

THE SOL SOURCE

**How Announced
Federal Policy Can Drive
the Solar Industry
and Where It May
Fall Short** p6

Acquiring utility-scale assets in new ways p14

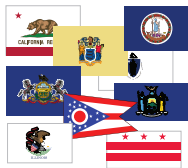


**Mindful Action is Needed to Increase
Hispanic Inclusion in Solar Energy** p10

**Women in Power: The Team Behind
Nebraska's Largest Solar Project** p15

WELCOME

THE SOL SOURCE is a quarterly journal that our team distributes to our network of clients and solar stakeholders. Our newsletter contains energy statistics from current real-life renewables projects, trends, and observations gained through interviews with our team, and it incorporates news from a variety of industry resources.



State Markets 3-5

California Massachusetts North Carolina Virginia
District of Columbia New York
Illinois New Jersey Ohio
Pennsylvania



Trends & Observations 6-12

How Announced Federal Policy Can Drive the Solar Industry -
and Where It May Fall Short

Mindful Action is Needed to Increase Hispanic Inclusion in Solar
Energy



Federal Budget 13

& Infrastructure Watch



Solar Chatter 14

What people are talking about



Solar Blogs 15-20

Women in Power: The Team Behind Nebraska's Largest Solar Project

Mexico's Energy Reform: Retreating from Private Energy Markets

Robots Roaming Around Solar Projects? Sol Systems' Newest Tech Addition



Company News 21-23

Sol Systems Hires to Scale North American Footprint

N Solar and Cozad Cut the Ribbon at City's New Solar Energy Facility



Sol Systems Around the Industry 24

Environmental Markets Association

ACORE Grid Forum

STATE MARKETS

California



Although the potential recall of Governor Newsom dominated headlines this summer, in the end, he garnered two-thirds support to remain in office.

On September 23, 2021, Governor Newsom signed an Executive Order that requires all new cars and passenger trucks sold in California to be zero-emission by 2035. In addition, all medium- and heavy-duty vehicles must be zero-emission by 2045 where feasible (2035 for drayage trucks). Relatedly, California utilities are examining how to accommodate widespread EV adoption, with potential opportunities for DG. Closing briefs in the NEM 3.0 proceeding have been filed and we expect a proposed decision by early December 2021.

District of Columbia



On August 13, 2021, the DC Public Services Commission (PSC) proposed to require all renewable

generating facilities, including behind-the-meter solar generators, to use a revenue-grade production meter or inverter-based production measurement equipment, as opposed to the current estimation procedures. Hundreds of individuals, organizations, key elected officials, and DC Department of Energy and Environment (DOEE) oppose major elements of the proposal. Notably, D.C. Councilmember Mary Cheh recommended the final rule provide exemptions for both legacy systems (i.e., those in operation before the rule takes effect) as well as any resident unable to afford the required system upgrades. The comment deadline closed October 13, 2021, likely pushing a final rulemaking into the winter at the earliest, and potentially after the departure of Commissioner Phillips, who has been nominated to the Federal Energy Regulatory Commission (FERC).



STATE MARKETS

Illinois



After months of negotiations, on September 15, 2021, Governor Pritzker signed the Climate and Equitable Jobs

Act (CEJA), a landmark law which sets Illinois on a path to 100 percent clean electricity by 2050 and, importantly for the solar industry, opens and re-funds the Adjustable Block Program (ABP), which supports solar on schools, community-driven community solar, distributed generation (DG) that utilizes equity-eligible contractors, small DG, large DG, and community solar. The law also includes new labor standards including requiring the payment of prevailing wage for all solar projects that receive RECs from the Illinois Power Authority (IPA). Per the enacted law, the IPA announced it was withdrawing their current LTRRPP revision, with a new draft expected early 2022.

Massachusetts



On September 22, 2021, the Department of Energy Resources (DOER) finalized several SMART guidelines, including changes

to energy storage, alternative programs for community shared solar tariff generation units and low-income community shared solar tariff generation units, and low-income generation units. Separately, we anticipate the Department of Public Utilities (DPU) to issue an order in Docket 20-75 (interconnection cost socialization) by the end of this year.

New York



On August 24, 2021, Governor Kathy Hochul took office and will serve the remainder of the current term,

setting up an active primary for next year's election. Governor Hochul made a series of Climate Week policy announcements, including a near-doubling of the NY-SUN distributed solar program to 10 GW of installed solar capacity by 2030, with details of this and several solar programs forthcoming. Governor Hochul previously signed legislation phasing out the sale of emitting cars by 2035. On 9/30, Governor Hochul designated Rory Christian (previous Environmental Defense Fund clean energy leader) as chair of the Public Service Commission and chief executive officer of the Department of Public Service.

New Jersey



After months of stakeholder processes and input, the Board of Public Utilities (BPU) released four orders on July 28, 2021, including a detailed

Solar Successor Incentive (SuSi) Program and the official closure of the Transition Incentive Program (August 27, 2021). The SuSi program is comprised of two separate incentives, the Administratively Determined Incentive (ADI) that provides fixed tiered incentives to specific project types five megawatts (MW) or smaller and the Competitive Solar Incentive (CSI) that will focus on projects over five MW (anticipated mid-2022).

