

# DRAFT

## Guidance for Siting Solar in Connecticut

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## 1. Siting Solar on Brownfields

*This guidance for siting solar on brownfields is one section of a more comprehensive solar siting guidance that is still under development. Other sections will address best siting practices for landfills, agricultural land, forestland and wetlands, wildlife, and stormwater management. The larger guidance document also will discuss canopy and rooftop solar, interconnections, and resiliency (energy storage).*

### 1.1 Introduction

This section of the Siting Solar Guidance provides general information on the redevelopment of brownfields combined with solar energy generating facilities as either a primary or a secondary land use purpose. The Department of Energy and Environmental Protection (DEEP) encourages adding solar to brownfields. Doing so has many advantages: It preserves open space by identifying blighted properties that can safely and sustainably be developed to host renewable energy projects promotes productive use; and promotes job growth while avoiding the environmental impacts associated with development on greenfields. Redevelopment of brownfields with solar also takes advantage of the existing electrical grid and other infrastructure that is often located at or in proximity to brownfields. As with any development, renewable development should be balanced with the needs of the community in an equitable and responsible manner.

The State of Connecticut defines a brownfield as:

any abandoned or underutilized site where redevelopment, reuse, or expansion has not occurred due to the presence or potential presence of pollution in the buildings, soil, or groundwater that requires investigation or remediation before or in conjunction with the redevelopment, reuse, or expansion of the property (Section 32-760(2) of the Connecticut General Statutes (CGS)).

Brownfield sites exist statewide and range from former factories in urban centers to mills in historic districts. These sites may have been abandoned and underutilized for decades.

On the national level, the Environmental Protection Agency has the [RE-Powering America's Land](#) initiative to encourage renewable energy development on potentially contaminated land. This initiative identifies the energy potential of brownfield sites and useful tools for communities, state and local governments, and developers. The EPA highlights that renewable energy projects on contaminated land have economic benefits such as electricity cost savings, additional land lease revenue to the municipal or private site owner, and increased tax revenues for the land and/or renewable energy systems to the local municipality and/or state.

This guidance covers siting considerations; how to incorporate environmental justice and equity concerns; energy incentives and procurements; and state and federal brownfields programs. It concludes with additional resources.

## 1.2 Solar Siting Considerations on Brownfields

DEEP encourages the use of the best siting practices discussed in this section for solar projects on brownfields.

**Remediation issues.** There are options for remediation when redeveloping a brownfield. Any property that contains pollution (CGS Chapter 446k), including a brownfield, requires remediation in accordance with Connecticut's Remediation Standard Regulations (RSRs), Section 22a-133k-1 through 22a-133k-3 of the Regulations of Connecticut State Agencies. Remediation may be required of past users or owners of the property, current owners, other parties, or a combination of these parties. Siting solar before completing cleanup may cause an issue with cleanup obligations, if done in a manner that interferes with a cleanup need. In addition, siting solar in an area subject to a release of pollution may pose a risk to the health and safety of construction or facility personnel on the site.

**Combined land uses/development.** Solar development on brownfields can occur in combination with other land uses or other development, such as residential, commercial/retail, industrial and/or mixed-use development. (Please see the section of this guidance that discusses solar on rooftops and canopies.) The structure of the rooftop or property should be adequate to support solar equipment. Mixed use development, which is residential or commercial, that is combined with solar may require large footprints for rooftop solar or placing solar on the unused portion of a property. In general, depending on the selected remedial approach, residential use of a property requires a cleanup to the residential standards set forth in the [Remediation Standard](#)

[Regulations \(RSRs\)](#). Given that solar is not considered a residential use, cleanup of property for solar uses could require cleanup to the less stringent industrial/commercial cleanup standards.

***Tenant/lessee and remediation.*** A solar developer may be leasing, rather than owning, a brownfield property. A tenant does not necessarily take on the obligation to clean up contamination that existed prior to the lease unless there is a contractual requirement to remediate. Under certain limited circumstances a tenant may be determined to be “maintaining” pollution, which would require remediation. Any contamination caused by the solar facility would be the responsibility of the solar developer that leases the property. The portion of the property where solar facilities are located should be remediated to the point where there are no direct exposure issues for construction and maintenance workers or anyone else accessing the property. Lessees should not dig or disturb contaminated soil or overlying clean fill, engineered controls, or other measures that prevent exposure to the contaminated soil without prior authorization from DEEP, in accordance with the RSRs.

