FLORIDA HOUSE OF REPRESENTATIVES
BILL ANALYSIS

This bill analysis was prepared by nonpartisan committee staff and does not constitute an official statement of legislative intent.

BILL #: CS/HB 1595	**COMPANION BILL:** CS/SB 1304 (Bradley)
TITLE: Solar Facilities	**LINKED BILLS:** None
SPONSOR(S): Koster	**RELATED BILLS:** None

Committee References

Intergovernmental Affairs (16 Y, 0 N, As CS) ➤ Economic Infrastructure ➤ State Affairs

SUMMARY

Effect of the Bill:

The bill authorizes counties to adopt ordinances requiring the decommissioning of solar facilities at the end of their useful life and to require the owners of such facilities to provide financial assurances to ensure proper decommissioning.

Fiscal or Economic Impact:

The bill will have an indeterminate financial impact on the operators of solar facilities to the extent counties adopt the decommissioning requirements authorized by the bill.

JUMP TO SUMMARY ANALYSIS RELEVANT INFORMATION BILL HISTORY

ANALYSIS

EFFECT OF THE BILL:

The bill revises the current statement of legislative intent concerning the state's solar facility approval process to include ensuring that agricultural land used for a solar facility is returned to its original state and be viable for agricultural use at the end of the life of the solar facility. (Section 1)

The bill defines the terms:

- "Agricultural land" as land within an area categorized as agricultural land in a local government comprehensive plan and includes any agricultural land use category or an agricultural zoning district within an unincorporated area.
- "Decommissioned" as the removal of a solar facility and return of agricultural land that was used for such solar facility to an agriculturally useful condition similar to that which existed before construction of the solar facility, including the removal of above-surface facilities and infrastructure that do not serve a continuing purpose. (Section 1)

The bill authorizes counties to adopt an ordinance requiring any solar facility over two megawatts that is constructed on agricultural land be properly decommissioned once the facility reaches the end of its useful life. The bill creates a presumption that a solar facility has reached the end of its useful life if:

- The facility fails to produce power for 12 months after construction of the facility has been completed, excluding periods due to a disaster or other event beyond the facility owner's control;
- The facility is the process of being constructed and no significant construction has occurred for 24 months; or
- The facility becomes non-operational to a disaster or other event beyond the control of the facility's owner and no significant reconstruction has occurred in 12 months. (Section 1)

A solar facility owner can rebut a presumption that the facility is at the end of its useful life by providing the county with a plan, schedule, and adequate assurances for the continuing construction or operation of the facility.(Section 1)

The bill allows counties to require solar facility owners to provide financial assurance, such as a bond, an irrevocable letter of credit, a guarantee by the solar facility owner's parent company, or another financial device, to the county in an amount adequate to cover estimated decommissioning costs. Facility owners must update the estimated decommissioning costs at least every five years. The county may require the facility owner to adjust any financial assurance to reflect the updated cost estimate. (Section 1)

The bill provides if a facility owner does not complete decommissioning as required by the ordinance, the county may act to complete the decommissioning, including requiring the forfeiture of the financial assurance. The county must allow the solar facility owner at least 12 months to start decommissioning and 24 months to complete decommissioning before acting. (Section 1)

The bill revises a cross-reference to conform to changes made by the bill. (Section 2)

The effective date of the bill is July 1, 2025. (Section 3)

FISCAL OR ECONOMIC IMPACT:

PRIVATE SECTOR:

The bill will have an indeterminate financial impact on the operators of solar facilities to the extent counties adopt the decommissioning requirements authorized by the bill. The bill may also impact the cost of opening new solar facilities to the extent counties reduce the ability to construct solar facilities on agricultural land.

RELEVANT INFORMATION

SUBJECT OVERVIEW:

Ordinances

The Florida Constitution grants local governments broad home rule authority. Non-charter county governments may exercise those powers of self-government that are provided by general or special law.[1] Counties operating under a county charter have all powers of self-government not inconsistent with general law or special law approved by the vote of the electors.[2] Likewise, municipalities have those governmental, corporate, and proprietary powers that enable them to conduct municipal government, perform their functions and provide services, and exercise any power for municipal purposes, except as otherwise provided by law.[3]

Renewable Energy

Current law establishes a number of renewable policies for the state.[4] These policies are intended to promote the development of renewable energy resources in this state, encourage fuel diversification to meet Florida's growing dependency on natural gas for electric production, minimize the volatility of fuel costs, encourage investment within the state, improve environmental conditions, and make Florida a leader in new and innovative technologies.[5]

Renewable energy is defined as electrical energy produced from a method that uses one or more of the following fuels or energy sources:

- Hydrogen produced from sources other than fossil fuels;
- Biomass;

[1] Art. VIII, s. 1(f), Fla. Const.
[2] Art. VIII, s. 1(g), Fla. Const.
[3] Art. VIII, s. 2, Fla. Const.
[4] S. 366.91, F.S.
[5] S. 366.91(1), F.S.

