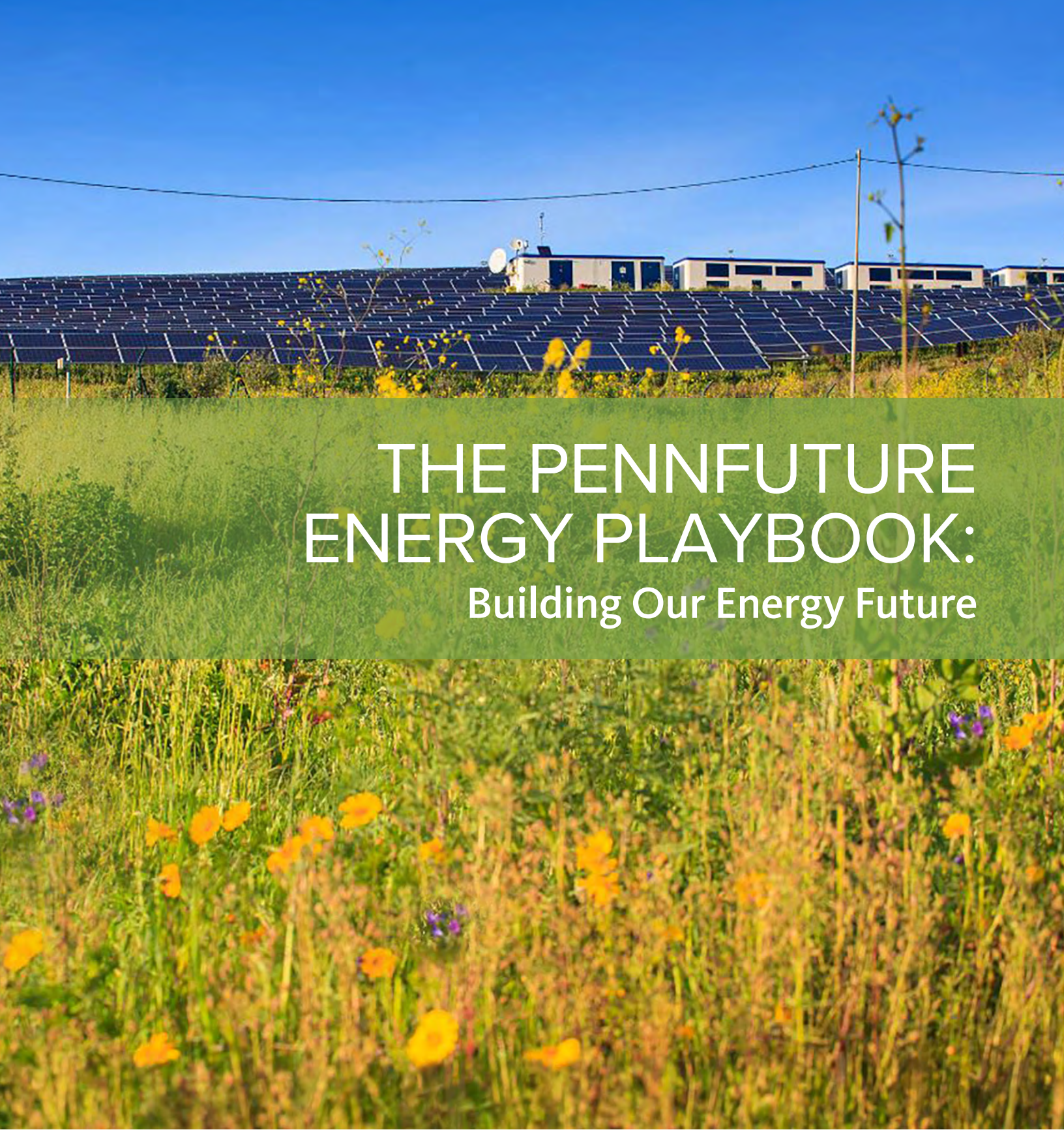


THE PENNFUTURE ENERGY PLAYBOOK:

Building Our Energy Future

PennFuture

August 2026

Author: Donna Kohut, Policy Manager for Sustainable Economics

Acknowledgements

Thank you to the report team that provided knowledge, revisions, and additional support. And special thanks to Rob Altenburg, Senior Director for Energy and Climate for lending his expertise on the grid.

About PennFuture

Citizens for Pennsylvania's Future (PennFuture) is a member-supported, statewide environmental not profit, leading the fight for an equitable, job-creating state economy by advancing clean air, pure water, and climate change solutions through legal advocacy, policy engagement, and empowering all Pennsylvanians.

PennFuture has stood at the forefront of major environmental milestones in Pennsylvania as a bold and vigilant defender of communities against pollution and environmentally harmful policies.

We have offices across Pennsylvania, including Harrisburg, Pittsburgh, Philadelphia, Erie, and the Poconos.

TABLE OF CONTENTS

Clean, Innovative Energy Solutions to Power the Economy of the Future

This playbook is a direct response to the economic and environmental policy inertia in Harrisburg. The cost of clean energy and battery storage continues to drop while the financial price and environmental costs of extracting and burning fossil fuels continue to rise. Yet, Pennsylvania's economic development and political leadership relentlessly invest in fracked gas, petrochemicals, and attracting new energy-intensive industries.

In the following pages, PennFuture lays out a path to meaningful progress, which begins by reinvesting in the electricity infrastructure and signature industries that are already here and by enabling and promoting the clean energy solutions that are transforming neighboring states.

As data center development raises electricity bills across the state, the grid is coming under greater scrutiny—both the transmission infrastructure and generation capacity. Rather than defaulting to the position of "more gas now," the playbook lays out the case for maximizing the efficiency of existing infrastructure and enabling the development and connection of renewable energy and battery storage.

Our vision zeroes in on the policy challenges facing solar development across the Commonwealth. The crux of the issue is a lack of community solar enabling legislation that would allow communities to tap into local solar arrays to lower their electricity bills and create new jobs that circulate money in the local economy. Thoughtful solar policies can also facilitate deployment of PV panels on the countless rooftops of warehouses and distribution centers that populate the landscape and enable farmers to develop solar arrays to generate energy and additional income while harvesting energy alongside food.

For decades, Pennsylvania has underinvested in coal communities. As the industry declines, so to have local economies, leaving communities to struggle under a lack of tax revenue for vital resources—like schools and roads—and strive to slow the trickle of population loss. The moonscape of abandoned mine lands (AMLs) and poisoned streams makes it challenging to invite investment, but it is possible for these brownfields to lead to brighter futures. With access to grid infrastructure and roads onsite, AMLs could open the door for these energy communities to power the region once again through solar and long-term battery storage development. Generating energy, income, and pride, clean energy projects can also attract new businesses and investment to communities too long forgotten.

Finally, this playbook offers a vision of industrial decarbonization that can ultimately lead to reusing the tens of shuttered coal-fired power plants found across the state to establish eco-industrial parks. With forward-thinking policy, Pennsylvania can enable, promote, and incentivize existing facilities to adopt energy efficiency strategies and electrification technologies to reduce emissions, lower costs, and become better neighbors. At the same time, our economic development entities can develop plans and tools to cluster industries to share resources, energy, and costs. This innovative industrial vision can revitalize communities through economic diversification and environmental rehabilitation.

PennFuture puts forth this playbook to demonstrate that there is another way forward, one that leads to a new energy economy powered by clean energy, energy efficiency strategies, and decarbonization technology. Pennsylvania can shake free its overreliance on fossil fuels, do right by coal communities left behind, and lead the nation in innovation and clean energy. A prosperous, healthy, and sustainable future is possible. Join us.

CHAPTER 1: Resilient and Sustainable: Creating a Modernized Grid

Update the Alternative Energy Portfolio Standard

- Pass legislation that requires 35% of electricity to be renewable.

Create a strategic plan for microgrids

- Direct PEMA, PUC, and DEP to jointly develop a plan that assesses supply vulnerabilities and prioritizes public safety.
- Investigate opportunities to protect low-income and environmental justice communities.
- Incentivize microgrids to be designed to integrate renewable generation and storage.
- Set statewide targets for microgrid deployment.
- Develop dedicated funding streams to support microgrid deployment.