STATE MARKETS

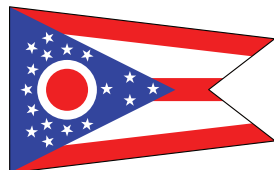
North Carolina



On October 13, Governor Roy Cooper signed House Bill 951, Energy Solutions for North Carolina, which includes a number of provisions aimed at

increasing clean energy deployment and reducing carbon emissions in the state. The bipartisan law sets as a target a 70% reduction in carbon emissions by 2030 and carbon neutrality by 2050. The law also provides provisions for utility procurement but falls short of meeting the needs of businesses and other large energy consumers.

Ohio



With Governor DeWine's signature, SB 52 went into effect on October 11, 2021, revising the power siting approval process for utility-scale solar and wind projects

(over 50 MW). The law requires approval from the county prior to applying to the Ohio Power Siting Board (OPSB), which will now include as voting members for each specific solar or wind project, two county and township government representatives or designees. The law also allows counties to establish restricted areas where wind and solar projects are prohibited, subject to referendum and requires developers to submit decommissioning plans when applying to OPSB.

Pennsylvania



The Pennsylvania Legislature held several informational legislative hearings this summer to discuss providing a stable investment framework to increase

solar development in the Commonwealth, preservation of agricultural lands, site decommissioning, and forced labor prevention. Separately, the Commonwealth remains on track to begin participating in RGGI in 2022.

Virginia



Dominion filed its RPS compliance plan on September 15, 2021. Separately, the State Corporation Commission (SCC) is working to finalize the certifications

for resources that will be used to comply with the Virginia Clean Economy Act (VCEA). The matter is currently awaiting a Commission Order that will approve the finalized GATS business rules for Virginia. Once approved, the rules are expected to be retroactive to January 1, 2021, meaning any REC's generated after that date from an eligible RPS resource should be available to satisfy Virginia RPS requirements [Click here to learn more about Virginia REC options.](#)



TRENDS & OBSERVATIONS

How Announced Federal Policy Can Drive the Solar Industry - and Where It May Fall Short

By Yuri Horwitz

This article was originally [published by pv magazine](#).

When we began in 2008, if somebody suggested at a conference that solar would repeatedly be the single largest source of new energy infrastructure in the United States, they would have received a polite smile – with the right audience. And yet here we are.

Solar outperforms natural gas and wind as the fastest growing, and one of the least expensive, new electricity-generating sources in the U.S. and around the world. In the first half of 2021, solar photovoltaics (PV) accounted for 56% of all new electricity-generating capacity additions in the U.S., adding nearly 11 GWdc of capacity. This is a 45% year-over-year increase and the largest Q2 on record.¹ This year is on track to become the biggest year ever for new solar capacity additions in the U.S. Right now, a new project is installed every 84 seconds in this country by over [10,000 solar businesses](#) employing over [250,000](#) workers.

This growth is being led in large part by utilities, municipalities, and corporations. Bloomberg New Energy Finance estimates that the 285 corporations in the [RE100](#) could drive as much as 93 GW (around \$100 billion) of incremental new wind and solar projects by 2030.²



The Challenge

Our challenge is our scale. Increasing global demand for renewable energy and the continued electrification of the U.S. power and automobile sectors only adds to already significant supply chain issues for everything from modules, to inverters, to batteries. Freight costs have increased by nearly 1,000% at the Port of Los Angeles, and across ports in the United States. An unprecedented expansion of development assets within ERCOT, PJM, NEPOOL and MISO has created 5+ year interconnection delays, sometimes longer, with limited system-wide planning or cost-sharing for these upgrades.

Policy Needs to Adapt

Many current policies focus on optimizing the economic outcome of owning assets through a stand-alone federal investment tax credit (ITC) for batteries, an extension of the ITC for solar, or a direct pay option. We support these

¹ WoodMac, U.S. Solar Market Insight Full Report, March 2021.

² Bloomberg NEF, January 2021; one gigawatt is one million kilowatt-hours (kWh), or roughly sufficient to power 500,000 homes.

TRENDS & OBSERVATIONS

incentives, but they enable projects at or near commercialization at the “top of the pyramid” of our industry. This has worked historically to pull earlier stage projects through, but it will not work if we are to scale as needed.

About 2% of current domestic electricity generation is produced from solar. Our goal is 40% or more by 2035. In the next decade we will need to quadruple or quintuple our annual development of solar energy assets. A more cogent long-term policy approach must also focus on the development assets that will be the seeds of this future.

To plant these seeds effectively, the industry needs more transparency in cost projections, more confidence in equipment procurement, a more stable and transparent view on interconnection, basis and congestion, and a significant voice in helping utilities shape their long-term planning and investments.

In order to address these needs federal policy must address equipment availability, solar development pathway risk and timing, as well as transmission and distribution interconnection. This will enable our industry and investors to appropriately allocate risk capital among a much larger number of assets. Solar development needs to be less binary and faster to drive a vastly larger and broader base of assets at the “bottom of the pyramid” of the industry.

Where New Federal Policy Succeeds- and Falls Short

In our 2021 [Annual Letter](#), we highlighted three bipartisan priorities that are instrumental to meeting U.S. decarbonization goals: (1) immediately reduce solar import tariffs (and find other ways to incentivize long-term American made manufacturing); (2) invest in aging

transmission and distribution infrastructure in concert with utilities and RTOs; and (3) implement a national renewable energy portfolio standard (RPS) or clean energy standard (CES).

Remove Solar Import Tariffs That Threaten the Pace of Deployment

Solar import tariffs dramatically [limit](#) the growth of the U.S. solar and renewable energy industry, putting the U.S. at a global disadvantage and calling into question our ability to meet the goals set under the Paris Climate Accord. We estimate that 201 tariffs alone add at least \$.05/watt to the engineering, procurement, and construction (EPC) projections for each project, with a limited (if any) increase in domestic manufacturing. The tariffs also create massive uncertainty and compound preexisting supply chain issues.