- Solar energy;
- Geothermal energy;
- Wind energy;
- Ocean energy; and
- Hydroelectric power.[6]

Solar Energy

Solar energy is a form of renewable energy by which power is produced from the sun. The sun emits solar radiation in the form of light. Solar energy technologies capture this emitted radiation and convert it into energy.[7] The two main types of solar energy technologies are:

- Photovoltaics (PV), which is the technology that is familiar to most people. PV is used in solar panels. When sunlight (i.e. radiation) hits a solar panel, the energy from that sunlight is absorbed by the PV cells in the panel. This absorbed energy creates electrical charges which move in response to an electrical field internal to the PV cell. These charges then allow electricity to flow from the panel.[8] Solar panels can be used in small scale (such as home rooftop solar) up to large utility-scale operations; and
- Concentrating solar-thermal power (CSP), which uses a system of mirrors to reflect and concentrate sunlight onto a receiver. This concentrated sunlight heats a high temperature fluid in the receiver to create thermal energy. This thermal energy can be used to spin a turbine (similar to how any coal or gas-fired power plant would work) or power an engine to create energy. The heat can also be used in industrial applications such as water desalination, enhanced oil recovery, food processing, chemical production, and mineral processing. CSP-based systems are generally used for utility scale operations. However, some single receptor and engine systems can be as small as 5 to 25 kilowatts and be used for distributed power applications.[9]

Solar Facility Development in Agricultural Areas

A utility-scale solar generation system requires larger quantities of land per unit of power produced than traditional power plants.[10] Solar generation facilities require "at least [ten] times as much land per unit of power produced than coal or natural gas-fired power plants."[11] Solar facilities are generally located where resource availability (i.e. suitably large-enough land at reasonable prices) is highest, instead of where it is most convenient for people and infrastructure. As a result, these projects tend to end up in less industrially-developed areas, such as agricultural areas. Siting such facilities can be challenging and the facilities are sometimes viewed as unpopular by those who do not want these large projects near their homes.[12]

There has been, especially over the last several years, growing concern and sentiment against widespread development of solar facilities in agricultural areas. These concerns include:

- Aesthetic impacts.[13] Some are concerned that the solar facilities negatively impact the visual character of agricultural areas and negatively impact historical, eco, and agricultural tourism. This may have long-term impacts on the character of rural and agriculture areas and property values.[14]
- Impact on the agricultural industry by reducing the "prime" areas available for agricultural production.[15] This could have a negative impact on agricultural supply chain resiliency[16] and increase prices or competition for agricultural land.[17]

---

[6] S. 366.91, F.S.
[7] United States Office of Energy Efficiency and Reliability, *Solar Energy* (last visited Mar. 28, 2025).
[8] United States Department of Energy, *How Does Solar Work* (last visited Mar. 28, 2025).
[9] United States Department of Energy, *Concentrating Solar-Thermal Power Basics* (last visited Mar. 28, 2025).
[10] Samantha Gross, Brookings, *Renewables, land use, and local opposition in the United States*, Jan. 2020 (last visited Mar. 28, 2025).
[11] *Id*.
[12] *Id*.
[13] Nichola Groom, Reuters, *U.S. solar expansion stalled by rural land-use protests*, Apr. 7, 2022 (last visited Mar. 28, 2025).
[14] *Id* and Inhwan Ko, *Rural opposition to landscape change from solar energy: Explaining the diffusion of setback restrictions on solar farms across South Korean counties*, Energy Research & Social Science, Vol. 99, 2023 (last visited Mar. 28, 2025).
[15] Zachary A. Goldberg, *Solar energy development on farmland: Three prevalent perspectives of conflict, synergy and compromise in the United States*, Energy Research & Social Science, Vol. 101, 2023 (last visited Mar. 28, 2025).

- Impacts on local agricultural-related industry.[18]
- Environmental impacts such as runoff of water and topsoil, erosion, flood control, damage from materials used in solar power facilities, dust, noise and light pollution, and loss of wildlife habitat.[19]
- Perception that rural areas bear greater burden, without benefit, to provide power for far-away more densely populated urban and suburban areas.[20]
- The complexity and cost of connecting potentially far-flung agricultural areas producing power to power-consuming urban and suburban areas. Extensive rural solar development requires significant upgrades to transmission infrastructure (which can be a very time-consuming process) and construction of new transmission lines can cause costly disruptions to agricultural operations.[21]
- Future decommissioning procedures, responsibilities, and costs.[22]

Solar Facilities

Current law provides that solar facilities are a permitted use in all agricultural land use categories in a local government comprehensive plan and all agricultural zoning districts within an unincorporated area.[23] Counties may adopt ordinances specifying buffer and landscaping requirements for solar facilities, but those requirements cannot exceed requirements for similar uses involving the construction of other facilities that are permitted uses in agricultural land use categories and zoning districts.[24]

Decommissioning Solar Facilities

Solar panels are generally designed to have a lifespan of approximately 25 to 35 years.[25] Solar panels will not fail, per se, after this time, however its energy generation will likely be significantly less than the manufacturer intended after the end of that "lifespan." Most solar panels have a yearly degradation in power production of approximately 0.5 percent,[26] thus, over the course of 25 to 35 years, the power production of a panel could be expected to drop to approximately 87.5 percent to 82.5 percent of its original generating capacity.

