

# GUIDE ON LAND USE LAWS GOVERNING THE SITING OF LARGE SCALE SOLAR FACILITIES

## I. Introduction

Concern about climate change and the volatility of over-reliance on fossil fuels has resulted in an increase in public and private interest in and development of alternative energy sources, including from solar.

1000 Friends has led efforts to use land use tools to reduce greenhouse gas emissions, and supports generating energy from non-fossil fuel sources, including wind and solar facilities. However, these each have distinct siting challenges that need to be balanced with other needs and values, including conservation of working farm and forest lands, natural resources, and wildlife habitat. Large scale solar facilities can extend over large swaths of land, essentially blocking or restricting sun and water, impacting the vegetation and soil beneath, and if located improperly, restricting wildlife migration and fragmenting habitat.<sup>1</sup>

The Oregon legislature and the state administrative agency, the Department of Land Conservation & Development (DLCDC), have passed statutes and rules to govern the siting of large solar facilities, sometimes called “solar arrays” or “solar farms.” These are usually sited at the county level, by a solar developer submitting a land use application to a county, requesting a conditional use permit to site a facility.<sup>2</sup>

In recent years certain parts of Oregon have seen an uptick in land use applications for large-scale solar facilities. These applications are often for a conditional use permit to site a photovoltaic solar power generating facility on farm or range land. The sizes have ranged from 12-acre to 300-acre facilities. In some cases, multiple facilities have been applied for, on adjacent properties or in close proximity to each other.

Neighbors and others concerned with the impact of possible improper siting or sizing of solar generating facilities, and with the cumulative impacts of several such facilities in the same geographic area, have contacted 1000 Friends for advice. This Guide is designed to provide basic information on the law governing siting of large scale solar facilities on farm and range lands, so Oregonians can meaningfully participate in these proceedings at the local level.

## II. LAWS: Where are solar facilities allowed, what size, and under what conditions?

The regulatory authority in charge of reviewing solar facilities is different depending on the size of the proposed facility. Smaller facilities will be reviewed at the county level and larger facilities will be reviewed by the state Energy Facilities Siting Council.

If the facility is proposed for siting on farmland, the reviewing authority will apply certain substantive criteria to determine whether the facility will be approved. Some of the specific criteria being applied can be found in OAR 660-033-0130(38). Note: the criteria in Subsection (38) is extensive and should be reviewed carefully.

#### Facilities Over 100 Acres

Before a solar facility can be built in Oregon, the developer must apply for a Site Certificate from the Energy Facility Siting Council. Solar facilities of the following location and size require a certificate from the Council:

- A solar facility using more than 100 acres of High Value Farm Land
- A solar facility using more than 100 acres of land composed of soils in the Natural Resources Conservation Service lands capability classes I-IV,
- A solar facility using at least 320 acres located on any other land.

The public can research the soil classification of specific tracts on the Natural Resources Conservation Service website.<sup>3</sup>

#### Facilities on Agricultural Land: Areas Zoned For Exclusive Farm Use

Solar facilities may be built on lands zoned for exclusive farm use (EFU) as long as the local County Commission or its designee (“county”) finds that the use will not force a significant change in accepted farm or forest practices on surrounding lands that are devoted to farm or forest use, or significantly increase the cost of accepted farm or forest practices on surrounding lands that are devoted to farm or forest use. When a county considers a proposed solar facility in an EFU area, it may impose conditions on approval to ensure conformance with these standards.<sup>4</sup>

#### Agricultural Land: High Value Farm Land

Whether a tract is considered High Value farmland depends on the Natural Resources Conservation Service soil classification, where the land is located in the state, and what is grown on the tract. The public can cross check whether a specific parcel is High Value farmland by comparing it to the complete list of criteria in Oregon Revised Statutes 195.300(10).<sup>5</sup> Notably, any property located within an irrigation district, regardless of soil class, is considered high value farmland under the criteria in ORS 195.100.