We can, and should, incentivize domestic production through incentives such as production tax credits - not tariffs. We must ensure the availability of supply-side materials even when they're from China and pursue parallel focus on forced labor and other human rights violations. Tailored regional trade solutions targeted at specific bad actors paired with SEIA's leading traceability protocol is a good starting point and one the solar industry pioneered. The volatility of tariffs is dramatically increasing costs for our industry and impairing the ability of our industry to plan for and scale our future.

Lifting solar import tariffs should be a main priority of the Biden Administration. Climate change is repeatedly the most important issue for Democratic voters, solar energy is the most important tool we have to combat climate change, tariffs are the single largest issue the industry faces, and removing the tariffs requires no Congressional approval or action. We need to remove them.

TRENDS & OBSERVATIONS

Support Aging Infrastructure Upgrades

One of the biggest hurdles to scaling renewable energy is [the existence of old and aging electricity transmission and distribution infrastructure](#). This is a well-publicized problem, made even more evident by recent grid failures in California and Texas. The Bipartisan Infrastructure Framework and the budget reconciliation package offer the first comprehensive opportunity to build the 21st century grid.

The solar ITC has led to a period of remarkable industry growth since 2008.³ The infrastructure and reconciliation packages could do the same for transmission and distribution. In addition to economic incentives, the packages would tackle some of the issues with regional and interregional transmission necessary to successfully grow clean energy.

For example, the infrastructure package includes \$9 billion to assist states with siting transmission projects and to support the U.S. Department of Energy's (DOE's) transmission planning and modeling capabilities. It also includes financial support for constructing and modernizing grid infrastructure across the seams between the Eastern and Western Interconnections, the domestic interties with ERCOT, and for offshore wind projects. Further, it directs DOE to study capacity constraints and congestion when designating National Interest Electric Transmission Corridors, with the intention of spurring a nationwide version of Texas's successful Competitive Renewable Energy Zones (CREZ). This is exactly the work that must be done and the Administration's leadership here is commendable.

Pass Congressional Solutions to Expand Renewable Energy

If Congress passes the budget reconciliation as recently released, it will represent a transformative investment in clean energy. Though imperfect, it will be a once in a generation opportunity to drive a more sustainable future.

Congress is considering a budget reconciliation package intended to supercharge the expansion of solar and other renewable energy projects by, among other things, extending the solar investment tax credit (ITC) by 10 years at 30%, adding a new 30% storage ITC, and adding a substantial bonus ITC for solar projects that demonstrate concrete benefit to a low to moderate income (LMI) or environmental justice community. These provisions are in addition to the separate bipartisan infrastructure bill.

We expect the final package will require companies to pay prevailing wage in order to receive the full 30% ITC. We also expect incentives to utilize domestic content of projects, valuing those with higher a share of American-made components, in addition to directly incentivizing the growth of domestic manufacturing. The entire reconciliation package is expected to create hundreds of thousands of new jobs in manufacturing, construction, and service industries nationwide. Based on our internal analysis, we believe that the 30% ITC would effectively fund the prevailing wage requirements.

³ SEIA notes that since the ITC was enacted in 2006, the U.S. solar industry has grown by more than 10,000%. Solar Investment Tax Credit (ITC). Available at <https://www.seia.org/initiatives/solar-investment-tax-credit-itc>, accessed October 15, 2021.

TRENDS & OBSERVATIONS

Conclusion: Fundamental Change

We are on the precipice of groundbreaking federal clean energy policy that will fundamentally change the landscape for renewables, and specifically solar. The current infrastructure package and reconciliation bill offer a powerful and promising catalyst for the redesign and rebuilding of our national energy infrastructure and transportation grid.

This country is still missing a single roadmap for hitting our climate goals, such as a market-based framework like a RPS. And we must act quickly to modernize our grid through a collaborative effort with regional transmission organizations, FERC, utilities, and industry. But with these investments, we're well on our way to creating the energy future so many of us have been seeking.



TRENDS & OBSERVATIONS

Mindful Action is Needed to Increase Hispanic Inclusion in Solar Energy

By Javier Chacon

This article was originally [published by pv magazine](#).

Working together, we can and must ensure Hispanic communities benefit from and help shape the clean energy transition. As Hispanic Heritage Month comes to an end, we recognize the influence and contributions of Hispanic individuals and communities to American history, culture, and economy and I call on individuals and companies to move from recognition to meaningful action.

As a first step, we must take a holistic approach to increase diversity and inclusion. At the root of a successful strategy that engages and benefits more American communities is the need to take the necessary time to understand and craft solutions that meet the needs and challenges of each community. There is no one-size-fits-all approach; we need multiple strategies to ensure Hispanic and other minority communities benefit from and are involved in shaping how energy is built and used, whether that use is residential, commercial, or utility-scale.

Making Rooftop Solar Adoption Accessible for All Communities (alt: Hispanics and Solar)

According to Wood Mackenzie and the U.S. Energy Information Administration (EIA), solar is now the fastest growing electricity generating source in the U.S., making it a key driver shaping the national energy debate. As the U.S. deploys [more solar energy](#) than ever before, it is increasingly important to ensure the inclusion of Hispanics and other communities in the solar industry as consumers, workers, and students.



