

VOLUME 13 | ISSUE 6

North American **CleanEnergy**

2020 WIND BUYERS GUIDE

Pg. 35

Battling Wildfires

Microgrids offer a new approach to fire suppression Pg. 8

Great Expectations

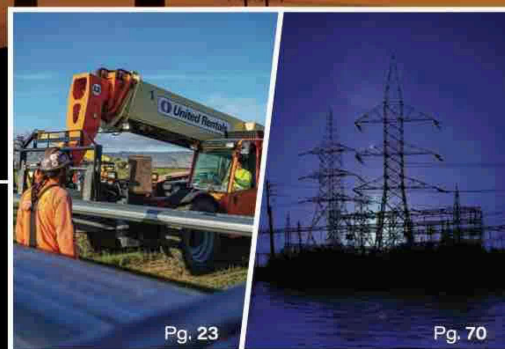
Underperformance in U.S. solar market Pg. 16

Fountain of Youth

Secrets of active 24-year-old lead-acid batteries Pg. 60

Plus Show-in-Print Features:

- Solar and Energy Storage Midwest Pg. 33
- Solar and Energy Storage New York Pg. 34
- Energy Storage North America Pg. 68



Pg. 23

Pg. 70

www.nacleanenergy.com



How to Develop a Successful Solar Project Permitting Framework

by Rick Haglund

LAND IS YOUR MOST IMPORTANT ASSET IN A RENEWABLE

project. It doesn't matter how much the sun shines - if you don't have land, you don't have a project. Likewise, if you can't secure permitting, your project will fail.

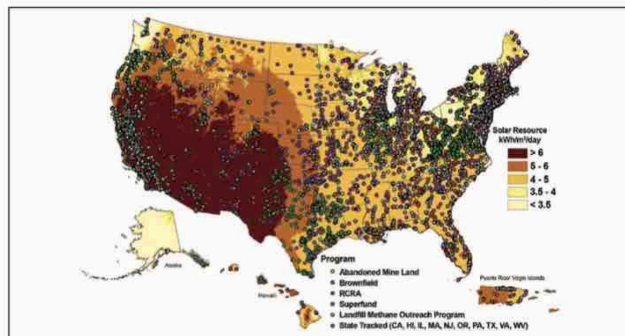
Most solar power plants today are located on privately held land. A recently introduced bipartisan bill, the Public Land Renewable Energy Development Act (PLREDA) of 2019, aims to promote the development of wind, solar, and geothermal energy, on public lands.

Solar energy is a critical component of a comprehensive climate action plan. Solar projects are subject to a vast number of approvals from governmental agencies. Permitting requirements can significantly impact the cost and development time of a project. Understanding the entities that may be involved in the permitting process, and determining the renewable energy commitments made by local governments, will be of tremendous importance in the due diligence phase of any project.

Permits for power plants on federal land fall under the jurisdiction of the U.S. Bureau of Land Management (BLM). The BLM (in collaboration with the U.S. Fish and Wildlife Service, and other state and local agencies) is authorized to issue permits for the development of solar energy projects. Environmental review of a proposed power plant on public land may take three to five years, unless the plant is located on previously distributed land.

Federal, state, and local regulators must follow strict review processes and guidelines. Developers must provide detailed project construction plans, environmental studies, and proposals to ensure that environmental impact is minimized.

Designing a strategic framework can help developers identify how to navigate the process, what may be involved in granting permits, and learn how to address potential obstacles. The following tactics can help ensure successful solar permitting:



1. Identify and cultivate dialogues with stakeholders. Engage thought leaders and champions of renewable energy projects within the public and private sectors. Collaborate with influential stakeholders such as labor unions, who recognize the economic impact of the project.

Interact with potential opponents. Understanding their issues and concerns can be of value in formulating your proposed mitigation strategies. This will also prepare you to answer difficult questions during town hall meetings or press interviews.

2. Assemble an experienced project permitting team. Experienced environmental and engineering consultants are essential. Land use and environmental legal issues such as agricultural land conversion, irrigation district, or public utilities commission approvals, require specialized legal knowledge. An experienced team will ensure that your permitting strategy effectively addresses the concerns of the permitting authority.
3. Prepare an action plan for obtaining permits. Permits from federal, state, and local government agencies may be needed. Each agency may have unique processes, goals, and time frames. Develop a matrix that illustrates the requirements and procedures for each entity. This will ensure that permitting is granted within the critical development phase of the project.

If the project involves federal grants, loan guarantees, or permits, the National Environmental Policy Act (NEPA) may apply. Many states also have their own environmental review requirements. If authorizations are needed for protected species or jurisdictional waters impacts, other agencies may be involved. Identifying and sequencing relevant permitting channels is essential to meeting project deadlines.