Expedite deployment of energy storage projects

- Establish a permit fast track for storage projects to ensure storage projects can connect to the grid quickly.
- Encourage PJM to reform its capacity market to fully value the dispatchability of storage.
- Expand Act 129 to include storage as an eligible peak demand measure, enabling EDCs to count storage dispatched during the top 100 peak hours toward Act 129 compliance targets.
- Pass the "Clean Infrastructure Siting and Speed Act":
  - Establishes fast-track permitting for new renewable energy production, storage, and transmission that sets clear environmental safeguards.

Set storage target for the state

- Update PA Solar Future plan with new targets that include battery storage as a component.
- Set a goal of achieving 10% solar or 11 GW by 2035, strategically linking 25% of projects to battery, achieving 1,500 MW.

Incentivize improved reliability at existing gas plant sites

- including weatherization and co-location with renewables or storage, allowing existing sites to increase their value as capacity resources without increasing pollution.

CHAPTER 2: A New Dawn for Communities: Shining a Light on Distributed Generation and Solar Energy

Pass Community Solar enabling legislation

- Expand access to clean energy for individuals who cannot benefit from residential solar, including renters and those living in buildings unsuitable for solar panel installation.
- Ensure that small subscribers and low-income customers have access to community solar.
- Require PUC ensure that community solar bill credits are appropriately valued.
- Implement prevailing wage and labor standards for the construction of these facilities.

Perform a study regarding the local tax impacts of grid scale solar installations

- Assign this project to the DCED, which collects data on local taxes.

Incentivize solar development on previously impacted, commercial, or industrial properties, prioritizing:

- Brownfields and reclaimed mines.
- Rooftops of warehouses, fulfillment centers, and large government buildings.

Expand tax incentives for solar development

- Provide a sales tax exemption for farmers purchasing solar system equipment needed to install solar arrays on their property.
- Provide property tax exemptions on the added value of solar installations that prove to be viable agrivoltaics operations.

Update statewide legal definitions of land uses

- Establish a statewide definition of agrivoltaics.
- Ensure that agrivoltaics systems are considered an agricultural use.

CHAPTER 3: Transforming Liabilities into Assets: Solar Development in the Coal Fields

Develop a roadmap and tools for developing solar on future shuttered mines, including:

- A long-term visioning project that consults with a wide range of stakeholders, including businesses and residents that call the coal fields home.
- Create and implement a long-term plan that lays out the resources available to attract and fund solar and storage projects on mine lands and effectively communicates the economic and environmental benefits for the local communities.
- Establish a solar and battery storage development target for AMLs:
  - Develop a 1,500 MW of solar and battery storage on AMLs by 2035.
- Reform DCED Energy Program to include solar on AML and battery storage to meet aforementioned targets.
- Create DCED financial incentives specifically designed for deploying solar on AMLs.

Pass Community Solar enabling legislation

- Expand access to clean energy for individuals who cannot benefit from residential solar, including renters and those living in buildings unsuitable for solar panel installation.
- Ensure that small subscribers and low-income customers have access to community solar.
- Require PUC ensure that community solar bill credits are appropriately valued.
- Implement prevailing wage and labor standards for the construction of these facilities.

CHAPTER 4: Brownfields to Bright Futures: Alternative Visions for Redeveloping Coal-Fired Power Plants

Develop a comprehensive new vision for redeveloping coal-fired power plants that does not default to transitioning old facilities into gas-fired power plants

- Establish a repurposing task force for coal plants.
- Create a brownfield inventory oriented specifically towards the redevelopment of shuttered coal plant properties, including developing solar and battery storage.

- DCED must create a playbook specifically dedicated to these uses and how to transform a coal-fired power plant into those uses.
- Engage Team PA on a project that provides a new narrative for the future of redeveloped coal plant sites highlighting the long-term economic potential that solar energy development, battery storage, and other sustainable uses offer former coal communities across the state.

Develop financial tools specifically designed to encourage comprehensive redevelopment of shuttered sites in such a way as to diversify the local economy, strengthen the regional supply chain, and expand access to clean energy and battery storage

- Issue funding, incentives, or mandates for public or private reinvestment in coal communities, often through new electricity infrastructure projects.
- Offer larger tax abatements for remediating former coal plant properties.

CHAPTER 5: Revamping Our Legacy: Decarbonizing Pennsylvania's Industrial Might

Promote sustainable development by leveraging environmental standards attached to financial resources

- Subsidies for low-carbon steel production or other manufacturing.
- Expand lending mechanisms, subsidies, tax credits, and equipment rebates.

Provide funding specifically for repurposing shuttered coal-fired power plants

- Create a brownfield inventory oriented specifically towards the redevelopment of shuttered coal plant properties, including developing solar and battery storage.
- Offer larger tax abatements for remediating former coal plant properties.
- Funds for remediation, grid, and rail improvements.
- Funds specifically for eco-industrial park development.

Establish a new vision for former coal-fired power plant sites and host communities

- Leverage public-private relationships to explore eco-industrial park design and potential impacts to local tax bases and regional supply chains.
- Develop long-term economic plan that helps to guide priorities for and distribution of resources to former coal-fired power plant host communities and local officials.
  - Include transition support for workers, primarily focused on training or education.
- Develop a new narrative for the future of redeveloped coal plant sites highlighting the long-term economic potential that solar energy development, battery storage, eco-industrial parks, and other sustainable uses offer former coal communities across the state.

Green procurement schemes for public infrastructure projects

- Leverage demand-side market power for state infrastructure projects.
- Set embodied carbon limits on materials sourced for public projects.
- Create financial incentives to source materials from low-carbon vendors.

The Path from Decline to Prosperity: A Healthy, Resilient, and Sustainable Future for Pennsylvania

Amid a backdrop of rapidly shrinking federal funds for renewable energy development and industrial decarbonization projects, Pennsylvania's electrical grid infrastructure and industrial facilities are aging. Electricity prices and greenhouse gas emissions are rising. While the Commonwealth is at the crux of overlapping crises intensified by decades of underinvestment in modernization and overinvestment in fossil fuels, it remains laser-focused on attracting new energy-intensive industries to create a new market for fracked gas, calling it "innovation".

However, the actual innovation required to strengthen Pennsylvania's energy and economic systems for the long-term includes grid modernization, clean energy development, brownfield redevelopment, and the decarbonization of Pennsylvania's signature industries. It is long past time for reinvestment in the struggling backbone industries of today and reimagining the infrastructure abandoned by declining industries of yesterday. The technological solutions exist. Pennsylvania policymakers must gather the political will to craft and pass effective policy solutions and make the financial investments that leverage cheap, clean technology to address the overlapping energy and affordability crises.

Throughout this playbook, PennFuture will demonstrate how smart policy, planning, and well-designed financial tools can make this vision a reality. We begin by shoring up existing grid and energy generation infrastructure by making them efficient and resilient. Any additional capacity introduced to the grid must come from renewables and battery storage, which can be deployed quickly and cheaply, especially with reforms to PJM's queue. These efforts will reduce emissions, maximize the grid, and create jobs that are part of the new energy economy, including developing solar at grid-scale and community solar levels.

Currently, Pennsylvania lacks meaningful solar policy. The first step to expanding solar development is to update the state's renewable portfolio standard from today's paltry 0.5% requirement. In addition, we must finally pass community solar enabling legislation. That is the keystone of energy independence and increased energy resilience for regions and individual communities. Once legislation is passed, solar can also be deployed on smaller parcels of abandoned mine lands (AMLs), lowering energy costs and creating jobs for economically depressed communities. Similarly, farmers will be empowered to lease land to generate additional income for their businesses and energy for their neighbors. And in conjunction with passing complementary legislation incentivizing solar deployment on warehouse rooftops, it could be possible to power nearly one million Pennsylvania households.[1]

Lastly, this report recognizes that Pennsylvania's pride in its industrial history can get in the way of enabling, promoting, and incentivizing innovative technologies that would help to decarbonize some of the most egregious polluters in the state. Industry and policymakers alike will likely highlight the high upfront costs required to modernize or replace equipment, but it is not an impossible obstacle to overcome. Some energy efficiency strategies cost little, and others can be made more affordable with targeted financial assistance. By creating decarbonization policy, financial tools, and a comprehensive vision that leverages our unique industrial heritage, both Pennsylvania and its signature industries can signal to the market that they are investing in the future of the state and their companies.