Hispanic Consumers - Low Solar Adoption

The most recent census data shows that Hispanic-majority census tracts have 30% less solar installed than non-majority Hispanic census tracts. On average, Hispanics face a [unique set of barriers](#) and [series of complicated factors](#) such as race, ethnicity, income, and homeownership that make it difficult to take advantage of the benefits of solar. Some of those benefits could include lowering electricity bills by installing solar on the roof of a house or nearby office building, or participating in a community solar project.

TRENDS & OBSERVATIONS

Hispanic Workers - Lack of Representation at Managerial Levels

A [2020 solar industry census](#) found that although the number of Hispanic workers in the solar industry is growing, that growth is mostly within low-wage construction and maintenance positions. Hispanics are underrepresented in higher-paying (and less transient) industrial jobs and management. The face of solar is still predominantly white with only 12% of executives and 20% of sales representatives being non-white. Studies show that Hispanic communities respond better to Hispanic and Spanish-speaking sales representative, which suggests that with more diversity among solar sales professionals and a more intentional community involvement strategy, Hispanic communities would likely be [more comfortable](#) with and able to take advantage of solar.

Hispanic Students - Few Pathways for Hispanic Students into Energy

Creating [early pathways](#) for Hispanic students to access opportunities within the energy industry is an important element of long-term success. A [2020 study](#) found that Hispanic and Black students are less likely than other students to choose or be driven towards STEM majors. Studies indicate that enrollment in STEM programs is a good indicator that a student might ultimately end up working within a high growth industry like clean energy. The origins of this issue can be linked back to lack of exposure, resources, and access to STEM curriculums.

Understanding the unique needs of different communities and creating access pathways is hard, but worth it; there are a few key short- and long-term ideas to consider that can help individuals and companies develop sustainable and effective inclusion methods for Hispanics and other minority groups.

Structured Company Initiatives

In 2020, collectively U.S. companies pledged to invest billions into justice, equity, diversity, and inclusion programs and initiatives. However, this must be converted to action to ensure those commitments and investments lead to real, identifiable, and positive change. [We are starting to see small shifts](#), but the magnitude of these public commitments must be matched by action and holding investors and companies accountable.

Companies often make the mistake of taking an “[add and stir](#)” approach, or [piecemeal approach](#), to diversity with limited success, when in fact “[\[t\]he most powerful strategies](#) to drive inclusion and diversity come from the business strategy, not HR programs. When the business has the right focus, the HR practices add value. When done in isolation ... the practices have little or no long-lasting impact.” Solar and other energy companies should establish both accountability mechanisms and metrics that require verifiable changes in company culture, HR programs, and business strategy. Bringing in outside resources with specific expertise in justice, equity, diversity, and inclusion to help companies align with leading practices and policies is a good first step.

Educational Investment-Stop Building Pipes and Start Growing Gardens

Focusing attention on revamping hiring methods to bring on more diverse talent alone will not solve the diversity issue. Changing HR practices in isolation does not fix the fundamental lack of access that many Hispanic students continue to face when entering the workforce. Investment in education is key. There are several programs across the country that focus on increasing minority access to energy and other technical fields, including the [Future of American Energy](#) that works with college-aged students, [Project Green Schools](#) that works with grade school students, and even more local programs like the [Urban Alliance](#) or [Higher Achievement](#). in the Washington DC area.

TRENDS & OBSERVATIONS

Project Development and Community Investment

When thinking about solar project development, it can be helpful to think about impact in three ways; project citing impact, project development impact, and project operations impact. First, investing in bridging cultural and [language gaps](#) in Hispanic communities will facilitate a better understanding of the [potential community impacts](#) associated with a solar project.

This first key step will help provide the foundation and insight necessary to begin to develop a plan that mitigates negative impacts and maximizes positive impacts, allowing the developers to learn how Hispanic communities view and value solar in their lives. A plan might include ensuring a project is constructed using

zero-waste practices or that a project is co-located with a community garden or provides local educational opportunities for students to learn about solar energy.

Importantly, many of these impacts are in addition to the traditional benefits that come along with building new solar projects like job creation, energy bill savings, and increased environmental health; it just requires intentionality and focus to do more. Together we can change the trajectory of American energy and increase equity and diversify within the renewable energy sector, but we must act collectively and hold each other accountable.



FEDERAL BUDGET & INFRASTRUCTURE WATCH



After a whirlwind summer on the Hill, the Biden Administration released the [Build Back Better](#) (BBB) reconciliation package on October 28; this is one of four must-pass pieces of legislation this fall – funding the federal government (the current continuing resolution runs out December 3), extending the debt limit, enacting the bipartisan infrastructure bill, and passing the clean energy and climate provisions in the reconciliation package (see our main trend article above). The extension and expansion of the clean energy tax credits as included in the BBB are critical to the solar industry's continued growth.



President Biden and his trade team face a number of decisions this fall that could break what Congress makes under the BBB – extending Section 201 tariffs and/or granting the pending AD/CVD petitions could severely hamper solar supply chains just as we need them more than ever.



This month, Treasury Secretary Janet Yellen rightly declared climate change a systemic risk to the financial system. The Financial Stability Oversight Council [report](#) states it plainly: “Climate change is an emerging threat to the financial stability of the United States.”



SOLAR CHATTER



The Solar Energy Industries Association (SEIA), released its quarterly [Solar Market Insight](#) report on Q2 2021, in which the **U.S. solar market surpassed 3 million total installations. The 5.7 GWdc of installed solar is the country's largest Q2 in history, a large part of why solar accounted for 56% of new electricity generation added in the first half of the year.** After a tough year marred by COVID-19, the solar industry, as it always has, continues to show impressive resilience.



