Arcadia

2024 Edition

THE STATE OF COMMUNITY SOLAR

Introducing our annual report on the industry landscape — covering where we're at, and where we're headed.

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EXECUTIVE SUMMARY

For those of us in the community solar industry, 2023 was a game-changing year. And as the largest manager of community solar projects in the US, we at Arcadia have a unique vantage point on the landscape. That's why we're excited to launch a new, first-of-its-kind report on the industry: The State of Community Solar.

This is the first edition of a new annual report that will catalog the growth in our industry and the opportunities we see for the road ahead. You can dive into the numbers on the pages ahead, but in short — we're happy to say that the state of community solar is stronger than ever. Multiple states have strengthened and expanded their community solar programs, groundbreaking legislation at the federal level is being implemented across the country, and the industry has responded by investing billions of dollars in new solar projects that will serve millions of customers.

We're incredibly encouraged by this year's progress and look forward to seeing how the industry continues to evolve. Below are some of the key highlights from our look back at 2023:

- **State programs established or expanded:** Multiple states adopted legislation strengthening community solar programs this past year, from implementing statewide programs for the first time (New Mexico) to making pilot programs permanent (Maryland and New Jersey). Other states, including Minnesota, dropped geographic restrictions that hobbled their community solar programming. And critically, California continues to make strides at creating a new community solar program, which we expect the state to finalize in 2024. These expansions provide access to solar energy to residents, often for the first time, including for low- to moderate-income (LMI) households.
- **The landmark Inflation Reduction Act:** The Inflation Reduction Act (IRA) delivered a boost of heavy-duty firepower to community solar. The most significant climate bill in United States history has effectively enshrined community solar in federal tax policy for the first time. The tax credits and grant funding contained in the law will catalyze a flood of new projects to get off the ground in states that have a regulatory structure in place. But more importantly, the law is opening the door to new business models that will dramatically accelerate the development of community solar and its consumer benefits, while also simplifying the process.
- **Arcadia's 2 gigawatt (GW) milestone:** Since Arcadia was founded in 2014, we have tirelessly worked towards connecting the clean energy future by creating accessible technology that lets everyone — from the everyday consumer to small businesses to low-income energy users — take part in clean energy. As the country's leading manager of community solar subscriptions, Arcadia has over 2 GW of community solar capacity available across 600+ projects and 15 states. This 2 GW milestone is equivalent to preventing more than 2 billion pounds of coal from being burned to power the grid each year.

Against this backdrop, community solar is expected to grow immensely over the next several years. Thanks to committed industry investments and unprecedented legislation, momentum for this singular clean energy solution will continue to grow. We can't wait.

Kiran Bhatraju
Founder & CEO, *Arcadia*

BY THE NUMBERS: THE STATE OF THE INDUSTRY

Community solar saw dramatic growth in 2023

According to a report from Wood Mackenzie, overall community solar capacity was expected to exceed 6 GW by the end of 2023. The existing community solar projects in the US now generate enough electricity to power 918,000 homes. This clean energy option is also widespread throughout the country, with Arcadia managing projects in 15 states.

In the next five years, community solar is expected to grow 118% with at least 6 GW of community solar capacity expected to come online in existing markets between 2023 and 2027. This predicted growth, aided by an acceleration of installed capacity in current markets and further establishment of new programs in additional markets, will contribute to the Coalition for Community Solar Access' (CCSA) target of 30 GW of community solar by 2030.

Federal funding from the IRA will also contribute to this target. Now, developers are well-positioned to take advantage of new and expanded investment tax credits (ITC) from the IRA. This groundbreaking legislation also led to the Environmental Protection Agency's (EPA) establishment of the Greenhouse Gas Reduction Fund. That $27 billion investment will mobilize financing and private capital to address the climate crisis, cement the country's economic competitiveness, and promote energy independence — all while delivering lower-cost energy and economic boosts to communities that historically have been left out of the clean energy transition.

The popularity of renewable energy drives demand for community solar

The growth in community solar capacity throughout the year allows more people to earn greater savings on their energy bills and increases access to clean energy that was previously unattainable for some, allowing more families to benefit from the most popular form of energy production in the country.