The first steps on the path from decline towards prosperity are clear—implement policy that advances clean energy technologies, energy efficiency, and modernization of the existing grid and power generating facilities; and establish financial tools that facilitate the success of these policies.

[1] *Solar on Warehouses*, KEYSTONE RESEARCH CENTER, https://keystoneresearch.org/solar-on-warehouses/ (last visited Apr. 14, 2026).

Resilient and Sustainable: Creating a Modernized Grid

PROBLEM:

Our power grid operator, PJM Interconnection, is at a crossroads where projected growth from data centers and other large loads is creating pressure to keep aging fossil plants online and fast-track massive new gas-fired generation that will lock in decades of pollution, even as less expensive clean energy projects have struggled to get timely approval for interconnection. Our grid operator's market design and planning processes are structurally biased toward incumbent fossil fuel generation—capacity market rules reward fossil plants, and transmission planning hasn't kept pace with the need to interconnect more clean generation.

Underlying this issue is that Pennsylvania's energy fleet is primarily gas, which historically has struggled to keep up with demand, especially in responding to extreme weather events. Currently, it is not set up to respond to the increases in demand required by large loads like data centers.

SOLUTIONS:

The foundation of a sustainable economy, an economy that balances the present needs of society with the needs of future generations, is a modernized and diverse energy grid—a bulk power system that is reliable, affordable, clean, and long-lasting. To achieve this 21st century grid, we must build smarter, not necessarily bigger or more of the same unreliable fossil fuel infrastructure. Instead, it requires deploying the cheapest energy to the grid first, increasing stability by adding energy storage, and maximizing the reliability and resiliency of existing infrastructure. Modernizing the grid with clean energy technology makes not only economic but environmental sense, and it requires thoughtful policies that intentionally transform our energy system.

Prioritize Cheaper Renewable Energy to the Grid

In 2026, the Independent Fiscal Office issued a report citing natural gas prices as the leading driver in increases on Pennsylvania's electricity bills in 2022,[2] and given that 58.3% of Pennsylvania's energy mix is gas[3], every kilowatt-hour (kWh) not generated by renewables is a kWh subject to the costly boom and bust cycle of fossil fuel markets. Cleaning up the grid by moving grid-scale renewable energy and battery storage projects quickly through the PJM queue is a vital first step towards modernization. Specifically, photovoltaics—or solar panels—are a mature technology, having been successfully manufactured and deployed for decades across both national and international markets.[4] The price of solar continues to decrease, while the cost of extracting fossil fuels and building the infrastructure required to burn it continues to increase.[5] At a time when the basic costs of living—including the consumer cost of energy—are rising higher every day, it's important that we leverage proven clean technologies, like solar, to make the grid more affordable, as well as reliable.

The foundation of solar policy rests on two basic types of power generation: grid-scale and distributed generation. These types of deployment differ based upon where the solar panels connect to the grid. They also differ in the amount of land needed, the amount of energy generated, and how the economic benefits are distributed.

Generally speaking, grid-scale projects are the large solar facilities that deliver energy to the transmission grid and are optimized for maximum power output and economies of scale. This results in a lower cost to build and operate—saving us all money—but the larger systems require more land and face a more complicated interconnection process, so they may take longer to develop.

Distributed generation, on the other hand, may include rooftop solar on homes and businesses, community solar projects (in states that have enabled such projects), and other smaller scale projects. These are connected to our utilities' distribution networks so they generate power closer to where it is consumed, reducing congestion. Distributed solar provides resilience during grid disruptions (especially when paired

---

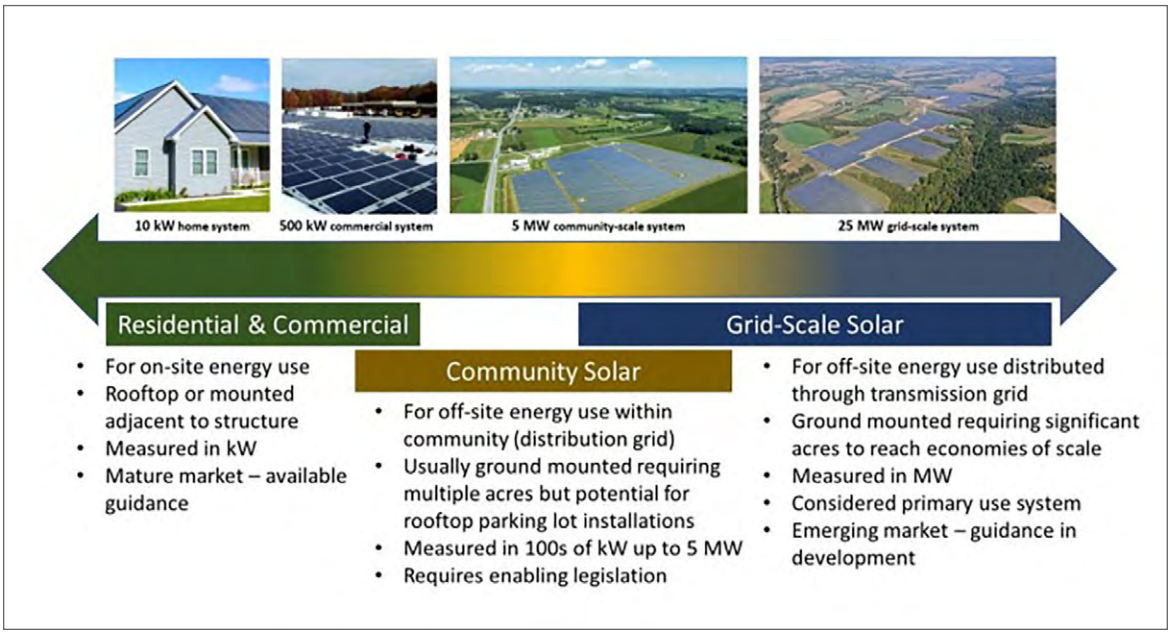
2 Pa. Independent Fiscal Office, Pennsylvania Electricity Update (Feb. 2026), at 1, https://www.ifo.state.pa.us/download.cfm?file=Resources/Documents/Electricity_Update_RB_2026_03.pdf

3 *Id.*, at 3.

4 Pa. Dep't. of Environmental Protection, *Pennsylvania's Solar Future Plan* (Nov. 2018), at 1, https://files.dep.state.pa.us/energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/Pollution%20prevention%20and%20Energy%20assiatance/SolarFuture/Plan/PAsolarFuturePlanBookletWebfile.pdf.

5 Bobby Noble, *5-year waits and rising costs: How demand is redefining the gas turbine market*, UTILITYDIVE (Mar. 23, 2026), https://www.utilitydive.com/news/5-year-waits-and-rising-costs-how-demand-is-redefining-the-gas-turbine-mar/813385/?utm_source=Sailthru&utm_medium=email&utm_campaign=Issue:%202026-03-23%20Utility%20Dive%20Newsletter%20%5Bissue:83044%5D&utm_term=Utility%20Dive.

with battery storage), empowers individual energy choice, generates more jobs per kilowatt installed, and keeps electricity dollars in local communities.[6] It may also avoid the siting and land-use challenges that grid-scale projects sometimes face. (We will do a deeper dive into the potential of distributed generation in Chapter 2.)



PA DEP, *Assessment of Solar Development on Previously Impacted Mine Lands in Pennsylvania* (May 7, 2024), 12, available at https://greenport.pa.gov/elibrary/GetDocument?docId=8421405&DocName=ASSESSMENT%20OF%20SOLAR%20DEVELOPMENT%20ON%20PREVIOUSLY%20IMPACTED%20MINE%20LANDS%20IN%20PENNSYLVANIA.PDF.

While Pennsylvania cannot single-handedly reform the regional interconnection process, it has full control over the state and local permitting landscape, which is currently a mess. Renewable energy and storage projects navigate a patchwork of municipal zoning rules, inconsistent review timelines, and overlapping agency jurisdictions with no guarantee of a predictable outcome. A solar or storage project that is technically and financially viable can stall for months waiting on approvals that vary wildly from one township to the next and are often faced with NIMBY ("Not In My Backyard") complaints couched as environmental concerns. This uncertainty discourages developers and investors, pushing clean energy dollars to neighboring states that have established clear, consistent siting and permitting pathways.