As DC PSC Commissioner Phillips awaits confirmation to the Federal Energy Regulatory Commission (FERC), the Commission has split 2-2 on two major ISO/RTO filings, letting them go into effect by law. As a result, **both PJM's Minimum Offer Price Rule (MOPR) and the new Southeast Energy Exchange Market (SEEM) went into effect without a FERC order.** Both can be appealed, setting up Commissioner Phillips as the decisive vote on both, as well as rulemakings coming out of the current push to reform interconnection and transmission queues.



SEIA released a first-of-its-kind online certification program that rewards energy companies for putting diversity, equity, inclusion, and justice (DEIJ) best practices in place. The [Diversity, Equity, Inclusion, and Justice Certification Program](#) provides tools and guidance for companies as they analyze their practices and implement workplace solutions that improve diversity. As companies participate and excel in the program, they are eligible to receive either a Bronze, Silver, Gold, or Platinum certification.



On September 15, 2021, **PJM proposed to reform interconnection queue processing with the intention to clear the current backlog and reform the process going forward.** PJM proposes to move from the current "serial" cost allocation evaluation (aka first in, first considered) to a "cluster" approach similar to other RTOs. Details remain to be worked through, but clearing the 140 GW PJM queue would have significant climate benefits, given the vast majority of these projects are renewables.

Sol Systems is currently acquiring early- to late-stage utility-scale assets as part of its continuing efforts to work with developers to provide optimal financial solutions for their grid-scale projects, leveraging our ability to structure unique financial vehicles for environmental commodities. Interested developers and financiers should reach out to finance@solsystems.com

SOLAR BLOGS

Women in Power: The Team Behind Nebraska's Largest Solar Project

By Elizabeth Weir

The solar industry is beginning to take steps to diversify and create new leadership and professional development pathways for women. At Sol Systems, we just completed our first project led by an all-woman development team. It also Nebraska's largest solar project and Nebraska Public Power District's (NPPD) first battery storage project.

The project is an 8.5MW community solar project with 1MW battery storage in the City of Norfolk and was developed by a partnership that includes Sol Systems, GenPro, and Menser Development. Anna Noulas, Director of Origination, led the competitive RFP process submission and contract negotiations after the project was awarded. Anna's initial Norfolk team consisted of Jill Rathke - Business Development Associate, Lauren Aycock - Project Engineer, and Erin Hickok - Senior Investment Analyst.

As the project moved into the development phase, Bridget Callahan, Project Development Manager, led the coordination of site studies and the project's interconnection process with NPPD to ensure a smooth financing and construction process. From there, Meg Pieper, the Pre-Construction Manager, helped set construction timelines and worked to ensure project goals and needs were communicated and agreed-on by the project partners to lead the way to commercial operation, anticipated to be achieved in the spring of 2022.

Not only is this project going to be NPPD's first solar-plus-storage project, but it is also paired with positive community and environmental impact. The project is part of NPPD's SunWise program, a community solar



initiative where customers who sign up to obtain a share will receive an electricity bill credit. The credit allows customers to benefit from solar without the upfront cost of building a solar system on their property.

In addition, the project incorporates an on-site pollinator habitat to support the local ecosystem and local pollinator populations, like bees. The inclusion and design of the pollinator habitat was completed by performance engineer Juliana Isaac. Once the project is operational, students in the Electrical Construction and Control Program at Northeast Community College, Norfolk's local community college, will work alongside project operators and partners to gain onsite and practical solar experience. As a part of the project, the collective will provide three scholarships to students participating in the internship program, an initiative organized by Sol's Marketing Coordinator, Claire Siwulec.

The women that designed, developed, and built the Norfolk project took charge during the COVID-19 pandemic and created a highly efficient, effective, and flexible team. The Norfolk project leaders exemplify the added value of female leadership within the industry. With women comprising only 30% of the solar workforce, there is still so much work to be done, but we hope the story of Norfolk can inspire companies to act to further the progress being created today.

Mexico's Energy Reform: Retreating from Private Energy Markets

By Andrew Gilligan and Ricardo Tamez

Mexican lawmakers are close to dismantling the national renewable energy market by acting to pass a constitutional reform proposal that would fundamentally change the Mexican national power sector leaving renewable energy buyers and developers with nowhere to turn. The proposal would devastate the energy market in the eleventh largest economy in the world.

Despite increasing corporate and consumer demand for new Mexican renewable energy, the current administration is pushing hard to pass the constitutional reform proposal. In essence, the proposal would renationalize the Mexican power industry and set Mexico on a backward slope, potentially erasing decades of progress in its journey to clean energy.

Current Mexico Market

In 2014, Mexican energy reform policies, while not perfect, opened the door for private energy firms to participate in the power sector. It created a wholesale market, independent system operator (ISO), and created one of the most competitive global solar markets – largely driven by corporate and customer demand.

Yet, after the election of President Andrés Manuel López (AMLO), the 2014 energy reform policies have been re-branded as a threat to the state-run electricity utility - Comisión Federal de Electricidad (CFE). It is becoming increasingly clear that AMLO is prioritizing state-owned enterprises and their legacy fossil fuel supply over a competitive Mexican energy economy. A position strongly supported and advocated for on behalf of Mexican fossil fuel monopoly and utility giants, Pemex and CFE.