Solar development on a brownfield is an opportunity to provide a remedial solution that works together with sustainability and revitalization. DEEP's Remediation Division and the Department of Economic and Community Development's (DECD's) Office of Brownfield Remediation and Development (OBRD) offer multiple liability relief programs for cleanup and redevelopment of brownfields in Connecticut. Information regarding these programs is provided below and the full list is available here: [Connecticut Brownfield Remediation Liability Relief Programs](#).

DEEP's [Targeted Brownfield Remedy](#) (TBR) is used to expedite the process for addressing certain contaminated sites. In order to minimize uncertainty with the cost and time it may take to characterize a site, the intent of the TBR approach is to scale the site investigation to support the remedy.

***Financial advantages of solar.*** Solar development may provide a financial incentive for brownfield redevelopment to offset the cost of environmental cleanup. For example, a Connecticut Licensed Environmental Professional may approve an engineered control variance allowing contaminated soil to be left in place underneath concrete ballasts for solar arrays, provided that these measures comply with the RSRs.

***Advantages particular to breweries.*** Breweries are currently a fast-growing business sector, and many are located on former brownfield sites, given the availability of space, infrastructure, and proximity to potential customers. These types of developments can use the opportunity to combine solar with brownfield redevelopment. DEEP's [Sustainable Breweries \(ct.gov\)](#) provides information about pollution prevention, environmental permitting, and [solar at breweries](#).

***Role of municipalities.*** DEEP's [PREPARED Municipal Workbook](#) guides municipalities through the critical tasks required to evaluate the redevelopment potential of a brownfield.

***Environmental permits.*** With respect to environmental permitting, DEEP's [Solar Permitting Factsheet](#) provides guidance on the DEEP permits that may be required for solar projects. If you

have questions about DEEP's environmental permitting requirements, DEEP offers [permit pre-application assistance](#).

Development of renewables on a brownfield provides the advantage of available, nearby infrastructure and reduces urban sprawl. Developing brownfields, as with any site, requires considering the distance to distribution lines, interconnections, and substations. Siting renewables on brownfields can increase resiliency, particularly during natural disasters, by creating microgrids to support communities. Microgrids can operate independently of the power grid using solar power or other alternative energy sources.

For further information on brownfields, please contact DEEP's Brownfields point-of-contact Meena Mortazavi at [meena.mortazavi@ct.gov](mailto:meena.mortazavi@ct.gov).

## 1.3 Additional Considerations

### 1.3.1 Environmental Justice and Equity

Although the generation of energy using solar does not require community engagement under Connecticut's Environmental Justice Law, [Section 22a-20a of the CGS](#), many brownfields are in distressed, low-income, and underserved communities of color ([Map of Environmental Justice Communities](#)). DEEP recommends public engagement with community members prior to redevelopment. Such engagement can include following the considerations listed in DEEP's Environmental Justice and Equity Checklist ([The Checklist](#), see Appendix A), planning and holding a public informational meeting with community and neighborhood leaders, or negotiating a Community Benefit Agreement during the planning phase of a solar project. The Checklist provides best practices for public notice and meaningful public engagement. The Checklist was developed through the [Governor's Council on Climate Change](#) (GC3) by a workgroup consisting of Yale professors, students, community advocates, and DEEP's EJ and Equity GC3 Workgroup.

There are numerous community benefits provided by solar projects on redeveloped brownfields. Renewable energy projects may offset or reduce environmental or public health stressors through the cleanup of contamination, job creation and training, an increase in tax revenue, lower energy costs, technology upgrades to the grid, and sustainability. Since it is critical to avoid the impression of negative impacts to communities disproportionately impacted by pollution burden, developers should consider early coordination with the municipality and community leaders. DEEP recommends seeking out elected officials, including alders, environmental and public health commissions, city council, and neighborhood advocates within the town or city, to identify properties that need attention. Generally, the public may or may not be aware that an undeveloped or abandoned site in their neighborhood has not been utilized due to the potential presence of contamination. Helping the community understand why a site is being improved and what the development will be includes them in the process and increases awareness of renewable energy.

Developers should be familiar with two Connecticut Public Acts that give communities a voice and may require additional information from developers. The first is Public Act 20-6, an Act Concerning Enhancements to the States Environmental Justice Law. This Act, under specified conditions, provides for a Public Participation Plan with notification to municipal residents, city commissions, and Neighborhood Revitalization Zones of potential commercial and industrial interests in their area. Public Act 21-43, An Act Concerning a Just Transition to Climate-Protective Energy Production and Community Investment, requires renewable energy project developers to meet certain requirements if their project begins construction after July 2021, has a total nameplate generating capacity of 2 MW, and meets other criteria which can be found in CGS section 31-53d. Projects should build education, trust, and awareness within the community.