Pennsylvania needs to exercise the authority it has. This means establishing a unified permitting framework with firm timelines, consolidating redundant review processes, and embedding strong environmental safeguards into the process from the start. It also means pairing that framework with meaningful financial incentives that signal to the market that the Commonwealth is serious about deploying clean energy, not just talking about it. State agencies, like the Department of Community and Economic Development and the Department of Environmental Protection, can provide financial support and regulatory clarity the industry needs to reach the grid at the speed this moment demands. Legislative action would provide even greater certainty and durability to communities and industry for the long term.

---

6 *NYSERDA, NY-Sun: How Community Solar Works*, https://www.nyserda.ny.gov/All-Programs/NY-Sun/Community-Solar/How-It-Works/ (last visited Apr. 20, 2026); see also US Dep't of Energy, *Resilient Distribution Systems Powered by Solar Energy*, https://www.energy.gov/cmei/systems/resilient-distribution-systems-powered-solar-energy (last visited Apr. 20, 2026); US Dep't of Energy, *Solar Integration: Distributed Energy Resources and Microgrids*, https://www.energy.gov/cmei/systems/solar-integration-distributed-energy-resources-and-microgrids (last visited Apr. 20, 2026); US EPA, *Distributed Generation of Electricity and its Environmental Impacts*, https://www.epa.gov/energy/distributed-generation-electricity-and-its-environmental-impacts (last updated Mar. 4, 2026).

Additionally, Pennsylvania can accelerate renewable deployment in the Commonwealth by passing an updated energy portfolio standard, legislation that is designed to drive the construction of solar and other renewable energy projects by increasing the percentage of renewable energy in our mix. Scalability is one of the primary drivers of solar's affordability – the larger the project, the lower the cost per kWh, which is what makes the economic case for increasing the renewable standard straightforward: renewables are now the cheapest source of new electricity.[7]

Pennsylvania's Alternative Energy Portfolio Standard (AEPS)—the law that requires utilities to source 8% of our retail electric sales from clean "Tier I" sources (including 0.5% from solar photovoltaic systems)—has not been meaningfully increased since 2004. Meanwhile, Maryland requires 50% from their clean "Tier I" by 2030,[8] New Jersey required 35% by 2025,[9] and New York, 70% by 2030.[10] While our neighbors have forged ahead, Pennsylvania has stood still, leaving residents and businesses exposed to volatile fossil fuel prices and losing billions in clean energy investment to surrounding states.

Raising the Tier I component of AEPS to 35% by 2035 is not idealistic; it is a bare minimum. It signals that Pennsylvania is a serious energy producing state that understands and wants to be a part of the future of energy. A robust portfolio standard encourages the development of more low-cost clean generation, insulates consumers from volatile fossil fuel prices, provides a more stable investment climate for businesses, and sends a clear signal to clean energy manufacturers that the state welcomes their business.

Finally, while we primarily focus on clean energy's lack of emissions, it is also vital to highlight the fact that it does not require the additional costs or emissions from fuel transportation infrastructure like pipelines or tanker trucks. Once deployed, it's not subject to market fluctuations, or international supplies, or tariffs, or wars. It also does not require water to cool power plants, like gas and coal. Also, these technologies continue to get cheaper and more efficient as time goes on.

These myriad benefits make renewable energy, especially solar in combination with battery storage, Pennsylvania's best bet to remain a competitive energy state for decades to come.

Increase Grid Stability with the Addition of Energy Storage

Energy demands are rising, and the grid is aging. Coal plants are retiring. Gas plants rely on outdated equipment. It is well past time to explore new resources, technologies, and operational approaches to ensure grid stability and reliability as more large loads seek to be added to the grid. Pennsylvania needs to include energy storage as a priority for grid stabilization.

The immediate benefit of energy storage is that it increases the amount of capacity clean and low-cost renewable sources can effectively serve, helping to more rapidly decarbonize the grid. Specifically, batteries can maintain balance within renewable resources that experience variability between supply and demand. In other words, batteries store excess energy generated by solar panels on a sunny day so that same energy can be used at night when the panels are not generating energy.[11] This balancing act is what makes it possible for clean energy to provide electricity 24/7, regardless of the time of day or weather conditions, and it can actually help lower bills for ratepayers in the process.[12]

---

7 Benjamin Storrow & E&E News, *Wind and Solar Energy are Cheaper Than Electricity from Fossil-Fuel Plants*, SCIENTIFIC AMERICAN (June 17, 2025), https://www.scientificamerican.com/article/wind-and-solar-energy-are-cheaper-than-electricity-from-fossil-fuel-plants/.

8 *See* Maryland's Clean Energy Jobs Act of 2019 codified at Md. Code Ann., Pub. Util. § 7-703(25).

9 *See* the New Jersey's Clean Energy Act of 2018 codified at N.J. Stat. Ann. § 48:3-87(d)(2).

10 *See* New York's Climate Leadership & Community Protection Act codified at N.Y. ENVIR CONSER § 75-0101—0119; see also *New York State Climate Action Council*, New York State Climate Action Council Scoping Plan (Dec. 2022), at 1, available at https://climate.ny.gov/Resources/Scoping-Plan.

11 Rocky Mountain Institute, *Clean Energy 101: How Batteries Can Support Grid Reliability* (July 31, 2024), Rmi.org/clean-energy-101-how batteries-can-support-grid-reliability/ (last visited Apr. 29, 2026).

12 PA DEP, *Pennsylvania Energy Storage Assessment: Status, Barriers, and Opportunities* (Apr. 2021), at 1, available at https://files.dep.state.pa.us/Energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/EnergyAssurance/Strategen_PA_Energy_Storage_Assessment_April_2021.pdf.

But perhaps even more important for a state like Pennsylvania is that energy storage systems—like batteries—offer a cost-effective alternative to building more gas-fired power plants in response to reliability and resiliency issues. These systems have the ability to provide "essential reliability services"[13] thanks to their flexibility, adaptability, and ability to regulate power:

- Batteries provide valuable flexibility that helps respond to energy demand because they are able to charge and then discharge in real-time. Consequently, battery response time can be faster than traditional thermal generation power plants, like gas plants.
- Batteries have the ability to "ramp up" quickly, meaning they can increase their power "extremely fast", which is important when adding new energy-intensive customers to the grid.
- Batteries contribute to the stability of the grid by regulating frequency and voltage. This ensures that the system functions within "safe windows of tolerance during regular and emergency conditions." And batteries are able to do this more quickly than traditional thermal generators can.[14]

Because of their myriad capabilities, batteries can offer a "cost-effective alternative to fossil generation and traditional reliability technologies," one which is being used increasingly around the nation and around the world.[15]

Maximize the Efficiency and Reliability of Existing Energy Generation Sources

While we know the myriad benefits of developing a sustainable grid, we must also recognize the hurdles before us—a legislature that favors fossil fuels, a need for basic education on how clean tech works, concern for reliability—the list goes on. We therefore need to be pragmatic in our approach—existing gas plants, no matter how often they fail to meet Pennsylvania's needs, are not shutting down any time soon. The existing plants on the grid will continue to be necessary as Pennsylvania builds out clean energy and storage. Thus, a sustainable energy future must also include plans to make them as clean, efficient, and cost effective as possible.

---

[13] Rocky Mountain Institute, *Clean Energy 101: How Batteries Can Support Grid Reliability* (July 31, 2024), Rmi.org/clean-energy-101-how batteries-can-support-grid-reliability/ (last visited Apr. 29, 2026).
[14] *Id.*
[15] *Id.*

Part of the problem stems from gas-fired generation being unreliable—particularly during winter storms where supply issues can cause many plants to fail at the same time. PJM experienced this phenomenon after Winter Storm Elliott in 2022 when almost a quarter of the generation on our grid failed and 70% of those failures were gas plants.[16] In response, PJM changed the way it counts available capacity and no longer assumes gas plants can deliver 100% of what they were designed to provide.[17] Because this makes less capacity available on the market, we spent more money to acquire the capacity we need. Those costs are then passed along to consumers, and in response, PJM and many policymakers are trying to fast track the construction of even more gas plants. In the end, this build-out does not solve the problem; it instead locks in the same fuel supply vulnerabilities and tethers consumer bills to a volatile commodity market outside of the control of the state to manage.

