determine the proper remedies, recommendations, and next steps.[133]

(d) The zoning hearing board must notify the appellant of their decision no later than 15* days after a determination has been made.

(e) Any appeal of a zoning hearing board decision shall be made in accordance with Federal, state, and local laws.

[131] *Id.*
[132] *Id.*
[133] *Id.*

Chapter 5

Applicability, Severability, Repeals, Effective Date

Section 501. **Applicability**.

(a) CPSES constructed prior to the effective date of this ordinance shall not be required to meet the requirements defined within this ordinance, except as specified in subsection (b).

(b) After the effective date of this ordinance, any physical modification that expands the system, made to an existing CPSES under subsection (b), shall comply with the provisions of this ordinance.

Section 502. **Severability.**

Should any provision or section of this ordinance be held unconstitutional or invalid, such ruling shall not affect the validity of the remaining portions of the ordinance. It is intended that this ordinance shall stand notwithstanding the invalidity of any part thereof.[134]

Section 503. **Repeals**. [135]

Any ordinance of parts thereof that are inconsistent with this ordinance are hereby repealed. The adoption of this ordinance, however, shall not affect or prevent any pending or future prosecution of, or action to abate, any existing violation of the prior ordinance, as amended if the use, so in violation, is in violation of the provisions of this ordinance.

[134] Taken from the Wind Farm Paper, https://widenerenvironment.files.wordpress.com/2022/03/wind-farms.pdf.
[135] *Id.*

Section 504. **Effective Date**. [136]

This ordinance shall take effect in 90* days.

ENACTED this ____ day of ____, _____.

[136] Taken from the Wind Farm Paper, https://widenerenvironment.files.wordpress.com/2022/03/wind-farms.pdf.