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# The Future of U.S. Renewable Energy Development: Local Obstacles and Opportunities

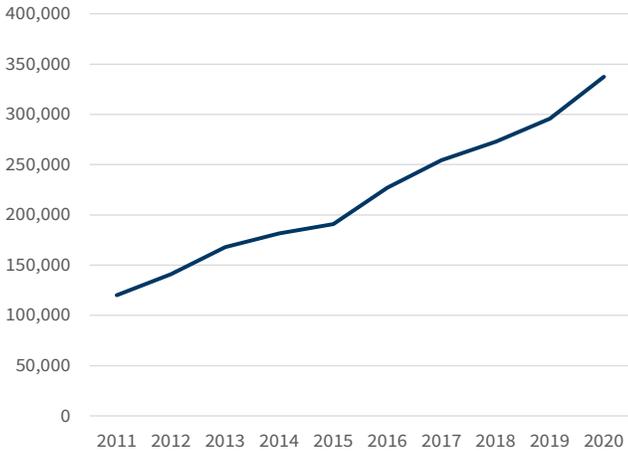
Over the past decade, the prevalence of renewable energy – particularly wind and solar – has expanded in dramatic fashion, and current net-zero goals set by governments and individual corporations have primed the clean energy landscape for even more growth. But this upward trajectory is far from assured. Disputes over land use, environmental impacts, and regulatory hurdles are all potential obstacles to meeting ambitious renewable energy targets. With the right approach, the renewable energy industry can more effectively navigate community opposition while also better positioning the United States to meet its climate goals.

## U.S. Renewables: All Signs Point Upward

U.S. wind capacity is forecast<sup>1</sup> to increase by 291 gigawatts (GW) between 2020 and 2050 — enough to power over 58 million homes — while solar photovoltaic deployment is expected<sup>2</sup> to reach 324 GW of new installations over just the next decade. Some of this growth is due to aggressive clean-energy mandates at the state level, in addition to federal incentives and supportive policies. The private sector is also driving demand. In 2020, global corporate clean energy purchasing jumped 18 percent<sup>3</sup>. Falling prices for wind and solar have made these once-niche resources competitive with conventional power plants, and the long-term fixed price of power purchase agreements<sup>4</sup> (PPAs) are attractive hedges against rising grid rates.

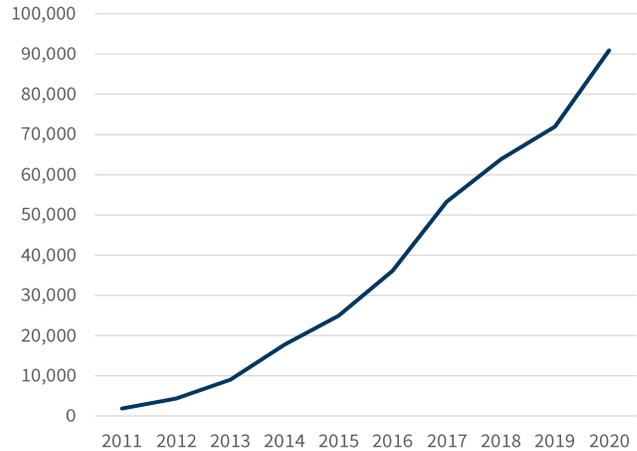


**Figure 1 - U.S. Annual Net Generation: Wind**  
(thousand megawatt hours)



Source: U.S. Energy Information Administration

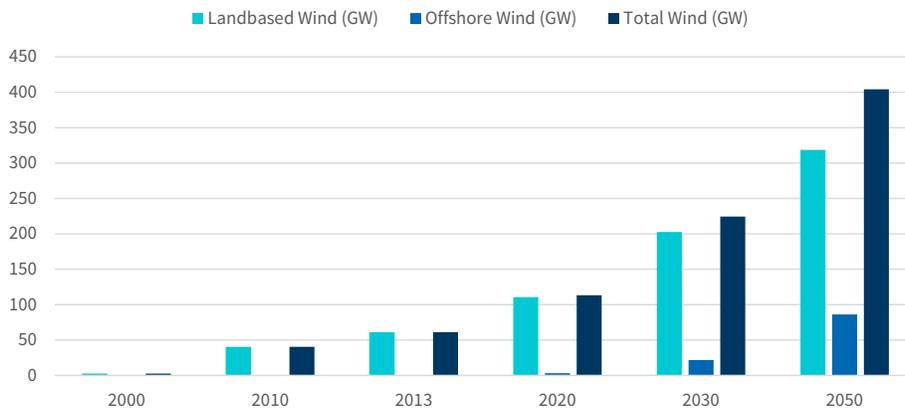
**Figure 2 - U.S. Annual Net Generation: Solar**  
(thousand megawatt hours)