The real lesson of Winter Storm Elliott was that the plants we have are ill-equipped for the extreme weather conditions we will face more frequently due to climate change. With a 70% failure rate during the storm, the problem was not capacity—or how much the plant could deliver—in an abstract sense. It was a lack of facility weatherization, unreliable fuel supply, and a lack of basic resilience.

This is why building new gas plants designed to run 365 days a year does not address the demonstrated problem. Adding more unreliable plants and vulnerable fuel supplies will ultimately lead to a continuation of electricity shortages that occur on a handful of days every few years that have tangible impacts on businesses and communities. Building more and bigger facilities will not solve that problem; the new gas plants aren't designed to sit idle waiting to be called upon to run in an emergency. Instead, if these plants do not find enough customers to buy their generation, they will fail economically and become stranded assets lingering in the local communities. If they do find customers, the problem is not necessarily solved—unless the need for that new load can be curtailed in an emergency, we still won't have surplus generation to address emergency situations because that new energy generated will already be spoken for by the new customers.

Instead of building more fossil fuel plants, a more effective strategy would be to make existing plants more reliable. Investing in reasonable improvements in their accredited capacity will make more capacity available in the market and lower capacity prices without building new plants. If existing gas plants in Pennsylvania were to improve their accredited capacity by an average of 12% through increased investment in weatherization, co-location of other generation or storage, or other similar methods, that would have the same impact on the capacity market as adding more than 3 gigawatts of new generation. Crucially, this does not require running the plants more frequently or creating more pollution. The megawatts of generation already exist on the grid; these plants just aren't reliable enough to be counted on for the few days per year when demand it at its peak.

On the contrary, building new generation designed to operate 24/7 is an expensive way to ensure energy is available during peak hours. As we have seen with the transition from coal to gas, building new generation that is not matched with demand tends to force other generation into retirement. And, if the new generation is matched by demand growth, we may not have the desired surplus to cover periods of peak demand.

Energy generation infrastructure, like gas-fired power plants, are designed to last for decades, and therefore will impact our grid, environment, and wallets for the foreseeable future. This is why we must ensure that they are as efficient, clean, and reliable as possible.

---

[16] Rob Altenburg, *What We Learned from the December 2022 Deep Freeze: Don't Rely on Natural Gas When Its Fracking Cold Part 1*, PENNFUTURE (Jan. 24, 2023), https://pennfuture.org/post/What-We-Learned-from-the-December-2022-Deep-Freeze-Dont-Rely-on-Natural-Gas-When-Its-Fracking-Cold-Part-1.

[17] PJM, *Planning: Effective Load Carrying Capability* (ELCC) (Jan. 30, 2026), https://www.pjm.com/planning/resource-adequacy-planning/effective-load-carrying-capability (last visited Apr. 29, 2026).

POLICY RECOMMENDATIONS:

Update the Alternative Energy Portfolio Standard

- Pass legislation that requires 35% of electricity to be renewable.

Create a strategic plan for microgrids

- Direct PEMA, PUC, and DEP to jointly develop a plan that assesses supply vulnerabilities and prioritizes public safety.
- Investigate opportunities to protect low-income and environmental justice communities.
- Incentivize microgrids to be designed to integrate renewable generation and storage.
- Set statewide targets for microgrid deployment.
- Develop dedicated funding streams to support microgrid deployment.

Expedite deployment of energy storage projects

- Establish a permit fast track for storage projects to ensure storage projects can connect to the grid quickly.
- Encourage PJM to reform its capacity market to fully value the dispatchability of storage.
- Expand Act 129 to include storage as an eligible peak demand measure, enabling EDCs to count storage dispatched during the top 100 peak hours toward Act 129 compliance targets.
- Pass the "Clean Infrastructure Siting and Speed Act":
  - Establishes fast-track permitting for new renewable energy production, storage, and transmission that sets clear environmental safeguards.

Set storage target for the state

- Update PA Solar Future plan with new targets that include battery storage as a component.
- Set a goal of achieving 10% solar or 11 GW by 2035, strategically linking 25% of projects to battery, achieving 1,500 MW.[18]

Incentivize improved reliability at existing gas plant sites

- Including weatherization and co-location with renewables or storage, allowing existing sites to increase their value as capacity resources without increasing pollution.

[18] PA DEP, *Pennsylvania Energy Storage Assessment: Status, Barriers, and Opportunities* (Apr. 2021), at 65, available at https://files.dep.state.pa.us/Energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/EnergyAssurance/Strategen_PA_Energy_Storage_Assessment_April_2021.pdf.

A New Dawn for Communities: Shining a Light on Distributed Generation and Solar Energy

PROBLEM:

Pennsylvania's economy is at a pivotal point—the future of the state's economy and reputation as a literal powerhouse will be determined by its willingness and ability to meaningfully develop clean energy. Unfortunately, our government continues to work from the same old road map that leads to fossil fuel expansion at the expense of our economy, our environment, and our communities' health. Neighboring states like New York,[19] New Jersey,[20] and yes even Ohio,[21] are becoming more resilient by embracing clean 21st-century technology—photovoltaics. Meanwhile, Pennsylvania ranks 22nd in the nation for solar capacity installed.[22]

Currently, existing policy gaps unnecessarily limit Pennsylvanians' access to the new energy economy, dissuade financial investment, and ignore valuable low-impact siting opportunities for smaller-scale solar deployment, a form of distributed generation.

[19] Solar Energy Industries Association, *State Spotlight: NY Solar* (Mar. 2026), https://seia.org/wp-content/uploads/2025/03/NewYork.pdf (last visited Apr. 17. 2026).
[20] U.S. Energy Information Administration, *New Jersey: Analysis* (last updated Feb. 19, 2026), https://www.eia.gov/states/NJ/analysis (last visited Apr. 17, 2026).
[21] Solar Energy Industries Association, *State Spotlight: OH Solar* (Mar. 2026), https://seia.org/wp-content/uploads/2025/03/Ohio.pdf (last visited Apr. 17, 2026).
[22] Solar Energy Industries Association, *State Spotlight: PA Solar* (Mar. 2026), https://seia.org/wp-content/uploads/2025/03/Pennsylvania.pdf (last visited Apr. 17, 2026).

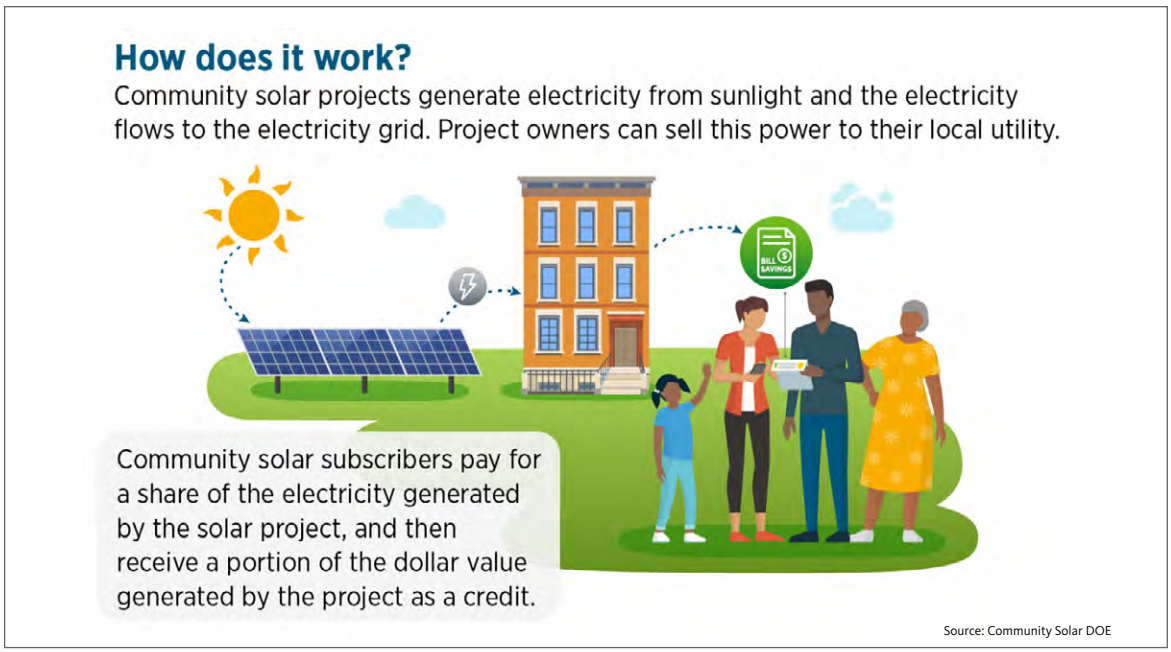
SOLUTIONS:

As discussed in the previous chapter, distributed generation primarily refers to smaller-scale projects that generate electricity to serve the surrounding community, establishing a local energy asset. Distributed generation has a greater economic impact on the local economy when compared to grid-scale projects. The solar development companies tend to be local, hire locally, and the employees tend to spend their wages locally. When paired with battery storage, these projects offer resilience during grid disruptions and act as a source of energy independence, while creating jobs, and reducing electricity bills for local households and businesses.

