

PENNSYLVANIA AUDUBON COUNCIL

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Guidelines for Municipalities: Developing Bird-Friendly and Environmentally Responsible Utility-Scale Solar

Executive Summary

These guidelines were prepared by the Pennsylvania Audubon Council's Renewable Energy Committee (REC) to provide proper siting criteria and information on utility-scale solar projects in Pennsylvania in order to ensure that critical bird areas, migration routes, and important wildlife habitats are protected; and to offer methods to minimize and mitigate the impact of utility-scale solar projects on birds and other wildlife.

Climate change is one of the biggest threats to birds, both now and in the future. Counteracting this threat means not only dramatically reducing carbon emissions but doing so in a way that does not cause further harm to birds and their habitats. In that regard, utility-scale solar projects should be sited as close to users as possible, both to minimize bird deaths from collisions with transmission lines and to avoid the energy losses that occur during transmission and distribution. Additional recommendations for proper siting of renewable energy projects include:

- Forests should not be logged.
- Migratory flyways, including ridgetops and stopovers such as wetlands, grasslands, forests, conservation areas, and lakes should be avoided.
- Habitat fragmentation should be limited.
- Degradation of habitat from construction of roads, soil compaction and erosion, and road dust should be avoided, and
- Introduction of invasive plants should be avoided, while native plants should be included.

Development should be sensitive to community values and needs. In that regard it is critical to engage local communities early and often in order to: build a trusting dialogue around the project and community goals; avoid negative community and cultural impacts; support community needs and benefits; and support local workforce development, diversity, equity, and inclusion goals.

Under state law, municipalities are given broad authority to regulate all forms of development in their jurisdiction, including utility-scale solar. The Guidelines show how a municipality can develop an ordinance with regulations and permitting requirements to ensure that solar development is consistent with the planning goals of the municipality, conserves natural resources and habitat, and provides assurances for the health and economic interests of the community.

Recommendations for Utility-Scale Solar Ordinances:

A utility-scale solar ordinance should include all matters related to the permitting, design, construction, operation and decommissioning of a solar energy facility. If a municipality has zoning, then the ordinance should designate if permitting is by special exception, conditional use, or by right. A district overlay for solar may also be developed. If a municipality does not have zoning, it is recommended that utility-scale solar regulations be amended into the municipality's Subdivision and Land Development Ordinance or approved as a stand-alone ordinance.

For utility-scale solar projects, the REC recommends site preparation prior to the installation of solar panels, including the use of native grasses and pollinator plantings under and around solar panels, native plant buffers, wildlife friendly fencing, creation of wildlife corridors, minimization of wildlife deaths from transmission lines, and decommissioning plans. Tree cutting and forested land clearing should be discouraged and if necessary, compensated for by acquisition and preservation of forested parcels elsewhere. Low-impact solar development is recommended. Unlike traditional solar development which uses land solely for energy generation, low-impact solar can include native vegetation and pollinator habitat, solar-integrated greenhouses, co-location of agriculture and solar, sheep grazing, and beekeeping. Considerations for siting best practices and sustainable design provided by the PA Department of Environmental Protection and the PA Department of Conservation Resources are also recommended.

This paper lists areas that should be protected from utility-scale solar development:

- Public and protected lands, historic places and structures, forested land, ridge tops
- Areas included in the Pennsylvania National Heritage Program, Audubon Important Bird Areas
- Areas of special value for culture, archeology, recreation, tourism, or natural resources, including viewsheds or areas of natural beauty
- Prime farmland and farmland in Agricultural Protection Zones

Recommendations for Permitting:

The following is a partial list of the many suggested recommendations for permitting:

- A narrative that provides an exhaustive overview of the project including information on other locations that were considered and the criteria used for the selection of this location. Such narrative should include comments and quantitative analysis on the expected positive impacts to carbon/greenhouse gas emissions of the project's electricity generation based on both expected capacity factor and nameplate capacity versus the current generation that it can be expected to replace, and narrative and analysis on the negative carbon impacts of the project.
- Copies of federal and state agency application permits, and all documentation of plan submissions, related required studies and reports related to all such permitting requirements.
- A site plan of the development site and extended setback boundaries.
- Documentation confirming compliance with the National Pollutant Discharge Elimination System (NPDES) regulations.
- Documentation and/or proof demonstrating compliance with the Pennsylvania Natural Heritage Program (PNHP) to protect biological species listed as endangered, threatened, or rare as listed by the Department of Conservation and Natural Resources (DCNR), PA Game Commission, PA Fish and Boat Commission, U.S. Fish and Wildlife Services, and species recommended for protection by the Pennsylvania Biological Survey.
- A comprehensive Environmental Stewardship Plan (ESP), that provides a narrative on the responsible use and protection of the project area shall be submitted by a qualified consultant.
- A property value impact study prepared by an independent appraiser having appropriate qualifications and a Real Property Value Protection Agreement secured by a bond to cover a projected loss if indicated in the study.
- A variety of studies and plans that include among others an Environmental Impact Study, an Emergency Response Plan, Glare and Noise Impact Assessments, and an Economic Impact Study.
- Annual Reporting requirements, periodic re-permitting requirements and responsibilities for Maintenance, Repair and Replacement.
- Liability Insurance Requirements.
- A Decommissioning study and plan, and bonding of the decommissioning costs.

An extensive list of resources is included in the appendices at the end of the paper.

There is significant developmental pressure for utility-scale solar projects throughout Pennsylvania. This white paper provides a framework of recommendations that citizens and municipalities can utilize to develop proper siting restrictions for solar in their community so that development is consistent with municipal comprehensive plans and local land use practices. In addition, specific recommendations for protecting wildlife and natural habitats are provided, as saving wild places and wildlife helps to provide clean water, space, and healthy living conditions for the human community.

*The Pennsylvania Audubon's Council Renewable Energy Committee aims to provide information to Pennsylvania Audubon Chapters and others on a) proper siting criteria for renewable energy projects to ensure that critical bird areas, migration routes and important wildlife habitats are protected, and b) methods to minimize and mitigate the impact of renewable energy projects on birds and other wildlife. The white paper: **"Guidelines for Municipalities: Developing Bird Friendly and Environmentally Responsible Utility Scale Solar,"** represents the position of the Pennsylvania Audubon Council's Renewable Energy committee which is solely responsible for its content.*