#### Agricultural Land: High Value Farm Land: Facilities Less than 48 Acres

A solar facility using less than 48 acres of High Value farm land must not prevent more than 12 acres from being used as a commercial agricultural enterprise. The county must find that the solar facility will not create unnecessary negative impacts on agricultural operations on the tract, result in unnecessary soil erosion or loss that could limit agricultural productivity, result in unnecessary soil compaction that reduces the productivity of soil for crop production, or result in an introduction or spread of noxious weeds or other undesirable weed species. In addition, a solar facility may not be located on High Value farm land soils unless non-High Value farm land soils are not

available on the subject tract, siting on non-High Value farm land soils would be unproductive, or the location actually benefits existing commercial farm or ranching operations. Also, a one-mile radius study area around the project must be established and monitored.<sup>6</sup>

Agricultural Land: High Value Farm Land: Facilities More than 48 Acres

A solar facility using more than 48 acres of High Value farm land must meet all the requirements for smaller solar facilities; in addition, it must not materially alter the stability of the overall land use pattern of the area. That can occur by making it more difficult for existing farms and ranches in the area to continue operation due to diminished opportunities to expand, purchase or lease farmland, or acquire water rights, or by reducing the number of tracts or acreage in farm use in a manner that will destabilize the overall character of the study area.<sup>7</sup>

Agricultural Land: Arable Farm Lands

A tract is Arable farm land if it is predominantly cultivated or predominantly comprised of soils suitable for cultivation.<sup>8</sup>

Agricultural Land: Arable Farm Lands: Facilities Less than 80 Acres

A solar facility using less than 80 acres of Arable farm lands may not prevent more than 20 acres from being used as a commercial agricultural enterprise. The county must find that the solar facility will not be located on High Value farm land soils or Arable soils unless Nonarable soils are not available, siting on Nonarable lands would be unproductive, or the location actually benefits existing commercial farm or ranching operations. In addition, no more than 12 acres of the project can be sited on High Value farm land soils. Also, a one-mile radius study area around the project must be established and monitored.<sup>9</sup>

Agricultural Land: Arable Farm Lands: Facilities More than 80 Acres

A solar facility using more than 80 acres of Arable farm land must meet all the requirements for smaller solar facilities; in addition, it must not materially alter the stability of the overall land use pattern of the area. That can occur by making it more difficult for existing farms and ranches in the area to continue operation due to diminished opportunities to expand, purchase or lease farmland, or acquire water rights, or by reducing the number of tracts or acreage in farm use in a manner that will destabilize the overall character of the study area.<sup>10</sup>

Agricultural Land: Nonarable Farm Lands

A tract is Nonarable farm land if it is predominantly not cultivated and predominantly comprised of soils not suitable for cultivation. A solar facility using Nonarable farm land may not preclude more than 320 acres from use as a commercial agricultural enterprise. The county must find that the solar facility will not be located on High Value farm land soils or Arable soils, unless siting on Nonarable lands would be unproductive, or the location actually benefits existing commercial farm or ranching operations. In

addition, no more than 12 acres of the project can be sited on High Value farm land soils and no more than 20 acres of the project can be sited on Arable soils.<sup>11</sup>

#### Agricultural Land: Nonarable Farm Lands: Resources

If a solar facility is proposed in an area that includes a Goal 5 resource (natural resources, scenic and historic areas, and open spaces) protected under the county's comprehensive plan, and the proposal does not address conflicts between the solar facility and the resource, then the applicant, the county, and any state or federal agency responsible for protecting the resource must develop a resource management plan to mitigate potential conflicts. If there is no program already in existence to protect the resource(s) present and the parties cannot agree on a resource management plan, then the county is responsible for determining appropriate mitigation measures.<sup>12</sup>

#### Agricultural Land: Nonarable Farm Lands: Species

If a solar facility is proposed in an area that the Oregon Department of Fish and Wildlife determines might host state or federal special status species (threatened, endangered, candidate, or sensitive); big game winter range habitat or migration corridor; golden eagle or prairie falcon nest sites; or pigeon springs, then the developer must work with all appropriate state, federal, and tribal wildlife management agencies to assess the land and determine whether adverse effects to such species or habitats are expected. If impacts are anticipated the parties must establish methods to avoid adverse effects to species or habitats. If the adverse effects cannot be avoided, then the parties must develop mitigation measures to offset the potential adverse effects of the facility. If the applicant and the resource management agency cannot agree on what mitigation will be carried out, the county is responsible for determining appropriate mitigation.<sup>13</sup>

#### Agricultural Land: Bonds/Securities/Retirement

To ensure that the developer rather than the public shoulders any costs incurred as a result of a solar facility, the county can require a bond or other security from a developer, or otherwise impose the responsibility for retiring a photovoltaic solar power generation facility.<sup>14</sup>

### **III. SOME HOLES IN THE LAW: What should concerned citizens watch for?**

#### Cumulative Effects

The land use laws governing the siting of large scale solar facilities do not specifically require a cumulative effects analysis, so theoretically multiple solar facilities could be located in an area. However, several legal tools exist that can be used to trigger a cumulative effects analysis, including:

- conditions on a Site Certificate from the Energy Facility Siting Council
- conditions a conditional use permit from a county
- the 1-mile radius study area required for any solar facility on High Value farm land or Arable farm land

- the requirement that any solar facility larger than 48 acres on EFU land not materially alter the stability of the overall land use pattern of the area.