Energy dominance is part of AMLO's "Fourth Transformation" (4T) plan focused on returning economic power to the state, and as some experts have observed "change [or threaten] the very nature of Mexican identity." As a result, anti-renewable actions continue to mount, for example [Executive Actions from May 2020 solidifies AMLO's position](#). Shortly after AMLO was elected, the renewable energy auctions were cancelled, and it became increasingly clear that obtaining the national level permit for new renewable energy projects would be political in nature and increasingly difficult, often not possible.

Yet, one positive area of growth in Mexico has been the Generación Distribuida (DG) segment of the market – where installations less than 500 kW could receive accelerated net metering and interconnection approval. There is very strong customer demand for DG resources given both increased corporate sustainability targets and the growing concerns over rising national electricity rates.

Nevertheless, AMLO took executive action that limited large-scale solar development in favor of state-run fossil fuel entities. Yet, the Mexican Judicial branch has consistently denied his attempts to make unilateral change calling them unconstitutional. Some view the Mexican legal system as the key source of hope for the renewable energy industry during AMLO's 6-year term limited presidential term. This hope was

SOLAR BLOGS

somewhat bolstered when during the Mexican mid-term elections AMLO's political party - Movimiento Regeneración Nacional (MORENA) - lost several seats, although MORENA still performed well at the state level.

The New Energy Reform

The AMLO administration proposed the current Energy Reform at the beginning of October 2021, making an unprecedented attempt to renationalize the power industry, likely crippling the country's clean energy transition and economic growth for years to come. This is evidenced by administration's plans to table discussions on decommissioning fuel oil burning power plants, and the intention double-down on the use of PEMEX oil for power generation. This is coming from information in the energy ministry's [2020-](#)

[2024 development plan](#). Similarly, [Mexico's increased focus on coal to generate electricity](#) and AMLO's acknowledged "[fascination with fossil fuels](#)" leave little doubt as to the goals and consequences of the proposed changes.

This proposed new energy reform would impose restrictions on private participation that are even more stringent than the state of the Mexican power sector prior to the 2014 Energy Reform. [The proposal would make it illegal for private companies to directly procure power or self-supply energy](#). The actions would make Mexico's generation mix both dirtier and less reliable, likely leading to more rolling blackouts and brownouts already causing issues as energy supply growth stalls and electricity prices continue to increase.

What does this Energy Reform Mean?

• Constitutional changes that effectively renationalize the Mexican power industry

• Effective elimination of any fair Wholesale Electricity Market and cancellation of existing private generation power projects; Unclear outlook for distributed generation

• Independent regulation re-structured and CFE empowered; Power prices to be more expensive in Mexico

• Transition back to dirtier fuels for power generation rather than renewable growth; Elimination of Clean Energy Certificates



Source: Data from Consejo Coordinador Empresarial

SOLAR BLOGS

Deeper Dive on What the New Energy Reform means?

The new energy reform targets articles 25, 27, and 28 of the Mexican constitution with the goal of reinstating state monopoly in the electricity sector by substantially changing these sections. The reforms would re-vertically integrate the national utility CFE, folding in the CRE (the energy regulatory commission) and CNH (oil regulator) into SENER (the Cabinet Department for energy), and folding CENACE (the independent system operator) into CFE. Under the new reforms, the Wholesale Electricity Market (MEM) would be effectively eliminated as CFE would oversee dispatch, determine transmission /distribution tariffs, and all pending and existing permits for large scale generation would be [cancelled along with agreements made by the public sector to purchase electricity](#). The natural concern is that the new energy reform would remove most all independent regulatory checks and any semblance of a fair marketplace.

Moving forward, CFE would be constitutionally entitled to always generate at least 54 percent of Mexico's electricity— theoretically leaving up to 46 percent for private generation, but there is no clear way or mechanism for private generation to sell electricity, and it is hard to imagine how investors and developers will have confidence to invest in new renewable projects given this uncertainty and CFE's discretionary power over any project.

The proposal also ends the clean energy certificates (CELs) program – the Mexican equivalent of renewable energy credits (RECs) – a further blow to any type of market structure or incentive that would support Mexico's renewable energy targets.

Distributed Generation (DG)

It is still unclear how distributed generation (DG) would be affected by this proposal. The text of the energy reform does not explicitly target DG, but it does propose cancelling all private generation contracts. Given the Administration's primary focus on eliminating the larger self-supply private generation contracts (as opposed to rooftop distributed generation) combined with previous support from CFE for DG, it could be interpreted to mean that 500 kW and smaller systems will not be substantially impacted. However, the language canceling private generation contracts potentially creates uncertainty around DG too - which will put many DG investments in limbo and make it more difficult to confidently develop DG projects. Even if DG is initially unaffected, significant growth could lead to future action from the administration.

Rooftop Solar in Mexico eliminates approximately 1.3M tonnes of CO₂ annually according to [SENER](#) and has the capacity to increase given strong customer demand and a well-established industry. This too is threatened by this Energy Reform.

Mexican Legislative Outlook

It is hard to understate how drastic the new energy reform proposals are and how many projects, companies, and individuals the reforms would negatively impact. While on its face, the legislation lacks the two-thirds majority support it needs to pass, AMLO has increased pressure on the Partido Revolucionario Institucional (PRI) party, the party that first nationalized the oil and gas industry, in an [attempt to garner enough votes](#). According to people close to Mexican political leaders, there is an increasing sense and concern that some version of the new reform will likely pass.

