

Confidently Develop Solar on Brownfields

Alternatives to greenfield development include underutilized sites such as **Brownfields** that represent an untapped opportunity for **sustainable energy development** near existing energy infrastructure, and allows communities to improve their tax base, protect open space, and use previously disturbed land for the **community's benefit**.

Brownfields include abandoned industrial facilities, landfills, and reclaimed mine sites. It is critical to have an **experienced** team of developers, consultants, and attorneys with an understanding of managing **liability exposure**, identifying potential **site constraints** and methods to **mitigate** those constraints, and evaluating **financial incentives**.



Photo Credit CS Energy

BENEFITS

The US Energy Information Administration (EIA) estimates that utility-scale solar will be the second largest source of renewable energy in the US in 2024. In addition to clean energy, these projects provide:

- increased local tax revenues
- jobs during construction and operation of the facility
- a responsible form of industrial development and clean energy that benefits the community
- the USEPA website references a study that Brownfield redevelopment can increase nearby home property values by 5-15% within approximately one mile of the site¹
- Brownfield sites are more likely to have existing transmission and energy infrastructure at or nearby the site, potentially lowering interconnection costs compared to greenfield sites

¹Haninger, K., L. Ma, and C. Timmins. 2017. *The Value of Brownfield Remediation*. *Journal of the Association of Environmental and Resource Economists* 4(1): 197-241.



FINANCIAL INCENTIVES

Significant policy development at the federal, state, and local levels have created significant financial incentives for development on underutilized sites that can make them more attractive than greenfield sites.

Inflation Reduction Act (2022)

- Revised the investment tax credit (ITC) to 30% and extended it until 2025; starting in 2025 the ITC will be replaced with the Clean energy ITC that can be phased out as the US meets greenhouse gas emission reduction targets
- Credits are "stackable"
- Projects located in an Energy Community can receive an additional 10% ITC, bringing the total ITC to 40%
 - Energy communities include:
 - ✓ a Brownfield site (as defined by CERCLA)
 - ✓ a census tract or any adjoining tract in which a coal mine closed after December 31, 1999, or a coal-fired electric power plant that was retired after December 31, 2009
 - ✓ an area which has significant employment related to the extraction, processing, transport, or storage of coal, oil, or natural gas
- Projects meeting domestic content minimums can receive an additional 10% ITC, bringing the total to 50%
- Projects sited in Low-Income Communities or on Indian Land can receive an additional 10% ITC, bringing the total to 60%

Landfill/Brownfield Renewable Energy Incentives – state by state policies that include financial incentives, procurement policies, and streamlined permitting and environmental reviews

Community Solar Legislation – in place in many states with other states pending

DEVELOPMENT CONSIDERATIONS

Evaluate Environmental Risk

Legal liabilities can be a hurdle to development on a Brownfield. However, proper due diligence and legal strategy can reduce or eliminate these hurdles. It is extremely important that the development team includes an experienced environmental consultant and attorney to address these constraints.

Additional Permitting

Brownfield sites may require additional permits to receive approval for construction. Determine the permits that will be needed along with the timeframe to obtain those permits and factor them into the development schedule. Many communities are eager to redevelop Brownfields so expedited permitting is sometimes available.

Site Assessment and Remediation

Ideally, site assessment and remedial activities will have already been performed and a No Further Action Letter (NFA) or similar document has been issued for the site. If not, it doesn't mean the project can't be developed, but the remedial schedule could delay development. Institutional controls, sometimes called Environmental Use Restrictions (EURs), are used to meet remedial standards, and understanding those restrictions and how they might affect the development of the facility is critical.

Design Considerations

Brownfields will require a design approach that is unique to the characteristics and constraints for each site. Example design considerations may include:

- Determine potential settlement issues (especially important for landfills and reclaimed mine sites)
- Use of ballasted racking systems to eliminate penetration and excavation of the soil that may be acting as a remedial cap
- Use of alternative rack and equipment foundations where underground obstacles such as boulders and abandoned foundations may be present
- Identification of site constraints such as monitoring wells, gas vents, extraction wells, and existing utilities to avoid, move, or remove (with agency approval)
- Consideration of use of native grasses and/or pollinator species to enhance ecological habitat

Alternative Construction Techniques

Alternative construction techniques may be necessary to maintain the remedy at the site including institutional and engineering controls. Examples of alternative construction techniques include:

- Use of tracked vehicles to reduce soil cap disturbance
- Use of aboveground or on-ground cable management systems to eliminate trenching
- Use of adjustable racking systems to accommodate potential minor, long-term, settlement



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