

Locals worry wind and solar will gobble up forests and farms

May 4 2021, by Alex Brown, Stateline.org



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Massachusetts has installed solar panels faster than almost any other state as it seeks to reduce its carbon emissions. But some activists say the state's transition to renewable energy has come at a cost.

"We have big multinational solar companies coming and cutting down forests," said Jane Winn, executive director of the Berkshire Environmental Action Team, a nonprofit in the state. "They're not doing a good job of it, so they're allowing erosion into wetlands. We're trying to connect our forests so wildlife can move, and they're in there fragmenting it."

Similar conflicts are cropping up across the country, as the fast-growing wind and solar industries expand into new areas, driven in some cases by state mandates and incentives. In many places, locals are pushing back, saying that forests and farmlands should not be sacrificed in the fight against [climate change](#).

Local activists say they support clean energy, but they want state regulators to be more thoughtful about where to allow development. The activists would like to see more [solar projects](#) on rooftops and previously developed sites such as parking lots and landfills.

But some industry leaders say large, ground-mounted projects are much more cost-effective, and the only realistic way for states to transition away from fossil fuels. They say "not in my backyard" attitudes threaten to stall important climate work.

Some state regulators have begun rethinking their wind and solar strategies to push projects away from undeveloped areas. But they acknowledge more conflicts are inevitable as the industry grows, and many states still lack a clear picture of the land use that will be required to meet their renewable energy goals.

In Massachusetts, 150,000 acres could be lost to renewable energy development as the state seeks to meet its climate targets, according to a 2020 report from Mass Audubon, a conservation nonprofit. Between 2012 and 2017, the group found that solar projects accounted for a

quarter of the natural lands that were converted to development. In response to those concerns, Massachusetts leaders are seeking to reduce state incentives for building solar projects on ecologically sensitive lands.

"We have evolved to try to target areas that have the most benefits from an environmental land use perspective and also from a clean energy perspective," said Patrick Woodcock, commissioner of the Massachusetts Department of Energy Resources. "We want to promote solar that doesn't impair ecosystems and require tree-clearing. We're starting to see that our land use is also part of [carbon] sequestration, and a vibrant forest ecosystem is a big component of that."

Local advocates and state leaders are hoping to see more solar development on rooftops, parking lots and landfills, which they contend also will benefit local solar installers instead of large corporations.

But some in the solar industry say the state's approach is misguided, and its efforts to protect forests could hinder its renewable energy ambitions.

"Over the next few years in Massachusetts, the amount of solar installed in the state is going to drop off a cliff," said Ilan Gutherz, vice president of policy and strategy with Borrego Solar Systems, which develops and maintains solar projects in 26 states including Massachusetts. "There's almost no remaining land area in the state where we could reasonably site projects."

Similarly, wind farms nationwide have long drawn some opposition for killing birds and bats and altering landscape views. As more projects spring up, regulators say it will be increasingly difficult to analyze and mitigate their collective impact on endangered species.

The growth in renewable energy projects also will require massive

amounts of copper and other resources, even as environmental groups oppose mining proposals throughout the country.

In Hawaii, some renewable energy proposals have drawn criticism and protests from locals who feel the projects will disrupt fragile ecosystems or damage sites that are culturally important to Native Hawaiians.

According to Lance Collins, a lawyer who has fought several proposals on behalf of community groups, many renewable energy projects in Hawaii don't comply with the state's environmental protection laws.

"Unfortunately, because of the need for renewable energy, state agencies feel like they need to do whatever these companies want, because they have the money and they can make it happen," he said. "It seems pretty clear that there's a strong preference for approving these projects as quickly as possible, and that seems to override other things that are supposed to be considered."

State officials say they have not bent the rules to accommodate clean energy projects, but they acknowledge that the state's goal of reaching 100% renewable energy by 2045 will raise difficult questions.

"If we want to go to 100% renewable energy, what does that look like on the ground?" said David Smith, forestry and wildlife administrator with the Hawaii Department of Land and Natural Resources. "How many acres of [solar panels](#), how many wind turbines? It becomes very challenging."

Smith's agency has begun working with the Hawaii State Energy Office to address those concerns. Regulators are seeking a broad perspective on how the drive toward renewable energy will affect habitats and endangered species, rather than analyzing the impact project-by-project.

"We don't have the big picture right now of what an at-scale rollout would look like," Smith said. "We don't want to get nicked and dined to death and then find we can't get the permits out anymore before we get to 100% renewable."

Meanwhile, Hawaiian Electric, the state's largest electricity company, worries that protest movements could stall Hawaii's efforts to build more wind and solar projects. Opponents have used demonstrations and litigation to try to block development proposals in the state. A detailed Honolulu Civil Beat story laid out the company's and several state lawmakers' concerns that the conflicts could derail the state's climate goals.

"Developers often face community opposition when proposing a project, and we've learned over the years that community outreach early and often is critical," Shannon Tangonan, Hawaiian Electric's corporate communications manager, said in an email to Stateline.