SOLAR BLOGS

What This Means

We expect a vote will happen before December. If any version of the reform passes, it seems realistic to expect that:

- [These actions violate the USMCA and will likely lead to reprisals not only from private firms, but from the US and Canadian governments as well.](#)
- [This move would put at least \\$45 Billion USD of projects in jeopardy and may be considered expropriation of these projects under international law.](#)
- Mexico has set targets of reducing greenhouse gas emissions by 36% by 2030 through the Paris Climate Agreement. This energy reform likely eliminates any realistic scenario of achieving this given Administration prioritization to date.
- [Power will be more expensive; CFE solar is already 3x more expensive than that from the private sector according to data from the CRE.](#)
- For corporations, the dirtier and more expensive power comes with a third strike-it comes in clear contravention to their [COP26 Goals](#).
- This is projected to be devastating for the Mexican economy as seen in a study conducted by the Consejo Coordinador Empresarial, the renewable energy industry has the potential to increase the Mexican GDP by \$748 million USD by 2024, generate nearly 288,000 direct, long-lasting jobs, mitigate 55 Mt of CO₂ equivalents, [and generate massive savings for Mexican businesses and consumers.](#)

Moving Forward

If passed, the new energy reform proposal will negatively impact Mexico, international climate, clean energy, trade, and corporate interests for the US and US actors as well. The reforms will likely trigger many renewable energy firms to exit the Mexican power market and would hamper the ability for corporations and investors to meet clean energy and sustainability goals in Mexico. Renewable energy is a global growth engine that can fuel economic and community recovery and growth.

SOLAR BLOGS

Robots Roaming Around Solar Projects? Sol Systems' Newest Tech Addition

By Claire Siwulec

The robots are coming...to our solar sites! This spring, Sol Systems installed robotic mowers at its 1 MWac project in Rock Falls, Illinois to assist with vegetation management.

For Rock Falls, Sol Systems collaborated with the Langton Group, the Midwest arm of Automated Outdoor Solutions, to deploy robotic mowing solution at the site. Each of the five robotic mowers managing the site runs up to ten hours a day, mowing its section of the six-acre project. The mowers are self-sufficient and can dock in their stations to charge as needed. The mowers' constant maintenance means that site vegetation is always under 6 inches in height.

As is common with solar projects, we must properly manage onsite vegetation (a fancy way of saying mow the grass) in compliance with the City. Sol regularly reviews different vegetation management options for our projects, which, in addition to traditional grass mowing, now include recent industry innovations such as native habitat, sheep grazing, and robotic mowers.

Ultimately the decision to proceed with robots came down to a combination of sustainability, economics, and a desire to better understand how robots would perform in the field. Although the robotic mowers are not 100% carbon neutral, they were the most effective and most sustainable solution to properly manage the project. We're always excited to incorporate a new strategy to our vegetation management portfolio, which includes a growing number of pollinator habitats and now, robots.



About Rock Falls

Sol Systems installed the Rock Falls project in late 2020 with the Illinois Municipal Electric Agency (IMEA). Through a 20-year power purchase agreement, Sol Systems developed the project with zero upfront costs and helps IMEA place solar on the grid while diversifying its energy supply. This 1 MWac ground mount project spans over 6 acres on the city's land and produces approximately 1,780,200 kilowatt hours each year, providing enough power to serve 170 Rock Falls residents. This project helps IMEA offset 850 tons of carbon each year.

About Sol Systems

Sol Systems is a leading national solar energy firm with an established reputation for integrity and reliability across its development, infrastructure, and environmental commodity businesses. To date, Sol has developed and/or financed over 1 GW of solar projects valued at more than \$1 billion for Fortune 100 companies, municipalities, counties, utilities, universities, and schools. The company also actively shapes and trades in environmental commodity and electricity markets throughout the United States. The company was founded in 2008, is based in Washington, D.C., and is led by its founder. Sol Systems works with its team, partners, and clients to create a more sustainable future we can all believe in. For more information, visit <https://www.solsystems.com/>

COMPANY NEWS

Sol Systems Hires to Scale North American Footprint

September 16, 2021

Today, Sol Systems announces the addition of industry veterans Ray Henger, as Chief Development Officer, and Phil Priolo as Vice President of Risk Operations. The addition of Henger and Priolo comes on the heels of Sol Systems closing a corporate investment and the launch of a \$1 billion solar infrastructure and impact fund with global investor KKR.

Henger and Priolo bring over 50 years of industry and development experience to Sol Systems. The hires will enable Sol Systems to grow its North American footprint to meet the growing demand for integrated renewable energy infrastructure and community impact solutions.

“Ray and Phil are exactly the type of leaders Sol needs as the company scales to meet the sustainability and impact requirements of our customers,” said Sol Systems’ CEO, Yuri Horwitz. “They will be critical to our plans to rapidly expand our development and environmental commodity management businesses as we focus on developing sustainable energy infrastructure with impact.”

Henger leads Sol Systems’ integrated development, finance and delivery teams. Prior to Sol Systems, Henger served as Chief Development Officer at sPower where he managed 70 professionals across the development, permitting, real estate, origination, and strategy teams. During his time at sPower, the company doubled in size and expanded its pipeline from 10 GW to 18 GW. Before joining sPower, Henger served as the Chief Financial Officer for OwnEnergy. Prior to that, he held previous roles at Credit Suisse as a Managing Director in the Power and Renewables Investment Banking Group.