Solar is the most popular US energy source: A recent poll by Pew Research found an overwhelming majority of Americans – 82% – support the expansion of solar power. That's compared to the 75% who favor more wind turbine farms and the 57% of Americans who favor expanding nuclear power. Learn more

Americans are moving past "NIMBY" concerns: Large and bipartisan majorities of Americans say they wouldn't mind solar panel fields being built in their communities, according to a Washington Post-University of Maryland poll. Three-quarters of all Americans say they would be comfortable living near solar farms, attitudes that appear to remain largely consistent regardless of their location. Learn more

For the nearly two-thirds of Americans who do not have access to residential solar, community solar offers them an opportunity to save money on their utility bills while supporting the most popular energy source in the country. This provides an important baseline for the growth of community solar in the years ahead.

Community solar creates jobs

Community solar programs can, and do, serve as a win-win scenario for communities all over the country. As projects are planned and constructed, workers are trained to install and maintain new developments. This clean energy option creates sustainable, good-paying jobs that can provide economic boosts to towns that need it. To illustrate the economic impact that community solar can have on a state, the University of New Mexico predicts that the state's newly established program will generate over 1,500 jobs, totaling $58 million in labor income and $206 million in total industry economic output. Already, the community solar industry supports 16,785 jobs as of 2022, and this number is expected to increase.

UPDATE ON FEDERAL POLICIES

IRA implementation fuels growth and new business models

Over the past year, the IRA has ignited a boom in renewable energy that has reshaped the American economy. At its core are tax incentives and grant funding designed to accelerate the deployment of clean energy.

Since the landmark climate legislation was signed into law, hundreds of billions of dollars have been driven into renewable energy projects — including the largest community solar module order in US history, an investment that will support the development and construction of about 400 new community solar projects nationwide.

Because the IRA is a 10-year program, the timeline offers developers and other stakeholders the certainty and stability they need to invest. It's a long overdue structural change that has allowed the renewable energy sector to chart a timeline of growth and investment without the fear of unpredictability that competing energy sectors — including the fossil-fuel industry — have long enjoyed. Read more about the specific provisions.

As a result of the incentives in the IRA, the community solar industry has been able to adjust by pursuing unique partnerships and innovative business models.

Case study: Arcadia, Google, and EDPR NA Distributed Generation partnership

Thanks to new support from the IRA, the community solar industry is positioned for even faster growth. In 2024, we expect to see the IRA drive more innovative business models, similar to the new nationwide partnership between Arcadia, Google, and EDPR NA Distributed Generation.

This collaboration will prioritize direct community investments and deliver utility bill savings to LMI households by connecting an estimated 25,000 households in the Midwest and Mid-Atlantic with 500 MW of distributed solar power.

It's a precedent-setting partnership that will reduce the energy burden for the US households that want to take part in clean energy but do not have access to state or utility programs for community or rooftop solar. Many of these households — particularly low-income families of color — could benefit immensely from the savings that clean energy brings because they are faced with a higher energy cost burden, where they allocate a disproportionate share of their income to utility bills. Learn more

Federal environmental justice initiatives

In 2023, the community solar sector emerged as a vital component of the effort to meet unprecedented environmental justice objectives being pursued across the United States, in large part because community solar is uniquely positioned to provide benefits to LMI households. In President Biden's first week in office, he issued Executive Order 14008, establishing the Justice40 initiative. Learn more.

The Justice40 initiative has helped guide additional initiatives, including:

- **National Community Solar Partnership:** Created by the Department of Energy, the National Community Solar Partnership (NCSP) provides resources, technical assistance, and peer networking opportunities to its partners to help them overcome persistent barriers to broadening community solar access, with a focus on benefiting disadvantaged communities.
- **Low-Income Clean Energy Connector:** This tool, established by the NCSP, will make community solar more widely available for those participating in government-run low-income support programs.
- **Community Power Accelerator:** The Community Power Accelerator helps smaller community solar projects get off the ground, especially in underserved communities, by providing the resources and network to support the equitable distribution of capital needed to develop these projects.
- **American-Made Sunny Awards for Equitable Community Solar:** This prize competition recognizes community solar projects and programs that employ or develop best practices that aim to increase equitable access to community solar.