"But when developers are transparent and willing to engage with community members, it often produces mutually beneficial adjustments to the project and other positive results."

Tanganon noted that the company now has specific community outreach requirements for project proposals.

Leaders in Maryland recently convened a task force to look at renewable energy siting issues, in response to concerns that solar projects were rapidly supplanting the state's prime farmland.

"Increasingly, states that are embracing renewable energy run into opposition, and two of the biggest reasons are prime farmland being lost and also ecological areas," said Maryland Secretary of the Environment Ben Grumbles. "We need to put a much greater focus on trying to steer

these important projects to locations that are going to be more acceptable. The conflicts are growing and the need for innovative solutions is growing too."

According to Grumbles, the state is increasing coordination between its regulatory agencies to examine possible issues earlier in the permitting process. It also wants to create incentives for renewable energy projects on developed land and encourage projects that allow the land to be used for other purposes, such as solar farms that are compatible with cattle grazing. Maryland officials are looking at buildings owned by the state government to assess the potential for rooftop solar canopies.

Still, some industry leaders say large-scale projects—not just rooftops—will be necessary to meet clean energy goals. They say renewable projects are claiming comparatively small amounts of land compared with other forms of development, and that tackling the climate crisis outweighs some local land-use concerns.

"Carpeting a state is not anyone's goal and it's not going to happen, but every state has suitable land," said Edwin Moses, managing director of product development with Origis Energy, a solar company with projects across the country.

"Despite the emotions of trees vs. solar, the math is that displacing coal and natural gas is [more important]. Balancing the acres lost in trees vs. the acres lost from rising sea levels, the math is just overwhelming."

In 2019, Maryland officials blocked an Origis solar project that would have razed more than 200 acres of trees in Charles County. The company said it could not comment on specific proposals, but opponents pointed to the important role forests play in filtering water and sequestering carbon.

"It's easier to clear-cut a forest [for solar], but we're already losing forests," said Alison Prost, vice president of environmental protection and restoration with the Chesapeake Bay Foundation, a regional environmental nonprofit.

"If we don't have forests acting as carbon sinks, and if we don't have the filtration that forests provide, we're going to offset the benefits of solar. It may be that we're never going to have enough rooftops, but until somebody shows that they've exhausted the alternatives, it's hard to accept people saying this is the only way we can do it."

Industry leaders say that meeting clean energy goals won't be possible without development on some controversial sites, but those challenges should prompt [state officials](#), activists and energy companies to have thoughtful conversations about balancing their different concerns.

"You can't get from where we are today to where the nation needs to go by building on already disturbed lands and residential rooftops," said Tom Vinson, vice president of policy and regulatory affairs with the American Clean Power Association, an advocacy group for the renewable power sector. "If folks accept that premise, it's a legitimate discussion to say what factors should drive where development takes place."

Sean Gallagher, vice president of state and regulatory affairs with the Solar Energy Industries Association, a trade group, said states with clean energy goals shouldn't narrow their approach.

"You need both ground-mounted solar and rooftop solar, and you need a lot of both," he said. "There will be more land that is used for renewable energy production, and inevitably there will be some conflicts. Our job as an industry is to be smart about development."

The shift toward more wind and solar also will require massive amounts of raw materials, including copper, concrete, steel and rare-earth metals.

"Building all of this clean energy infrastructure is going to involve significant increases in extraction of these resources," said Seaver Wang, a climate analyst with the Breakthrough Institute, a global research center that works on environmental issues. "It realistically is a necessary evil to achieve the clean energy buildout on the needed scale."

In states such as Alaska, Minnesota and Montana, environmental groups have fought against copper mining projects that they say threaten to pollute important waterways and habitats.

Some groups, including the Friends of the Boundary Waters Wilderness, which opposes a mining [project](#) in Minnesota, acknowledge the importance of copper for [renewable energy](#) and other technologies. But they argue copper is abundant enough to avoid building mines near pristine waterways, and they'd like to see the industry improve its recycling. Experts say recycling more copper will help, but it won't fully meet the resource demand created by renewable projects.

State officials say they evaluate such proposals based on environmental standards, without considering whether the resources will aid the [clean energy](#) transition.

"[Renewable [energy](#)] is not a consideration," said Dan Walsh, chief of the Hard Rock Mining Bureau of the Montana Department of Environmental Quality. "We review proposals against the standards that are established under statute."

Wang said it's unlikely that states will get more permissive about mining in order to enable their climate goals, but he said environmental groups may need to reassess their opposition to such projects.

"These are materials we're going to need, and we're going to need them from somewhere," he said. "If populations in the U.S. or Canada keep saying no to all this mineral extraction, it ends up in poor parts of the world where there's less regulation and labor standards. It's shoving the environmental risks elsewhere in the world. If it's slowing climate action, that carries its own environmental risks."

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Citation: Locals worry wind and solar will gobble up forests and farms (2021, May 4) retrieved 24 April 2024 from <https://phys.org/news/2021-05-locals-solar-gobble-forests-farms.html>

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