Most of the solar PV systems in the world are young—according to the United States Department of Energy, approximately 70 percent of solar systems in existence have been installed since 2017. Thus, while some solar equipment has entered the waste stream, significantly more systems will be reaching their end-of-life stage in the next few decades.[27]

At the end of the useful life of a solar facility, operators generally have three choices:
- Refurbishing the plant by correcting any deficiencies;
- Repowering the plant with new PV modules and inverters; or
- Decommissioning the plant and removing all the hardware from the site.[28]

---

[16] *Id.* and Fred Pearce, Yale Environment 360, *'Green Grab': Solar and Wind Boom Sparks Conflicts on Land Use*, Feb. 20, 2025 (last visited Mar. 25, 2025).
[17] Tom Daniels and Hannah Wagner, Kleiman Center for Energy Policy, *Regulating Utility-Scale Solar Projects on Agricultural Land*, Aug. 11, 2022 (last visited Mar. 28, 2025).
[18] *Id.*
[19] Julia Simon, National Public Radio, *In some fights over solar, it's environmentalist vs. environmentalist*, Jun. 18, 2023 (last visited Mar. 28, 2025).
[20] Krishna Ramanujan, Cornell Chronicle, *Lack of local benefits fuels upstate opposition to solar farms*, May 3, 2023 (last visited Mar. 28, 2025).
[21] Betty Resnick and Arica Hamilton, American Farm Bureau Federation, *Solar Energy Expansion and its Impacts on Rural Communities*, Aug. 8, 2024 (last visited Mar. 28, 2025).
[22] *Id.*
[23] S. 163.3205(3), F.S.
[24] S. 163.3205(4), F.S.
[25] Berkeley Lab, Energy Markets and Policy, *New study finds increase in expected useful life and decrease in operating expenses over time for utility-scale PV*, Jun. 2, 2020 (last visited Mar. 28, 2025).
[26] Mark Richardson, U.S. Light Energy, *How Long Do Solar Farms Last?*, Nov. 17, 2023 (last visited Mar. 28, 2025).
[27] United States Department of Energy, *End-of-Life Management for Solar Photovoltaics* (last visited Mar. 28, 2025).
[28] Taylor Curtis, et al., National Renewable Energy Laboratory, *Best Practices at the End of the Photovoltaic System Performance Period*, p. 1, Feb 2021 (last visited Mar. 28, 2025).

Abandoning in place is also a potential option, however, this is often unacceptable to landholders and, increasingly, regulators.[29]

Solar decommissioning is the process for removing an abandoned solar panel system and remediating the land. When describing requirements for decommissioning sites, it is possible to specifically require the removal of infrastructure, disposal of any components, and the stabilization and re-vegetation of the site.[30] Local governments may require having a plan in place to remove solar panel systems at the end of their lifecycle, which is typically 20-40 years. A decommissioning plan outlines required steps to remove the system, dispose of or recycle its components, and restore the land to its original state. Plans may also include an estimated cost schedule and a form of decommissioning security in the form of bonds to guarantee the availability of funds for system removal.[31] Landowners and local governments should consider allowing a periodic reevaluation of decommissioning costs during the project's lifetime by a licensed professional engineer, as costs could decrease, and the required payment should be reduced accordingly.[32]

A licensed professional engineer can estimate decommissioning costs which vary across the United States. Decommissioning costs will vary depending upon project size, location, and complexity. The current estimated cost of decommissioning tasks is $60,200.[33]

BILL HISTORY

COMMITTEE REFERENCE	ACTION	DATE	STAFF DIRECTOR/ POLICY CHIEF	ANALYSIS PREPARED BY
Intergovernmental Affairs Subcommittee	16 Y, 0 N, As CS	4/1/2025	Darden	Burgess
THE CHANGES ADOPTED BY THE COMMITTEE:	• Retains provisions of current law that authorize solar facilities as a permitted use in all agricultural land use categories and zoning districts that exempt solar facility substations from local government land development regulations concerning setback, landscaping, buffering, screening, lighting, and other aesthetic compatibility-based standards.			
Economic Infrastructure Subcommittee				
State Affairs Committee				

THIS BILL ANALYSIS HAS BEEN UPDATED TO INCORPORATE ALL OF THE CHANGES DESCRIBED ABOVE.

---

[29] *Id.*
[30] New York State Energy Research and Development Authority, *Decommissioning Solar Panel Systems* (last visited Mar.14, 2025)
[31] *Id.*
[32] *Id.*
[33] *Id.*