STATE LEGISLATIVE UPDATES

State updates from 2023

The past year was pivotal for community solar in several key states, including Minnesota, Oregon, Maryland, and New Mexico. These states took legislative action to either expand or establish community solar, allowing energy users to reap the benefits of this clean energy option:

- **New Jersey:** The Board of Public Utilities published proposed rules establishing a permanent community solar program in the state. Within a few short months, the state legislature doubled down on community solar by expanding the program's allowable capacity. Learn more
- **Minnesota:** One of the earliest adopters of community solar, Minnesota expanded its program in some areas and tightened the reins in others — and more changes may be in store. Learn more
- **Oregon:** The state of Oregon established a permanent community solar program this year, although several changes can be made that would further improve the program. Learn more
- **Maryland:** The Maryland legislature established a permanent community solar program this year while setting new energy storage targets. Learn more
- **New Mexico:** Following years of rulemaking, New Mexico selected up to 45 projects in the state to participate in the state's first community solar program. Learn more

States to watch in 2024

Following the successes in state capitals in 2023, the following states have opportunities to take action to establish, expand, or improve community solar programs in 2024:

- **Wisconsin:** Proposed legislation to legalize community solar garnered broad support from some of the state's top business sectors during last year's legislative session. Now, advocates are hoping 2024 is the year when lawmakers in Madison will move this pivotal legislation across the finish line. Learn more
- **Washington:** The push to modernize the state's community solar program is gaining momentum in Washington after lawmakers introduced legislation that will expand access to clean, affordable, and equitable power to all Washingtonians. Learn more
- **Michigan:** Efforts to launch a community solar program are moving forward after lawmakers introduced bipartisan bill packages in the House and Senate and held legislative hearings to weigh in on the proposed legislation. Learn more
- **California:** More than a year after lawmakers voted to require a new community solar program, state regulators are continuing to fine-tune the details, leaving developers, advocates, and utilities eager to see how the reforms will ultimately play out. Learn more
- **Pennsylvania:** As the year drew to a close, lawmakers were considering legalization of a new community solar framework, putting Pennsylvania on the map as a potentially bright pickup in 2024. Learn more

Opportunities for reform

Even with the growth of community solar in states across the country, there are opportunities to reform programs to expand access to LMI households and other consumers who do not have access to residential solar.

Adopting net crediting: Net crediting is a simplified billing solution that allows community solar customers to receive their clean energy savings while paying just one power bill each month, instead of the traditional two. Programs without net crediting require customers to pay both a standard utility bill and a community solar subscription fee. They must then true up these two bills — which generally have different billing periods — to understand their actual savings and total benefits of participating in the program. Learn more

Allowing subscription portability: In states like Maryland, customers who move to a new service address — even within the same utility service — lose their community solar subscriptions and their retail electricity supply contracts. There are no existing protections to ensure that a customer who moves has the option of seamlessly retaining such existing contracts, and the impacts on customers are detrimental. Learn more

In addition to those changes, policymakers and regulators should consider reforms that will address lingering challenges — including high interest rates, interconnection delays, workforce shortages, and import tariffs. Learn more

CONCLUSION

The State of Community Solar is stronger than ever.

After an unprecedented year in 2023, the community solar industry is poised for tremendous growth. The implementation of the IRA has unleashed a wave of investment and innovation.

The industry has responded by investing billions of dollars in new solar projects that will serve millions of customers. As a result, the industry is providing more clean energy and more consumer savings than ever before.

Multiple states have strengthened and expanded their community solar programs, with additional states expected to create or expand programs in 2024. Against this backdrop, community solar is expected to grow immensely over the next several years. Thanks to committed industry investments and unprecedented legislation that leads to federal funding, the community solar industry is set to thrive.

SUPPLEMENTAL DATA

- **Solar is the most popular US energy source:** 67% of Americans say the US should prioritize developing alternative energy sources — including wind, solar and hydrogen technology — compared to the 32% who say the priority should be expanding the exploration and production of oil, coal and natural gas.
- **Americans are moving past "NIMBY" concerns:** 69% of residents in rural and suburban areas say they would be comfortable if wind turbines were constructed in their area, as would 66% of urban residents. The support is bipartisan. 66% of Republicans say they are comfortable with a field of solar panels being built in their community compared to 87% of Democrats.