Solar power as a distributed resource provides a unique opportunity to promote energy independence and improve the economic strength of Pennsylvania communities. Pennsylvania can and should leverage distributed generation systems—which typically connect directly to the end user, whether that is a school, an individual office building, or several industrial facilities[23]—by prioritizing policies that incentivize and prioritize solar distributed generation projects across the Commonwealth.

Community Solar

Community solar refers to a form of distributed generation of solar energy that is rooted in a local market or community. Community members subscribe to a local, centralized solar system[24] and receive credit on their energy bills for a share of the electricity produced by that system.[25] Community solar gives customers the opportunity to purchase or lease part of an off-site solar PV system so that they do not have to install their own system. These solar facilities can generate up to 5 megawatts (MW) of electricity, requiring 5-10 acres per MW.[26]



[23] PennFuture, *Here Comes the Sun: A Municipal Guide to Grid-Scale Solar Siting* (2025), at 5, https://pennfuture.org/Report/Here-Comes-The-Sun-A-Municipal-Guide-to-Grid-Scale-Solar-Siting.

[24] PA DEP, *Assessment of Solar Development on Previously Impacted Mine Lands in Pennsylvania* (May 7, 2024), at 12, https://greenport.pa.gov/elibrary/GetDocument?docId=8421405&DocName=ASSESSMENT%20OF%20SOLAR%20DEVELOPMENT%20ON%20PREVIOUSLY%20IMPACTED%20MINE%20LANDS%20IN%20PENNSYLVANIA.PDF.

[25] Penn State Center for Economic and Community Development, *Potential Economic Impact of Community Solar in Pennsylvania* (Sept. 2020), at 1, available at https://aese.psu.edu/research/centers/cecd/publications/economic-analyses-including-covid-19-analysis/economic-impact/economic-impact-of-community-solar_sept-2020_psu-cecd.pdf.

[26] *Id.*

Pennsylvania's Failing Solar Policies

In 2026, Environment America released a "Solar Permitting Scorecard" that rates each of nation's 50 states solar permitting policies by awarding points based on various criteria. This assessment results in each state receiving a letter rating, A through F. Pennsylvania scored an "F", receiving only 18 points. Let's take a closer look at why.

Specifically, Environment America was awarding points to policies based on their ability to remove obstacles to deploying rooftop solar and home batteries. Some of the criteria they used included, but is not limited to:

- Has the state adopted measures to streamline permitting?
- Does the state limit the ability of homeowners' associations (HOAs) to block or restrict solar energy projects?
- What measures has the state adopted to streamline the inspection process?
- Has the state limited fees on solar energy permits?[a]

Pennsylvania's abysmal rating demonstrates that the Commonwealth has made minimal progress toward enabling and incentivizing clean energy, unnecessarily stifling a fast-growing industry and ignoring barriers that hinder residents' access to cost-saving technology.

[a] Solar Permitting Scorecard, ENVIRONMENT AMERICA RESEARCH & POLICY CENTER (Spring 2026), available at https://publicinterestnetwork.org/wp-content/uploads/2026/03/Solar-Permitting-Scorecard-March-2026-final.pdf.

By enabling Community Solar, Pennsylvanians who are unable to install their own solar panels—renters, low-income households, homeowners with shaded roofs, and others—would be able to access the benefits of clean energy and the associated significant cost savings. It is estimated that a 3 MW facility could create about $90,000 in savings for subscribers annually.[27]

The economic benefits of community solar are not limited to reducing household electric bills. These projects can be built on many different types of properties—from warehouse rooftops to abandoned mine lands to agricultural land. (We will explore these in more detail later.) That is to say that the potential for community solar to serve Pennsylvanians is great because it is flexible and scalable; it can adapt to an individual community's unique character, specific needs, and existing assets.

From construction to operation, the advantages are widespread and significant. In 2020, there were 235 community solar facilities planned, and when combined, these had the potential to generate $1.8 billion and 11,631 jobs during the construction phase.[28] During operation, those projects could support roughly 520 jobs and $83.3 million of economic activity. Those numbers include direct employment with the solar companies, increased patronage of local businesses, workers spending their new income locally, and the lease money earned by landowners.[29] Solar energy is the keystone to ensuring Pennsylvania workers are able to access opportunities for training and employment in the nation's emerging clean energy economy.

Pennsylvania can put itself on the path to becoming a leader in the clean energy future in just a few steps by focusing on community solar projects. First, the Commonwealth must legally enable Pennsylvanians' participation in community solar opportunities. Second, as explained below, incentivizing community solar projects is crucial. Whether located on the rooftop of local warehouses and distribution centers, former mine land, or in a farm field, these distributed generation solar projects can generate and dispatch electricity to the grid, which neighbors are able to use, saving money on their electricity bills.

[27] *Id.*
[28] *Id.*, at 7.
[29] *Id.*, at 14.

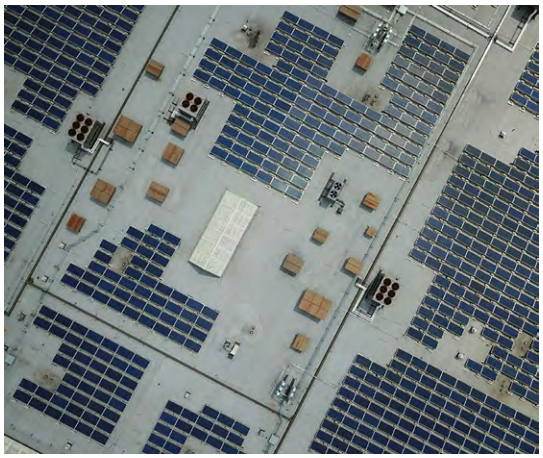
Rooftops to Renewables

Distributed generation is a solar deployment strategy that improves the resiliency of the grid and increases access to clean energy. Distributed generation may look like a homeowner installing solar panels on their roof or, in the case of community solar, a renter purchasing credits to a local solar array.

Net metering is a crucial piece that contributes to the advantages of the distributed generation system. It allows Pennsylvanians with solar panels to send excess electricity back to the power grid and receive credits on their electricity bills. In the face of rising electricity costs due to overreliance on gas, this flexibility is a key advantage of solar energy and the only real incentive that Pennsylvania currently offers to promote solar installation.

Unlike developing large solar arrays, rooftop solar leverages already developed land and does not expand the impact of renewable generation as a land use. While installing solar on a rooftop is not accessible for all Pennsylvanians, there remains a great deal of potential across the state. A recent DEP report cites a 2008 study looking at the rooftop solar potential in Pennsylvania, and it highlighted that there is enough rooftop surface to install more than 27 GW of solar PV panels statewide. That is close to triple the amount we would need to install to reach the 10% by 2030 target.[30] In order to make that plan a reality, it would require deploying solar panels on a total amount of space that is just "a small fraction (less than three-tenths of 1 percent) of Pennsylvania's total land area and less than half of the total abandoned mine lands in Pennsylvania."[31] Meaning, it is more than possible.