Ray Henger
Chief Development
Officer



Phil Priolo
Vice President of
Risk Operations

“I’m excited to join Sol Systems because it’s a driven team building an impact focused renewable energy business, prioritizing the environment, customers, and employees,” said Henger. “Sol Systems’ integrated sustainability platform is uniquely positioned in the industry for growth and to provide corporate buyers and customers with innovative and tailored solar energy infrastructure and impact solutions.”

Priolo leads Sol Systems’ risk and operations team and is responsible for its corporate risk and governance structure and implementation. Priolo joins the company after 15 years at Exelon Corporation. While at Exelon, he held roles in credit and risk where he developed and implemented Exelon’s credit risk policy, negotiated long term structured transactions, and monitored its \$5B credit portfolio.

“I’m excited to be joining a entrepreneurial organization like Sol,” said Priolo. “Sol Systems is at the forefront of the green power revolution and poised for continued growth and development.”

COMPANY NEWS

N Solar and Cozad Cut the Ribbon at City's New Solar Energy Facility

August 17, 2021

Today, the City of Cozad and N Solar cut the ribbon on a 2.4 MWdc solar energy system that will provide power directly to the city's electric utility. The system is located at 2nd and Monroe Streets will provide enough electricity to power 400 homes annually.

Although the City contracts its power through Nebraska Public Power District, it can generate up to 2.4 MWdc of its power on its own, opening the possibility for the City to add solar energy to its portfolio. The City's utility will purchase energy from the array at a fixed-price over a 30-year period providing energy savings and protection from price volatility present in a typical retail electricity contract.

We are excited to partner with N Solar on our solar energy system and bring even more affordable and clean energy to our customers," said Nikki Schwanz, Cozad City Administrator. "By working together, we are able to provide clean power to our community in a cost-effective way."

Incorporating low cost, renewable power into a City's energy portfolio represents a financially efficient and attractive strategy for Cozad to attract businesses. Cozad's Development Corporation helped to drive this project forward for the City. According to Jen McKeone with CDC, "We are already seeing industries look at us because we have added a green energy component to our utility mix. This will be a great tool for economic development."

The project was developed by N Solar, a three-company coalition consisting of Mesner Development, GenPro Energy Solutions, and Sol Systems, that provides energy solutions



to municipal utilities and power districts throughout Nebraska.

Sol Systems, a Washington-DC based solar energy developer, financed the system through its joint venture with investment firm Capital Dynamics, who will serve as the long-term owner and operator of the system.

"Cozad will greatly benefit from 30 years of low-cost, clean energy at a price protected against inflation," said Anna Noucas, Director of Originations at Sol Systems. "The City was a fantastic partner and are part of the growing number of forward-thinking municipalities that and leaders who value solar as a key part of their present and future energy strategy."

GenPro Energy Solutions, a renewable energy construction firm based in South Dakota, provided construction for the array, which began in November 2020 and reached commercial operation last month. GenPro will also provide maintenance on the system throughout its life.

Molly Brown, Executive Vice President of Energy Development at GenPro Energy Solutions said "After several years of project development and finding the right solution for the City of Cozad, we're excited to add Cozad to the growing number of municipal utilities who understand both the environmental and economic development benefits of distributed solar generation. Having a solar farm sited within the community it serves can be a source of pride for the Cozad community for years to come."

COMPANY NEWS

About N Solar

N Solar is a three-company partnership designed to provide every Nebraska community with the opportunity for clean energy integrated with local public power districts and municipal utilities. N Solar comprises Nebraska's Mesner Development in partnership with GenPro Energy Solutions in site development and construction, and Sol Systems in financing, ownership, and power purchase agreements. To date, this team has developed, constructed and financed over 19 megawatts of solar in Nebraska.

About Sol Systems

Sol Systems is a leading national solar energy firm with an established reputation for integrity and reliability across its development, infrastructure, and environmental commodity businesses. To date, Sol has developed and/or financed over 1 GW of solar projects valued at more than \$1 billion for Fortune 100 companies, municipalities, counties, utilities, universities, and schools and provides services to nearly 17,000 customers across the US. The company was founded in 2008, is based in Washington, D.C., and is led by its founder. Sol Systems works with its team, partners, and clients to create a more sustainable future we can all believe in. For more information, visit <https://www.solsystems.com>.

About Genpro Energy Solutions

GenPro Energy Solutions is an energy service organization, with a global depth of experience in solar and energy efficient technologies. GenPro partners with businesses, municipalities, utilities, state and national governments on projects that range from energy efficient lighting systems to development of utility-grade solar energy farms. Fully certified solar design team including: NABCEP, SEI and ASES. GenPro currently serves 200+ energy-related dealers in North America. They are listed among Solar Power World Magazine's "Top 500 Solar Contractors" for the past five consecutive years.

About Mesner Development Co.

Mesner Development Co. is a real estate development firm specializing in affordable and workforce housing. Its owners, Cliff and Kathy Mesner, are both attorneys practicing in Central City, Nebraska. In addition to housing, the Mesners have helped several communities develop community solar.

SOL SYSTEMS

AROUND THE INDUSTRY



October 18 – Environmental Markets Association - Carbon Taxes v. Carbon Markets

Sol Systems Director of Trading Christian Hofer co-authored a position piece for the Environmental Markets Association on the design of carbon markets.



November 4 – ACORE Grid Forum - Centering Environmental Justice in the 21st Century Grid

Sol Systems CEO Yuri Horwitz will join a panel of experts to discuss the future of our energy infrastructure as it relates to societal impact and environmental justice.

CONTACT US

If you have any questions about this information or wish to receive our quarterly newsletter via email, please contact our team. We would love to hear from you.

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