IRA Tax Credits and Incentives

- **Expanded project eligibility:** Projects up to 5 MW, or enough to serve as many as 1000 homes, now qualify for the federal investment tax credit. This will make it more economically viable to invest in larger community solar projects, primarily those situated in low-income communities or that benefit low-income households.
- **Energy Community Tax Credit Bonus:** This credit is designed to incentivize clean energy projects on polluted land and Brownfield sites, including coal fields. It applies a bonus of up to 10% (for production tax credits) or 10 percentage points (for investment tax credits) for projects, facilities, and technologies located in energy communities.
- **Low-Income Communities Bonus Credit Program:** This bonus credit to support projects serving low-income communities provides a 10 or 20 percentage point increase to the investment tax credit for qualified solar and wind energy facilities with a maximum net output of less than 5 MW.
- **Solar Investment Tax Credit:** This tax credit reduces the cost of installing solar panels. The IRA extends the ITC for 10 years and provides a bonus credit for projects in energy communities, which are low-income communities or communities that have borne the disproportionate impacts of pollution.

Ultimately, these and other provisions contained in the IRA will help to reverse longstanding injustices. In addition to reduced energy costs, other benefits include good-paying clean energy jobs in low-income communities and supporting small business growth.

Federal policies

New federal rules and opportunities for new partnerships will only further turbocharge our industry. Innovative partnerships and new business models will continue to simplify what has historically been a complicated process for community solar initiatives.

Justice40: This order directs 40% of the overall benefits of certain federal investments — including those in clean energy and energy efficiency; clean transit; affordable and sustainable housing; training and workforce development; the remediation and reduction of legacy pollution; and the development of clean water infrastructure — to flow into disadvantaged communities.

Over the past several years, the community solar industry has worked tirelessly to contribute to Justice40 initiatives to ensure that every community benefits from the clean energy transition — underscoring the Biden Administration's commitment to making renewable energy affordable across the country.

Community Power Accelerator: The NCSP also recently established the Community Power Accelerator Prize that is designed to enable developers to grow their operations and support multiple projects, with 25 winners receiving a cash prize of $50,000 each, as well as technical assistance to further scope out their project portfolios to ready them for financing and philanthropic partners.

American-Made Sunny Awards for Equitable Community Solar: An additional award-based initiative that the NCSP established are the American-Made Sunny Awards for Equitable Community Solar (Sunny Awards). In November 2023, the Grand Prize winners received $10,000 and the Meaningful Benefits Award winner received $5,000, recognizing programs and projects that are advancing this clean energy option to communities throughout the country.

Solar for All: These grants will be used to establish or expand existing programs. As the application window has already closed, the EPA is expected to announce the winners of these grants sometime in March 2024.

State legislative updates

State updates from 2023

- **New Jersey:** 2023 was an exciting year for community solar in the Garden State. Building off lessons learned from multiple years of pilot program projects, New Jersey issued proposed rules for the long-anticipated permanent community solar program. The program is largely built for success, with the permanent program rules removing cumbersome project location requirements that created challenges for matching customers to projects, establishing a net crediting implementation timeline, permitting income self-attestation, and more. Moreover, the state legislature doubled down on community solar by expanding the program's allowable capacity as the year closed out, which will establish the state as a juggernaut of community solar with the program now supporting over 1 GW of community solar through the rest of the decade.
- **Minnesota:** The state's recently expanded program is still only available to customers of Xcel and is administered by the Minnesota Department of Commerce. Additionally, qualifying solar gardens, as they are called in Minnesota, are capped at 5 MW of generation capacity and must have at least 25 subscribers per MW, where no consumer is allowed to subscribe to over 40% of a garden's capacity. There is a new 30% LMI carveout that benefits affordable housing and public interest groups, like nonprofits and libraries, enabling more LMI consumers to reap the benefits of clean energy.
- **Oregon:** Lawmakers passed SB 1547 in 2016, requiring the Public Utilities Commission to establish a community solar program. After four years, the program officially launched in 2020 and was further expanded in 2022 with Oregon Shines, which began signing up subscribers in summer 2023. (Note: Arcadia acquired Oregon Shines in June 2023.) However, there have been several issues taking place in the state, including confusion by local officials over the permitting process and friction with subscriber acquisition in some localities. State lawmakers can make several tweaks to the program to allow community solar to reach its fullest potential:
    - The program should be expanded with additional tranches, allowing for more scalability, flexibility, and accessibility.
    - The LMI carveout should be increased to 50% so that more communities can take part in this clean energy and industry leaders can take part in federal environmental justice initiatives.
    - The maximum community solar project size should be increased from 3 MW to 5 MW so that more economical projects can be developed throughout the state.
    - The subscriber manager capacity cap should be removed.
    - The program should transition to a Value of Solar Rate so that owners of the solar projects are fairly compensated for the energy they produce for utilities.