However, unless the public raises the issue, it is up to the developer and approving agencies to address the potential of cumulative impacts.<sup>15</sup>

#### **IV. NATURAL RESOURCES: Are there impacts to water, land, habitat & wildlife?**

##### Water

Large scale solar facilities can require a lot of water for cooling and washing off panels. Removing water from a surrounding area for use at solar facilities can divert water away from agriculture, ranching, plants, and animals, and might also raise legal water rights issues. This issue can be amplified in an area experiencing drought or a water shortage.<sup>16</sup>

##### Land, Soil & Habitat

Large scale solar facilities need a large amount of land, often thousands of acres. During construction, the land is cleared of all vegetation and often graded to have minimal slope. Soil is compacted. These changes to the land can cause habitat loss, degradation, and fragmentation. In addition, lands used for large scale solar facilities are not multi-use compatible, meaning that the specific land used to construct a large scale solar facility cannot be simultaneously used for other purposes such as agriculture, ranching, or habitat conservation.<sup>17</sup>

##### Wildlife

Construction of large scale solar facilities involves noise and light that can disturb wildlife to the point they can no longer use the area. Also, birds could mistake the reflective surfaces of the mirrors and solar panels as a body of water, known as the “lake effect,” causing injury or death from collisions or incineration by concentrated beams of sunlight. Ideally large scale solar facilities should be sited to avoid populations of rare or endangered species, major migratory routes and connected habitat, wetlands, or areas close to certain active agricultural lands where birds congregate.<sup>18</sup>

##### Scenic Viewsheds

Construction of large-scale solar facilities can also impact scenic viewsheds in rural landscapes.

#### **V. OPPORTUNITIES FOR PARTICIPATION: Can citizens influence the process?**

Many opportunities exist for the public to participate in the solar facility siting process and share concerns, suggestions for conditions, and general local knowledge.

##### Facilities Over 100 Acres: Public Comment

The Oregon Department of Energy will hold a public hearing on a solar facility application for a Site Certificate from the Energy Facility Siting Council. The public may submit written comments in advance and also give testimony in person at the hearing. The public can contact the Department or Council to inquire about upcoming hearings.<sup>19</sup>

#### Facilities in Agricultural Lands: Public Comment

The county will consider a conditional use permit for a solar facility in an area zoned for exclusive farm use via a quasi-judicial hearing. The public may provide in-person testimony at the hearing. This is a good opportunity to suggest conditions of approval that can aid in reducing the impact of a solar facility in a surrounding area, such as vegetative buffers consisting of native plants, avoidance or conservation of wildlife corridors or reductions in acreage. The public can contact their local county planning department to inquire about upcoming hearings.<sup>20</sup>

#### Facilities in Agricultural Lands: Post Approval Complaints

A person engaged in farm or forest practices on lands devoted to farm or forest use may file a complaint with the county asserting that a solar facility has violated a condition of approval, that the violation has forced a significant change in accepted farm or forest practices on surrounding lands devoted to farm or forest use, or significantly increased the cost of accepted farm or forest practices on surrounding lands devoted to farm or forest use. The complainant must demonstrate that it is adversely affected by the violation.<sup>21</sup>

### **VI. Where should solar energy arrays and facilities be sited?**

The Oregon legislature has recognized an overarching policy of compact urban development. Under ORS 197.012 in areas of the state that are growing rapidly, state agencies, cities and counties should, within constraints of applicable federal law and regulations, state law and rules, and local ordinances: (1) Consider directing major public infrastructure investments, including major transportation investments, to reinforce compact urban development; and (2) Consider giving priority to investments that promote infill or redevelopment of existing urban areas to encourage the density necessary to support alternative modes of transportation.

To comply with the policy in ORS 197.012, counties and the EFSC should consider siting industrial solar arrays and facilities, which are major public infrastructure projects, in areas that will promote redevelopment of existing urban areas and reinforce compact urban development. Allowing solar arrays on farmland, particularly high value farmland, does not reinforce compact urban development or promote redevelopment of existing urban areas. Solar development should be sited at or near point of use or within the built environment, such as on existing industrial sites and otherwise unusable space. The EPA and the American Planning Association encourage development of solar on targeted sites

including brownfields, Superfund sites, RCRA sites, mining sites, landfills, abandoned parcels, parking lots and commercial/industrial rooftops, instead of greenspace.<sup>22</sup>

There are other good options for solar development in Oregon. A community solar farm or garden is a solar power installation that accepts capital from and provides output credit and tax benefits to individual and other investors. In some systems ratepayers buy individual solar panels, which are installed on the farm after their purchase. The goal of these projects is to have ratepayers participate directly in local solar projects. An alternative to community solar is to have community involvement in large-scale solar projects through vehicles such as energy co-ops.