Solar on Warehouses



Pennsylvania, especially the Lehigh Valley and Berks County, was at the head of the logistics facility rush. One of the most common questions from community members surrounded by this type of large-scale development is "Why aren't there solar panels on those facilities?" That's an insightful question. All the flat rooftops of logistics facilities—and other industrial and commercial buildings—have the potential to host solar panels and generate electricity for the community and additional income for developers and property owners, providing the opportunity for local residents to reduce their electricity bills. However, these rooftops are not typically designed to hold the weight of solar panels, making them a wasted potential asset. Legislation that requires solar-ready rooftops for future development and incentivizes widespread deployment of solar panels on top of warehouses is smart energy policy and an example of thoughtful economic development. In a state where 581 million square feet of empty rooftops on massive logistics facilities are suitable for solar panels that could generate 9,391 GWh of electricity and power 924,421 homes[32], the solution is clear. Expanding solar on these buildings would help lower electricity costs, increase our clean energy supply, and generate power right here in the Commonwealth.

---

[30] PA DEP & PennFuture, *Pennsylvania's Solar Future Plan* (Nov. 2018), at xvi, available at https://files.dep.state.pa.us/energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/Pollution%20prevention%20and%20Energy%20assiatance/SolarFuture/Plan/PAsolarFuturePlanBookletWeb-file.pdf.

[31] *Id.*

[32] Keyston Research Center, *Solar on Warehouses*, https://keystoneresearch.org/solar-on-warehouses/ (last visited Apr. 14, 2026).

Agrivoltaics

Farmers and agricultural land can play a vital role in resolving Pennsylvania's energy crisis. Solar developers desire reasonably inexpensive land that requires little preparation. Pennsylvania's farming communities are under economic pressure.[33] Rising input costs, unpredictable weather, and volatile markets have made it harder than ever to keep family farms viable. Agrivoltaics—or the collocation of solar power generation and farming practices—is an energy development strategy that provides advantages for farmers, grid stability, energy prices, and local communities.

About 25% of Pennsylvania's land is used for agricultural purposes, and farming contributes $132.5 billion and 593,000 jobs to the state's economy. That is roughly one-in-ten jobs and 6.25% of the gross state product.[34] Sadly, the industry has been losing jobs for the last fifteen years,[35] and many of our farmers are operating on thin margins, making the thought of selling off pieces of farmland to subdivision developers understandably attractive to some. According to a 2025 report from Pennsylvania's Joint State Government Committee, "the biggest threat to farmland is low-density residential development."[36]

Leasing land for solar development offers farmers a new income stream to protect their business and a way to preserve farmland while contributing to Pennsylvania's energy independence. These leases can earn farmers roughly $700-$1,000 per acre per year on average,[37] and the life of a typical solar array could be 30 years. That kind of stable income can mean the difference between solvency and foreclosure, preventing a permanent change in the use of the land away from farming.

Agrivoltaics projects, especially smaller scale community solar projects, can take a variety of forms and provide a variety of ecosystem services.[38] Farmers can diversify their crops, planting shade-tolerant crops beneath the solar panels.[39] Large pollinator gardens are popular because they are relatively easy to care for and may improve the output of existing crops by supporting the local bee population. Plants with especially deep roots enrich topsoil, prevent erosion, and can contribute to groundwater recharge. Livestock grazing beneath the panels is another option, allowing animals—especially sheep—to graze freely and cool off in the shade provided by the panels.[40] Then, when the array has reached its end-of-life decades later, the equipment can be removed, and the land can be traditionally farmed once again.

---

[33] Anna Gustafson, *'A whole other level of stress': How climate change is harming Pennsylvania farmers*, THE PENNSYLVANIA INDEPENDENT (Jan 21, 2025), https://pennsylvaniaindependent.com/economy/farmers-agriculture-climate-change-soil-fire-flooding-drought-legislation/.

[34] A Joint State Gov't Comm'n of Gen. Assembly of the Commw. of Pa., *Agrivoltaic Farming in Pennsylvania: Report of the Advisory Committee* H.R. 224 (2023) (May 2025), at 1, available at https://jsg.legis.state.pa.us//resources/documents/ftp/publications/2025-05-07%20HR224%20AV%20Farming%205.7.25%20web.pdf.

[35] *Id.*

[36] *Id.*, at 2.

[37] Penn State Center for Economic and Community Development, Potential Economic Impact of Community Solar in Pennsylvania (Sept. 2020), at 5, available at https://aese.psu.edu/research/centers/cecd/publications/economic-analyses-including-covid-19-analysis/economic-impact/economic-impact-of-community-solar_sept-2020_psu-cecd.pdf.

[38] "Ecosystem goods and services produce the many life-sustaining benefits we receive from nature—clean air and water, fertile soil for crop production, pollination, and flood control. These ecosystem services are important to environmental and human health and well-being, yet they are limited and often taken for granted." US EPA, *Ecosystem Services Research*, https://www.epa.gov/eco-research/ecosystem-services-research (last visited Apr. 27, 2026).

[39] Tom Daniels & Iris (Zlxln) Chen, *The Use and Potential of Agrivoltaics in the United States*, KLEINMAN CENTER FOR ENERGY POLICY, U. PENN. (Oct. 2025), available at https://kleinmanenergy.upenn.edu/wp-content/uploads/2025/10/KCEP-Digest-83-The-Use-and-Potential-of-Agrivoltaics-in-the-United-States.pdf ; *see also* M. Charles Gould, *The future of farming may be shaded*, MICH. STATE U. EXTENSION (Apr. 20, 2026), https://www.canr.msu.edu/news/the-future-of-farming-may-be-shaded.

[40] Joint State Gov't Comm'n of Gen. Assembly of the Commw. of Pa., *Agrivoltaic Farming in Pennsylvania: Report of the Advisory Committee* H.R. 224 (2023) (May 2025), at 70-76, available at https://jsg.legis.state.pa.us//resources/documents/ftp/publications/2025-05-07%20HR224%20AV%20Farming%205.7.25%20web.pdf.

It is worth noting that Community Solar enabling legislation would allow those farmers interested in leasing to solar developers to continue working and preserving their land with agricultural practices when compared with grid-scale solar projects simply due to the size and scale of the project. Community solar agrivoltaics projects also ensure that the energy generated benefits neighbors and local communities, rather than being shared to the grid and potentially exported to other parts of the state or region. Similarly, because the energy generated stays local, the farmers receive double the benefits from a community solar project—they earn income from leasing their land, and they can receive credits on their own electricity bills.[41]

Developing agrivoltaics incentives isn't just good energy policy. It is a key component of farmland preservation and protecting Pennsylvania's agricultural heritage. Agrivoltaics provide Pennsylvania farmers with the opportunity and technology needed to harvest the power of the sun twice over—feeding our families and the grid.

The examples of distributed generation policies discussed in this chapter are modest asks of our policy makers and yet are vital to propel Pennsylvania forward as a major player in the new energy economy.

POLICY RECOMMENDATIONS

Pass Community Solar enabling legislation

- Expand access to clean energy for individuals who cannot benefit from residential solar, including renters and those living in buildings unsuitable for solar panel installation.
- Ensure that small subscribers and low-income customers have access to community solar.
- Require PUC ensure that community solar bill credits are appropriately valued.
- Implement prevailing wage and labor standards for the construction of these facilities.

Perform a study regarding the local tax impacts of grid scale solar installations

- Assign this project to the DCED, which collects data on local taxes.[42]

Incentivize solar development on previously impacted, commercial, or industrial properties, prioritizing:

- Brownfields and reclaimed mines.
- Rooftops of warehouses, fulfillment centers, and large government buildings.[43]

Expand tax incentives for solar development

- Provide a sales tax exemption for farmers purchasing solar system equipment needed to install solar arrays on their property.[44]
- Provide property tax exemptions on the added value of solar installations that prove to be viable agrivoltaics operations.[45]

Update statewide legal definitions of land uses

- Establish a statewide definition of agrivoltaics.[46]
- Ensure that agrivoltaics systems are considered an agricultural use.

---

[41] *Id.*, at 92.
[42] *Id.*
[43] *Id.*, at 91.
[44] *Id.*, at 92.
[45] *Id.*, at 91.
[46] *Id.*, at 89.

Transforming Liabilities into Assets: Solar Development in the Coal Fields

PROBLEM:

Pennsylvania played a critical role in the Industrial Revolution because of its extensive coal reserves. Mining and coal-fired power plants anchored local economies for generations. But with that industrial legacy, comes a legacy of liabilities as well. The industry was so widespread that roughly one-third of the nation's abandoned mine lands are located in Pennsylvania, forcing about 1.4 million people across the state to live within one mile of an abandoned mine.[47] According to DEP, Pennsylvania remains saddled with 177,000 acres of unreclaimed mine lands,[48] which threaten the health and safety of surrounding communities and depress local economies.