- **Maryland:** Lawmakers passed HB 908 earlier this year. This bill is set to provide community solar access to consumers throughout the state, replacing the existing community solar pilot program with a permanent, less restrictive, and more equitable one by moving the program under the 3 GW NEM cap requiring net crediting, improving the LMI customer experience and implementing a number of other program improvements. As 75% of Maryland households lack the ability to install solar panels, whether due to their financial or living situation, this program will allow all Maryland residents to reap the benefits of community solar.
- **New Mexico:** Another state that made strides to ingrain community solar as a clean energy option in 2023 was New Mexico. Lawmakers first acknowledged the significance of community solar in 2021, when they passed the Community Solar Act, following which, regulators set up the rules for the program in 2022. In April 2023, a third-party administrator selected up to 45 community solar projects, with the first programs coming online in 2024. The community solar program is expected to generate over 1,500 jobs with $58 million in labor income and $206 million in total industry economic output. The act caps the initial capacity for the statewide program at 200 MW until 2024 and will be set by the PRC in the subsequent years based on their review. A total of 30% of the annual statewide capacity is reserved for low-income customers and organizations. Such programs that target energy needs in low-income communities, along with federal grants that fund solar energy projects like the Environmental Protection Agency (EPA) grant, could help New Mexico achieve its goal of having 100% carbon-free power by 2045.

States to Watch in 2024

- **Wisconsin:** While the year started off promising for legalizing community solar, prospects dimmed after lawmakers recessed in mid-November without acting, making it the third year in a row the legislation has stalled amid opposition from utilities and labor unions. Despite its failure to launch, the community solar bill introduced by Republicans last spring garnered broad community support. Joining the Wisconsin Farm Bureau Federation in backing the legislation are the League of Wisconsin Municipalities, the Conservative Energy Network, and the Wisconsin Conservative Energy Forum, as well as multiple business groups, including the realtor's organization and associations representing grocers, builders and contractors, and retailers. Let 2024 be the fourth — and final — attempt to enact community solar in the Badger State.
- **Washington:** While home to the country's first community solar project, Washington is currently ranked 31st in deployment — and lawmakers are now at the cusp of giving the program a much-needed overhaul. For the past decade, Washington has enacted a slew of green policies, including setting ambitious clean energy roadmaps, establishing a cap-and-invest system, and banning the sale of new gas-powered vehicles by 2035. Last year's Fair Access to Community Solar Act (HB 1509) would have revamped the state's community solar program by establishing a virtual net metering program for community solar projects, increasing their size and directing benefits to LMI communities. While lawmakers failed to ultimately adopt the legislation last year, it has increased momentum going into 2024. With Gov. Jay Inslee leaving office in 2025, it's possible the nation's longest serving governor will want to further burnish his environmental credentials by propelling his state's community solar program into the modern era.
- **Michigan:** While the state has adopted climate friendly policies in recent years, enacting a community solar program is not yet among them. But heading into 2024, the prospects continue to burn bright. Lawmakers proposed legislation (HB 4464 and HB 4465) that would enable community solar projects up to 5 MW and provide subscribers with a credit on their energy bills. Reforms have also been introduced that would remove the state's 1% cap on distributed energy generation, including rooftop solar.
- **California:** The California Public Utilities Commission (CPUC) continues to deliberate a robust community solar program. A proposed decision is expected to come by March, with a final decision sometime before the July 1, 2024 statutory deadline. Meanwhile, the California solar industry has been shaken as CPUC approved new regulations on the state's virtual net metering and net energy metering aggregation programs to exclude properties with multiple electric meters from accessing incentives, a move that will drive up costs for apartment

buildings, businesses, and schools, among other users. A second ruling by the state regulators in November reduced incentives for rooftop solar, contending they drove up electricity rates for non-solar customers.