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<sup>1</sup> For an overview, see Union of Concerned Scientists, *Environmental Impacts of Solar Power*, [http://www.ucsusa.org/clean\\_energy/our-energy-choices/renewable-energy/environmental-impacts-solar-power.html#VxMfCTArK70](http://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/environmental-impacts-solar-power.html#VxMfCTArK70)

See also, *The Guardian*, *Solar is Booming but Solar Parks Could Have Unintended Climate Consequences*, <http://www.theguardian.com/sustainable-business/solar-power-parks-impact-environment-soil-plants-climate>

<sup>2</sup> Under certain circumstances, large scale solar facilities may fall under the jurisdiction of the Energy Facilities Siting Council. See discussion below.

<sup>3</sup> ORS § 469.320; ORS § 469.300(11)(D);

<http://www.nrcs.usda.gov/wps/portal/nrcs/soilsurvey/soils/survey/state/>

<sup>4</sup> ORS § 215.283(2)(g); ORS § 215.296(1); ORS § 215.296(2); ORS § 215.296(10).

<sup>5</sup> ORS § 195.300(10); OAR § 660-033-0020(8).

<sup>6</sup> OAR 660-033-0130(38)(f).

<sup>7</sup> OAR 660-033-0130(38)(f).

<sup>8</sup> OAR 660-033-0130(38)(a).

<sup>9</sup> OAR 660-033-0130(38)(g).

<sup>10</sup> OAR 660-033-0130(38)(g).

<sup>11</sup> OAR 660-033-0130(38)(c); OAR § 660-033-0130(38)(h).

<sup>12</sup> OAR 660-033-0130(38)(h).

<sup>13</sup> OAR 660-033-0130(38)(h).

<sup>14</sup> OAR 660-033-0130(38)(j).

<sup>15</sup> Relatedly, some large scale solar facilities will require environmental review under the National Environmental Policy Act, which does require a cumulative effects analysis. 40 C.F.R. § 1508.7; 40 C.F.R. § 1508.25; 40 C.F.R. § 1508.27.

<sup>16</sup> U.S. Fish & Wildlife Service, Energy Technology and Impacts,

<https://www.fws.gov/ecological-services/energy-development/solar.html>, Union of Concerned Scientists, Environmental Impacts of Solar Power,

[http://www.ucsusa.org/clean\\_energy/our-energy-choices/renewable-energy/environmental-impacts-solar-power.html](http://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/environmental-impacts-solar-power.html)

<sup>17</sup> U.S. Fish & Wildlife Service, Energy Technology and Impacts,

<https://www.fws.gov/ecological-services/energy-development/solar.html>, Union of

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Concerned Scientists, Environmental Impacts of Solar Power, [http://www.ucsusa.org/clean\\_energy/our-energy-choices/renewable-energy/environmental-impacts-solar-power.html](http://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/environmental-impacts-solar-power.html)

<sup>18</sup> U.S. Fish & Wildlife Service, Energy Technology and Impacts, <https://www.fws.gov/ecological-services/energy-development/solar.html>, American Bird Conservancy, Position Paper on Solar Energy, <https://abcbirds.org/wp-content/uploads/2015/05/PP-Solar-Energy.pdf>, Union of Concerned Scientists, Environmental Impacts of Solar Power, [http://www.ucsusa.org/clean\\_energy/our-energy-choices/renewable-energy/environmental-impacts-solar-power.html](http://www.ucsusa.org/clean_energy/our-energy-choices/renewable-energy/environmental-impacts-solar-power.html)

<sup>19</sup> OAR 345-015-0220.

<sup>20</sup> ORS § 197.763; ORS § 215.296(2); ORS § 215.296(10).

<sup>21</sup> ORS § 215.296(3).

<sup>22</sup> See EPA Decision Tree for Siting Solar, attached as Exhibit 2, accessed from [http://www.epa.gov/renewableenergyland/docs/solar\\_decision\\_tree.pdf](http://www.epa.gov/renewableenergyland/docs/solar_decision_tree.pdf), on 6/29/15; and Recycling Land For Solar Energy Development, American Planning Association, accessed from [www.planning.org/research/solar](http://www.planning.org/research/solar) on 6/30/15.