The Solar Energy Industries Association (SEIA) www.seia.org is an excellent resource for solar market intelligence.

4. Cultivate relationships with governmental agencies. Developing a positive relationship with governmental agencies is invaluable during the permitting process; this includes submitting excellent biological studies, being responsive to agency concerns, demonstrating an understanding of agency processes, and presenting your plan for compliance.
- Take advantage of opportunities to work directly with agencies to assist in preparing underlying studies, or commenting on drafts of environmental documents. These agencies often have limited resources - supporting them not only creates goodwill, but it allows you to address difficult issues proactively.
5. Anticipate mitigation and prepare a realistic mitigation strategy. A large solar project may generate many mitigation conditions to reduce or compensate for its potential impacts. This can impede development and increase costs. Delays and cost overruns can be minimized when a project developer formulates proposed avoidance and minimization measures, along with a compensatory mitigation package. Create financial models that consider costs such as property endowments and monitoring expenses. This plan will likely evolve, so be prepared for modifications as permitting proceeds.
6. Environmental studies must be thorough and accurate. Regulatory agencies and other stakeholders require comprehensive and accurate environmental studies. Proper sequencing of studies is important to ensure timely permitting. Rigorous environmental studies will also help the developer understand and assess the financial impact of this critical phase.
7. Wetlands and endangered species often impact solar project development. If they are dredged or filled during site construction, wetlands - such as swamps and bogs - are subject to government oversight. Federal Clean Water Act

authorization may be required from the U.S. Army Corps of Engineers, which can trigger a series of related federal and state agency approvals.

Endangered species issues often determine where and how major solar projects go forward. The Endangered Species Act has a strong set of public policies protecting these species. It is critical to determine whether such issues exist, to develop a strategy for addressing them.

8. Consider the impact on the construction. Many permitting issues impact construction. If possible, have the contractor review the permit conditions so that unintended consequences can be avoided. Mitigating potential issues that affect construction may be critical to meeting schedules and avoiding cost overruns.
9. Oversee permitting and legal developments. Federal and state renewable energy initiatives have resulted in many new policies. Solar projects raise environmental concerns that can require more complicated permitting. It is advisable to monitor changes that can impact permitting - investigating the permitting successes or challenges of similar projects can help identify potential problems.
10. Be prepared and be flexible. During the permitting process, project design or technology changes will undoubtedly occur. During environmental surveys, for example, anticipate that there could be geographically larger, more intensive, or alternative environmental impact scenarios - your analyses will more likely remain valid when such changes occur.

Solar project permitting is complex, and subject to unexpected challenges. Preparation and foresight go a long way towards avoiding unpleasant and costly surprises. Designing and following a strategic matrix will minimize delays, and help you achieve your financial and scheduling goals.



Rick Haglund is Director of Business Development at TerraPro Solutions. He has provided asset due diligence for over 100 utility solar and

wind projects, and multiple large-scale transmission projects throughout the United States. His expertise includes overseeing the operations of ALTA surveys, civil, environmental, aerial mapping/LIDAR, as well as due diligence surveillance, permitting, and fatal flaw analysis.

TerraPro Solutions
/// terraprosolutions.com



Solar panel for every metal roof

Sunflare's LiteMount is a lightweight module that seamlessly integrates with every existing metal roof attachment system. A lightweight solar system, LiteMount is less than 1lb per square foot installed and withstands winds of 125mph. LiteMount is a shatterproof, glassless mounted panel and mechanically attaches with universal clamps in 3 quick steps, so it's easy to install. Combat shading with bypass diodes at every cell. LiteMount comes with a 25-year warranty for product workmanship and power production and is UL, IEC certified.

Sunflare /// www.sunflaresolar.com

LAYERS OF PROTECTION

Low Profile QuickBOLT with Microflashing®

MANUFACTURERS' APPROVED SEALANT
We recommend that sealant is inserted into the predrilled hole to fill the penetration and ensure that the Microflashing® adheres completely to the roof

MICROFLASHING®
Our innovative Microflashing® is placed over the predrilled hole with sealant to flash the penetration

QUICKBOLT COLLAR
The collar of the QuickBOLT compresses the Microflashing® to create a leak-proof seal

L-FOOT
The L-Foot is placed over Collar and tightened down with a Nut to sit flush, further ensuring that no water will even come close to the penetration

OVER 800,000 QUICKBOLTS INSTALLED

0 LEAKS

SOLAR POWER MIDWEST
BOOTH 26
CHICAGO • 11/14-11/15

SOLAR POWER NEW YORK
BOOTH 21
ALBANY • 12/12-12/13

QUICKBOLT.COM
(844) 671-6045 • MON-FRI: 7AM-5PM PST