- **Pennsylvania:** Current Pennsylvania law prohibits shared residences, apartment buildings or shaded roofs from utilizing solar energy. If enacted, HB 1842 would enable community solar projects that are accessible to all Pennsylvanians, regardless of their ability to install solar panels on their own roofs. The bill comes as consumers have seen major increases in their utility bills over the past year, including some with increases of over 60% in a nine-month span. Legislation was introduced in the House of Representatives in November, resulting in advocates and developers keeping an eye on Pennsylvania heading into 2024.

Opportunities for reform

Net Crediting

Community solar customers have traditionally received two bills (one from the utility and one from the community solar project), which leads to a bad customer experience and is correlated with more customers dropping out of the program — something that is particularly problematic among LMI households.

Net crediting removes the need for a subscriber to provide a payment method to the community solar provider, thereby removing one of the greatest barriers to participation. This makes it easier for LMI customers to participate in the clean energy transition and save on their utility bills at the same time. Here's how net crediting benefits LMI subscribers:

- Net crediting allows customers to pay their community solar subscription fee through their existing payment methods. That means customers can continue to pay their power bill in cash at neighborhood convenience stores or utility payment centers, for example. This enables unbanked households to participate in the clean energy transition and benefit from regular savings.
- The customer experience is simplified, enabling the subscription manager to serve households without the need to collect sensitive payment information — which is the number one barrier to LMI customer participation in community solar.
- Net crediting shifts the risk of nonpayment from the subscribers to the utility, while the utility receives the benefit of lower exposure to customer nonpayment.

Subscription Portability

- **Current prohibition on portability is inhibitiv**e: If a subscriber would like to continue participating in community solar after a move, they will need to re-enroll in their project. This typically includes waiting in a queue and only being connected once an eligible project has availability.
- **This disproportionately harms LMI customers:** According to the Urban Institute study on Family Residential Instability, "Residential mobility rates are higher among certain populations, especially low-income households. Households below the federal poverty level moved at nearly twice the rate of households above the poverty level during a one-year period (19 percent versus 10 percent)."
- **Portability is a customer's right:** Customers move for a variety of reasons ranging from preferring a new neighborhood to eviction. Moving to a new service address does not justify forfeiting a customer's right to participate in community solar.
- **This is not unique:** Like cable television services or cell phone services, these agreements should move with customers as they move and change service addresses if they are within the same utility territory.

States in 2024 should continue to adopt legislation that enshrines the right to full portability.

Community solar is expected to grow in 2024

With states expanding and establishing community solar programs, such as Minnesota, Oregon, and New Mexico, and additional states expected to in 2024, like California and Wisconsin, community solar is set to flourish. Already, 41 states, plus Washington, D.C., have at least one project online, and this number is set to further expand next year. With additional federal grant funding from the Solar for All initiative being announced in March 2024, new projects will begin popping up all over the country, and existing programs will be expanded so that more energy users can sign on.

Now, the IRA has made possible cross-industry collaborations that lead to innovative partnerships and new business models that result in a leaner, more efficient, and more impactful industry that is poised for growth. These legislative and regulatory efforts, as well as the continued innovations from the industry, help make this affordable clean energy option available for those who previously have been prevented by barriers to take part in renewable energy for decades.

Challenges ahead

High interest rates
Higher interest rates have made it more expensive to finance new projects, while investors have also sold off their renewable energy stocks as a result. The clean energy sector has been particularly vulnerable because many companies ink long-term contracts, fixing the price at which they will sell energy, before developing their projects. The elevated rates have made their high levels of borrowing more expensive to service.

With inflation on the downswing, economists believe the Fed could start cutting rates sometime in 2024 — but it's far from a sure bet.

Opt-out programs
Another headwind community solar is facing is the development of "opt-out" or "auto-enroll" community solar programs. Under these programs, municipalities, utilities, or public authorities enroll customers into community solar projects without their consent. By not informing customers of their enrollment into a solar project, opt-out programs leave real value on the table. For many customers, community solar is just the first (and more cost-effective) step on the journey to home electrification. Once customers decide to participate in community solar and engage in their electricity usage, they are much more proactive about their energy usage and therefore more likely to electrify other parts of their home. Removing this critical touchpoint from the energy ecosystem means that states would be inadvertently destroying the best avenue for achieving longer-term electrification goals. Opt-out proceedings are under consideration in New York and New Jersey, and in various stages of consideration elsewhere in the US.