Source: U.S. Energy Information Administration

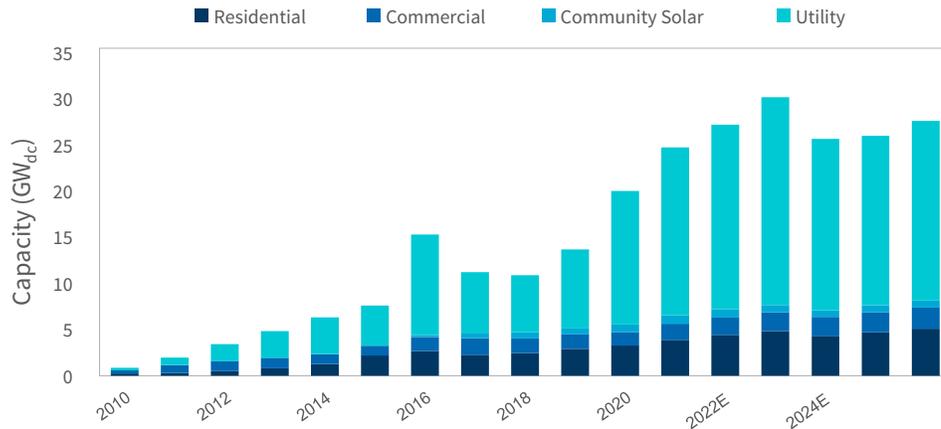
The Biden administration’s ambitious climate goals are slated to increase the share of renewable power in the U.S. energy system. The \$1 trillion infrastructure bill recently passed by the Senate includes \$65 billion in renewable energy transmission upgrades. In keeping with President Biden’s whole-of-government approach to addressing climate change, the FY22 presidential budget request includes<sup>5</sup> \$2 billion for clean energy projects and \$10 billion for clean energy research and development. Meanwhile, some in Congress hope to enact lucrative tax-credit extensions for wind and solar through reconciliation<sup>6</sup>.

**Figure 3 - Projected Growth of the U.S. Wind Industry, 2000-2050**



Source: U.S. Department of Energy Wind Vision Report

Figure 4 - Projected Growth of U.S. Solar Industry, 2010-2025



Source: Solar Energy Industries Association & Wood Mackenzie

### Local Obstacles to Renewable Energy Development and Expansion

While polling consistently shows strong public support for renewable energy, over 75 percent<sup>7</sup> of Americans are unwilling to live within one mile of a wind or solar site. Moreover, the energy landscape in states that historically have not been amenable to renewables can present even stickier situations for developers to navigate. For example, residents of Culpeper County, Va., expressed opposition<sup>8</sup> to three utility-scale solar developments proposed in the area in 2018. The group argued that large solar projects destroy farmland and woodlands and would send property values plummeting due to aesthetic concerns.<sup>9</sup> The group was successful. Earlier this year, the Culpeper County Board of Supervisors voted unanimously to reject<sup>10</sup> a 150 megawatt (MW) solar project. The county is also considering an updated local ordinance for utility-scale solar projects, and many of the components align with the recommendations from the local residents. Because they were so effective in blocking solar development, the group developed resources for concerned citizens across the country, including a toolkit<sup>11</sup> to push back on development and even recommendations for new local ordinances<sup>12</sup> to restrict development.

The situation in Culpeper County is being replicated in some form in communities across the country. As rosy as the outlook may be for renewable energy at a high level, industry and policymakers should recognize and

actively mitigate the local risks that could undermine new investment — and with it the success of renewable energy policy.

Pro-renewable energy policies have passed several state legislatures over the past few years, but local opposition threatens developers’ ability to advance their projects. Of course, the industry has faced at least some form of pushback since its inception. Many residents do not want wind turbines or transmission lines blocking their views or fields of solar panels encroaching on their land. However, the opposition today is increasingly supported by a media landscape that readily amplifies these issues as national news, given the potential conflict with state and federal climate policies.

As one national newspaper reported<sup>13</sup> recently:

*“Unlike past fights between polluting industries and environmentalists, this one pits people who say they want more renewable power against companies that want to generate it. It threatens to significantly slow efforts by the Biden administration and businesses to fight climate change by reducing America’s carbon emissions.” (emphasis added)*

Columbia Law School’s Sabin Center for Climate Change Law has observed<sup>14</sup> that over 160 new wind, solar, and other renewable facilities have been contested in 48 states. Even further, 31 states have enacted more than 100 policies blocking or limiting these projects.

A key feature of this opposition is grassroots backlash – not against renewable energy per se, but rather the land use required to build wind or solar farms. Despite the abundance of available land across the United States, the magnitude of land needed to be fully carbon free by 2050 – on top of the rough waters of public perception – don’t make for smooth sailing as the nation works to decarbonize. It is estimated<sup>15</sup> that we will need to develop four times the size of South Dakota in order to reach the president’s 2050 climate target. The new renewable energy added will also require significant transmission upgrades to carry the new power to people and businesses.