For further guidance, please contact DEEP's Environmental Justice Administrator Edith Pestana at [edith.pestana@ct.gov](mailto:edith.pestana@ct.gov) and go to [DEEP's EJ webpages](#).

### 1.3.2 Energy Incentives and Procurements

There are energy incentive programs available for commercial projects in Connecticut that provide long-term revenue certainty. These programs also provide additional discounts or preferences for projects sited on brownfields to encourage redevelopment of those properties.

DEEP's Non-Residential Renewable Energy Solutions Program (NRRES) fosters the sustained, orderly development of the state's Class I renewable energy industry and encourages the participation by customers in underserved and environmental justice communities, among others. The Electric Distribution Companies run a competitive procurement for on-site low and zero emission renewables like solar and fuel cells, aiming to deploy 60 MWs of these resources in Year 1, and 110 MWs in Years 2-6. Projects are ranked based on the price bid in by the applicant, and the lowest eligible projects are selected first until all MWs are utilized.

For Year 1 of NRRES, with the procurement occurring in early 2022, projects built and wholly located on landfills and/or brownfields received a 20% bid preference for ranking purposes only, meaning the bid price was discounted by twenty percent (20%) in the ranking and selection process. Please go to [Non Residential Renewable Energy Solutions Program \(ct.gov\)](#) for more information.

The Shared Clean Energy Facility Program (SCEF) seeks the deployment of new or incremental Class I renewable generation projects for a 20-year term. Eligible projects are chosen through a competitive bidding procurement process each year. The program capacity was recently increased to 50 MW per year. The first procurement occurred in 2020 and the program is currently authorized to run through 2025. In the first three procurement years, projects sited on a brownfield, as defined by DEEP, received a 20% qualitative bid preference for ranking purposes only. The use of the term "brownfield" for the purposes of SCEF has a more specific definition so that the bidder can demonstrate that the site is a brownfield. Please go to [Shared Clean Energy Facilities \(ct.gov\)](#) for more information.

There are also a range of financial incentives and assistance for energy efficient and renewable energy products and energy efficiency improvements in the form of rebates, tax credits, or financing programs available from the federal government.

- [Energy Saver Financial Incentives](#)
- [Supporting Brownfields Redevelopment using Tax Incentives and Credits](#)

### 1.3.3 State and Federal Brownfield Programs

**DECD Programs.** The Connecticut Department of Economic and Community Development's Office of Brownfield Remediation and Development (OBRD) was set up as a one-stop resource for brownfield redevelopment. Developers and municipalities can explore the liability relief programs, funding opportunities, and the variety of programs available for brownfield redevelopment. More information can be found at [www.ctbrownfields.gov](http://www.ctbrownfields.gov). OBRD works in close collaboration with DEEP's Remediation Division and Brownfield Program. OBRD offers funding opportunities through competitive processes under various grant and loan programs. These programs can potentially be accessed by solar developers.

Other program offerings include:

[Municipal Grant Program](#) (CGS section 32-763) - Municipalities, municipal economic development agencies and Connecticut Brownfield Land Banks can use these grants for costs associated with the investigation, assessment, remediation, and development of a brownfield.

[Targeted Brownfield Loan Program](#) (CGS section 32-765) - Potential brownfield purchasers and current brownfield owners, including municipalities and economic development agencies, can use these loans for the costs of investigation, assessment, remediation, and development of a brownfield. Current owners are not eligible if they are liable for or are otherwise directly or indirectly responsible for existing environmental contamination.

[Brownfield Area-wide Revitalization Planning Grant Program](#) (CGS section 32-763(g)) - Municipalities, Connecticut brownfield land banks, economic development agencies and Regional Councils of Government can use these grants to develop a comprehensive implementation plan for the remediation and redevelopment of neighborhoods, districts, corridors, downtowns, waterfront zones, or other areas burdened with multiple brownfields.

**DEEP Programs.** DEEP's [Brownfields in Connecticut](#) webpage includes information on the Remediation Standard Regulations, the Voluntary Remediation Program, Property Transfer Program, and the State's brownfield liability relief programs, and includes DEEP's brownfields inventory.

DECD and DEEP jointly administer the [Abandoned Brownfield Cleanup Program](#) and the [Brownfield Remediation and Revitalization Program](#).

DEEP administers the [Municipal Brownfield Liability Relief Program](#).

DEEP Remediation tools that pertain to brownfields include the [Targeted Brownfield Remedy, Covenants Not to Sue](#) , and [Third Party Liability Relief](#).

**US EPA Funding and Programs.** US Environmental Protection Agency (US EPA) provides various types of grant funding for brownfields site assessment, site remediation, revolving loans, environmental job training, technical assistance, and research. More information can be found at <https://www.epa.gov/brownfields/types-epa-brownfield-grant-funding>.