Increased local opposition
Stakeholders have voiced concerns over myriad of issues, including the loss of agricultural and forest land, tax revenues, aesthetics, and impacts on wildlife habitats. In nearly every state, local governments have enacted laws and regulations to block or restrict renewable energy facilities, and/or local opposition has resulted in the delay or cancelation of projects, according to a May 2023 report by the Sabin Center for Climate Change Law at Columbia University — including nearly 300 renewable energy projects that have encountered significant opposition in 45 states.

These permitting delays and pushback jeopardize clean energy goals and developing projects that will help reduce the energy burdens for millions of Americans.

Thankfully, the Solar Energy Industries Association, the Stanford Woods Institute for the Environment, and the Nature Conservancy announced in October that they had reached a wide-ranging agreement with environmental, conservation, farm and tribal groups aimed at reducing conflicts over where to build big solar energy facilities.

Interconnection delays

Interconnection delays result in postponed or canceled projects, which now face an average delay of nearly four years just to get connected. Massive interconnection fees have also presented challenges. By one account, the US has nearly twice as many projects waiting to be connected than installed capacity, according to a recent report by the Lawrence Berkeley National Laboratory.

Study after study has shown the benefits of grid modernization. But since the nation's energy infrastructure is a patchwork series of grids with no centralized oversight, state and federal agencies have only offered piecemeal proposals, including FERC's Order 2023 issued in October, which prioritizes projects in queues based on their likelihood to succeed and requires projects to be studied in clusters. At the same time, Congress has given the federal government new authority to override objections from state regulators for certain power lines deemed by the Department of Energy in areas where the agency has determined that "electric energy transmission capacity constraints or congestion are adversely affecting consumers."

Workforce issues

The Solar Energy Industries Association aims for solar to reach 30% of U.S. electricity generation by 2030. To hit the milestone, the solar and storage industries would need to hire 800,000 new workers to reach a total workforce of more than 1 million Americans — or triple the solar energy industry's current workforce.

To chip away at the shortfall, President Joe Biden in September took executive action to create the "American Climate Corps," a workforce training and service initiative to employ 20,000 Americans in conservation and clean energy jobs. Once they complete their paid training or service program, members of the New Deal-type program will gain the skills necessary to access good-paying jobs that are "aligned with high-quality employment opportunities," according to the White House.

Unfriendly regulatory environments

In California, new net metering rules have weakened the sector. The state's "NEM 3.0" decision to reduce payments to rooftop solar owners for exporting clean energy to the grid, prompting concerns about a decrease in demand.

Zooming out more broadly, states that are viewed as hostile to community solar programming often have strong ties to the fossil fuel industry and the utilities that have historically been opposed to community solar, like in Wisconsin, where the most recent push for community solar was held up by labor and utility solar interests.

These states may have laws or regulations that make it difficult or impossible for community solar projects to develop or operate, including Florida, which limits the size of community solar projects to 2 MW. Recent legislation in Ohio has given counties the authority to block specific projects or opt against siting renewable energy projects at all in their localities. Meanwhile, Indiana rolled back net metering, making it difficult for prospective solar customers to estimate their payback period — or if the solar installation will even pay off at all, analysts said.

Tariff whiplash

After the Trump administration slapped tariffs on Chinese-made solar panels in a move to protect the domestic industry, developers canceled projects, resulting in job losses and millions in unrealized economic activity. The Biden administration extended the tariffs in 2022 — and vetoed a Congressional attempt to overturn them the following year — a move that angered lawmakers concerned about unfair trade practices from China. The restrictions are scheduled to end in June 2024, a timeline that coincides with a new set of import duties that will be imposed on Chinese solar manufacturers who have evaded tariffs by routing products through southeast Asian countries before shipment to the US With the new duties come renewed fears by U.S. developers that they will be unable to meet domestic demand. While the IRA has driven investment into domestic manufacturing, analysts predict it will take years for the US to become self-sufficient.

ABOUT US

Arcadia is a climate technology company connecting the clean energy future. Founded in 2014 on the belief that everyone deserves access to clean energy, Arcadia manages the nation's largest community solar portfolio, helping to tackle energy injustice while spurring economic growth with more than 2 GW of solar under management. For more, visit arcadia.com.