Local land disputes used to stay local, but the national media has now taken a greater interest. The *New York Times* explained how the renewable energy industry is “facing resistance in rural areas where conspicuous panels are affecting vistas and squeezing small farmers.”<sup>16</sup> And a recent *Wall Street Journal* headline declared: “Clean Energy Faces the Same Problem as Fossil Fuels: Community Protests.”<sup>17</sup>

Additionally, concerns about endangered species typically garner a lot of attention, such as when the *New York Times* reported on a Lewiston, N.Y., landowner who opted<sup>18</sup> to install a field of solar panels on 18 acres of his property in 2019. Among opponents’ concerns was the potential endangerment of short-eared owls, as the development threatened their ability to hunt field mice.

Land use should also be understood through a financial lens. Just like residents who do not own mineral rights but must live near oil or gas drilling, landowners whose property is adjacent to wind or solar farms may not directly benefit from lease revenue or other payments. Even so, their lives and sometimes their livelihoods can be impacted. As Samantha Goss from the Brookings Institution has observed<sup>19</sup>:

*“Even though people like wind and solar power in the abstract, some object to large projects near their homes, especially if they don’t financially benefit from the project. Transmission for renewable power can also be unpopular, and even more difficult to site when the power is just passing through an area, rather than directly benefiting local residents. This is an issue today building transmission to move wind power from the Great Plains and Upper Midwest states to cities in the east.”*

## The Path Forward

Successfully developing renewable energy projects is not just about “overcoming” community opposition. Rather, it should be a deliberate and intentional process that incorporates the benefits of renewable energy into the local community, which includes understanding local concerns and adjusting even the most progressively developed plans to ensure harmony. Doing so requires a multi-phase approach:

- 1. Early Investment:** Approach permitting and land use decisions with an investor’s mindset. Time and money invested up-front may save much more time and money down the line. While it is appealing to finalize site control, layout and interconnection as soon as possible in the development process, approaching early-stage development with as much flexibility as possible can save your project from unanticipated headaches down the road. Early environmental work can anticipate unforeseen issues, influencing layouts, pre-determining efficient mitigation strategies and demonstrating to a community that the developer is aligned with their interests.
- 2. Community Advisory Panels:** Local engagement is critical, especially in a project’s infancy. Community advisory panels are an opportunity to solicit guidance and feedback from local leaders, which can shape key elements of the development plan. When building out membership, it is important that developers bring in a range of perspectives, including voices who may be likely to oppose or express concerns with the project. This helps ensure local concerns are addressed in the planning phase, which is better for the community as well as the developer, as project changes later in the process can increase costs substantially.
- 3. Transparency and Stakeholder Collaboration:** Even the best-laid plans with significant input from local community members can run into opposition. As a result, local outreach should be an ongoing process in which residents feel their concerns are being heard and changes are being incorporated when appropriate. Responding to local opposition should not be simply trying to neutralize it. Open houses and other public meetings are a way to demonstrate transparency, and they’re also opportunities for developers to learn about

concerns that may not have been known during the initial phases of a project. For many residents, the real impacts are hard to understand until dirt is moved and trucks show up; being responsive to those changing views will enhance credibility while also giving the community a greater stake in the final project.

- 4. Rapid Response:** Most residents concerned with a project have valid reasons for their concerns. But many individuals will operate based on bad information. Facebook community groups and other organizations are easy to find online, and like any online forum they can become repositories of false claims about a developer or renewable energy projects in general. Developers must prepare for this by developing easy-to-access collaterals that counter common myths (i.e. infographics, fact sheets) and actively monitoring social media to engage interested parties and track the tone of the conversation.
- 5. Transparent Narratives:** Understand your stakeholders' perspective and ensure your communications clearly and honestly address their concerns. This not only includes taking credit for proactive adjustments decisions upfront, but also including reasons why certain steps were not taken. For example, if an initial plan identified several potential sites for a project and the company discovered one of those sites had rare ecological value or historical significance, the developer should openly discuss why it chose an alternative site. Outlining the company's planning process in a transparent manner can make allies out of those who would otherwise remain skeptical or distrustful of development.

### Navigating This Challenging Terrain

FTI Consulting helps firms navigate these challenges with a tailored and holistic approach. Our public affairs offering combines traditional communications support paired with digital insights, polling and research, and government affairs. These services are integrated with our offerings in economics and corporate finance, which help companies identify new markets, evaluate opportunities to develop projects, sell power, maximize revenues and hedge risks.

As policymakers consider new goals for clean energy deployment, they must recognize the barriers and work to minimize them, while developers must be proactive in navigating an operating environment that will likely become more hostile in the years ahead.

## Endnotes

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2. <https://www.seia.org/solar-industry-research-data>
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