US EPA has also announced the availability of up to \$50 million in grant funding to establish the [Environmental Justice Thriving Communities Technical Assistance Centers \(EJ TCTAC\) program](#). EPA is partnering with the Department of Energy (DOE) to provide funding for five to ten centers across the nation supporting underserved communities, including rural and remote communities.

## 1.4 Resources

### 1.4.1 Matchmaking Resources

This section serves to connect developers with resources to find an appropriate project site. A rule of thumb for siting is that generation of 1 MW requires about 5 acres of space.

**DEEP's Brownfields Inventory.** DEEP's Brownfields Inventory lists over 800 sites, organized by Town, with site name, street address, size in acres, municipal Tax Assessor Parcel ID number, and data source from which the listing was obtained. The parcels on the Brownfields Inventory range from less than 1 acre to 449 acres. Approximately 143 sites included on the Inventory are over 5 acres.

DEEP's Brownfields Inventory includes sites that have been involved in brownfields liability relief programs operated by DECD and DEEP and brownfield grant and loan programs operated by DECD and the US EPA. The Inventory does not include every site in Connecticut which meets the statutory definition of a brownfield (CGS section 32-760). The Inventory is compiled from the following sources:

1. Sites that have received grants or loans for brownfield assessment and/ or remediation through the Department of Economic and Community Development's [Office of Brownfield Remediation & Redevelopment](#) (OBRD). Access the data base from the State's [Open Data link](#);
2. Sites that have received grants or loans for brownfield assessment and/or remediation through the US EPA's brownfields grant and revolving loan fund programs. A list of these sites is also available at [EPA's Cleanups in my Community](#) website by filtering for sites located in Connecticut; and
3. Sites that have been accepted into one of the liability relief programs administered by DECD or DEEP, including the [Abandoned Brownfields Cleanup Program](#), the [Brownfield Remediation and Revitalization Program](#), and the [Municipal Brownfield Liability Relief Program](#).

The [DEEP's Brownfields Site Inventory](#) was updated in June 2022.

**List of Contaminated or Potentially Contaminated Sites in Connecticut.** Brownfields may be found on the [List of Contaminated or Potentially Contaminated Sites in Connecticut](#), comprised of "Hazardous Waste Facilities," as defined in CGS section 22a-134f. Many sites on this list are in active use and are not abandoned or significantly underutilized and therefore do not meet the statutory definition of a brownfield.

**Old Mill Reuse and Preservation.** Former mills are common in Connecticut and may be available for solar redevelopment. [Preservation Connecticut](#) is a resource for information about old mills and their historical use. The developer must work with State Historic Preservation Office on historical buildings older than 50 years.

### 1.4.2 Additional Resources

[www.ctbrownfields.gov](http://www.ctbrownfields.gov) (DECD)

<https://portal.ct.gov/DEEP/Remediation--Site-Clean-Up/Brownfields/Brownfields-in-Connecticut> (DEEP)

<https://portal.ct.gov/DEEP/Remediation--Site-Clean-Up/Clean-Energy-on-Brownfields/Siting-Clean-Energy-on-Brownfields> (DEEP)

Brownfields inventory link: <https://portal.ct.gov/DEEP/Remediation--Site-Clean-Up/Brownfields/Brownfields-Site-Inventory>

[REopt Lite – online web tool developed by NREL that can be used to evaluate the economic viability of DERs.](#)

[RE-Powering America's Land](#) is an EPA initiative that encourages renewable energy development on current and formerly contaminated lands, landfills, and mine sites when such development is aligned with the community's vision for the site. This website includes EPA's RE-Powering Mapper, an interactive web application, which allows users to identify contaminated lands, landfills, and mine sites for renewable energy development. The Mapper is available at [RE-Powering Mapper 3.0 \(epa.gov\)](#).

STEPS recommended Public Participation guidance (dated January 2021) [https://portal.ct.gov/-/media/DEEP/climatechange/GC3/GC3-working-group-reports/GC3\\_Equity\\_EJ\\_Final\\_Report\\_111320.pdf](https://portal.ct.gov/-/media/DEEP/climatechange/GC3/GC3-working-group-reports/GC3_Equity_EJ_Final_Report_111320.pdf) This report discusses affirmative recommendations include ensuring that low and moderate income communities have access to solar and clean energy, more broadly, starting with access to solar for renters in multifamily homes. The report suggests that these lands be considered for solar arrays as an alternative to open space.



**Appendix A**

**Connecticut Department of Energy and Environmental Protection  
Environmental Justice and Equity Checklist**

Draft Guidance