While the decline of the coal mining industry has been ongoing for decades, Pennsylvania has failed to provide economic revitalization plans for host communities, putting them at a disadvantage—the scars of the coal industry making it nearly impossible for them to compete economically and magnifying social, health, and environmental issues. Primarily rural, these communities have experienced "persistent economic distress and poverty for decades."[49] Without a comprehensive economic development plan or the resources to carry it out, residents and workers suffer under conditions of environmental contamination, blight, and limited job opportunities.

---

47 PA DEP, *Assessment of Solar Development on Previously Impacted Mine Lands in Pennsylvania* (May 7, 2024), at 21, https://greenport.pa.gov/elibrary/GetDocument?docId=8421405&DocName=ASSESSMENT%20OF%20SOLAR%20DEVELOPMENT%20ON%20PREVIOUSLY%20IMPACTED%20MINE%20LANDS%20IN%20PENNSYLVANIA.PDF.

48 *Id.*, at 4-5.

49 Ohio River Valley Institute, *Repairing the Damage: Cleaning up the land, air, and water damaged by the coal industry before 1977* (Apr. 2021), at 7, available at https://ohiorivervalleyinstitute.org/wp-content/uploads/2021/04/AML-Report-Dixon-ORVI-V1.1-4.pdf.

SOLUTIONS:

Empowering Coal Communities Through Solar Development

Pennsylvania's abandoned mine lands (AMLs) could play a significant role in transforming and decarbonizing Pennsylvania's energy system and economy. It is possible to convert one of the state's greatest challenges into our biggest asset by developing solar generation and battery storage on these languishing properties. This strategy will reduce energy costs for surrounding economically depressed host communities, reconnect the local economy with its legacy of power generation, provide a pathway for these communities to compete in the clean energy economy, and create local jobs in a high-growth industry. The landscape will be transformed from a scarred moonscape to a solar brightfield that powers revitalization.

AMLs are valuable resources going to waste. These properties can come with some significant benefits including existing transmission lines, substations, and roads; reduced cost of land purchase; reduced construction time; and the ability to reuse poles, towers, and even property easements.[50] As industrial properties, these sites are valuable because these characteristics "make them ideal for the industries of the future,"[51] like clean energy manufacturing and development. With some vision and investment, these economic and environmental liabilities can provide a competitive edge in the energy marketplace, as well as clean energy, tax revenue, and cost savings to surrounding communities.

Pennsylvania does not have a shortage of such opportunities. According to an assessment commissioned by the DEP in 2024, roughly 169,000 acres of AMLs across the state have the potential to host solar facilities.[52] Importantly, a large amount of those properties—43,950 surface acres—lie within 2.5 miles of substations.[53] Building transmission infrastructure is costly, which makes this a highly valuable characteristic when considering developing a property for clean energy generation and energy storage options.

One example of solar development on AML benefiting the surrounding community can be found in Green Township, Beaver County. Four Twelve Renewables opened a solar facility that is made up of 98,000 bifacial solar panels and is expected to generate 66 GWh of electricity. The company has a 15-year power purchase agreement (PPA) with Pennsylvania American Water, and the project's revenue "will be used to provide yearly utility assistance grants to provide basic natural gas, water, wastewater, and electric utility service to low- and moderate-income Southwestern Pennsylvania households undergoing hardship."[54]

Many of the existing parcels of AMLs are relatively small and would be well-suited for smaller community solar projects. With enabling legislation, communities with AMLs could become subscribers to a local system built on the same land that historically powered the industrial revolution. Repurposing the land in this way would offer access to clean power to those who are unable to install their own private panels and provide cost savings to residents who are likely living in an underserved or economically depressed community. Compounding the economic benefits is the additional generation of tax revenue, job creation, and environmental protections garnered from remediation of the AML sites.[55] By developing solar and battery storage on AMLs, we can increase the local communities' tax revenue (and services), improve the reliability and affordability of its electricity service, create jobs, heal the environmental scars of the past, and support coal country's full participation in the new energy economy.

---

50 PA DEP, *Assessment of Solar Development on Previously Impacted Mine Lands in Pennsylvania* (May 7, 2024), at 39, https://greenport.pa.gov/elibrary/GetDocument?docId=8421405&DocName=ASSESSMENT%20OF%20SOLAR%20DEVELOPMENT%20ON%20PREVIOUSLY%20IMPACTED%20MINE%20LANDS%20IN%20PENNSYLVANIA.PDF.

51 ReImagine Appalachia, *ReImagining the Shuttered Coal Plant: The Handbook* (Feb. 2025), at 18, *available at* https://reimagineappalachia.org/wp-content/uploads/2025/02/ReImagining-the-Shuttered-Coal-Plant_The-Handbook.pdf.

52 PA DEP, *Assessment of Solar Development on Previously Impacted Mine Lands in Pennsylvania* (May 7, 2024), at 39, https://greenport.pa.gov/elibrary/GetDocument?docId=8421405&DocName=ASSESSMENT%20OF%20SOLAR%20DEVELOPMENT%20ON%20PREVIOUSLY%20IMPACTED%20MINE%20LANDS%20IN%20PENNSYLVANIA.PDF

53 *Id*., at 29.

54 Joint State Gov't Comm'n of Gen. Assembly of the Commw. of Pa., *Agrivoltaic Farming in Pennsylvania: Report of the Advisory Committee* H.R. 224 (2023) (May 2025), at 28, *available at* https://jsg.legis.state.pa.us//resources/documents/ftp/publications/2025-05-07%20HR224%20AV%20Farming%205.7.25%20web.pdf.

55 PA DEP, Assessment of Solar Development on Previously Impacted Mine Lands in Pennsylvania (May 7, 2024), at 34, https://greenport.pa.gov/elibrary/GetDocument?docId=8421405&DocName=ASSESSMENT%20OF%20SOLAR%20DEVELOPMENT%20ON%20PREVIOUSLY%20IMPACTED%20MINE%20LANDS%20IN%20PENNSYLVANIA.PDF.

Re-Envisioning a Bright Future on Brownfields: The Role of Team PA and the DCED

Pennsylvania's economic development entities must discard their myopic focus on fracked gas as the primary means of revitalizing the communities left behind by the coal industry and realize their potential for becoming critical players in the new energy economy that is powered by clean energy and made resilient with battery storage. For Pennsylvania to fully realize this opportunity to rebuild the energy economy of coal country from the ground up, the state needs a comprehensive, long-term vision that prioritizes these efforts and ensures that the host communities receive the maximum benefits alongside strong government policies to support remediation and redevelopment. This requires two complementary projects.

First, this strategy requires refocusing Team PA and reforming the DCED's incentive programs. Former coal mining communities are fertile ground for demonstrating Pennsylvania's innovation and adaptability. Centering the potential of these formerly mined properties in a long-term economic development project focused on converting these brownfields into bright futures would make for a compelling addition to Team PA's economic development strategies. Team PA holds great influence over the direction of the state's economic direction, and consequently, a project that describes a clean energy future built on previously mined lands alongside financial incentives offered by the DCED would make for an actionable strategy that could change the trajectory of these communities and Pennsylvania's energy system. A state-sponsored vision would also signal to the clean energy market that coal country is a safe region to invest in. Together, Team PA and the DCED are able to demonstrate the long-term economic impacts of renewable energy development coal regions across the state, shifting the role of these forgotten regions into the heroes of Pennsylvania's clean energy future.

Second, we need policies that address the challenges faced when remediating and redeveloping these sites. Pennsylvania has a limited number of regulatory and policy mechanisms in place to facilitate solar development on AMLs. DEP's recommendations from a 2024 assessment are outlined below. Their recommendations are comprehensive and address policy, outreach, program, and process issues. Specifically, by prioritizing just a few of these recommendations, the current administration would generate meaningful momentum: enabling Community Solar, establishing a goal for solar development on mine lands, and creating a tax incentive program for solar projects on former mine lands. When combined with the influence of Pennsylvania's economic development teams, these recommendations could clear the way for and build momentum behind developing solar energy and battery storage on mine lands, bringing the new energy economy to life.

Recommendations to Advance Solar Development on Previously Minded Lands in the Commonwealth of Pennsylvania

Category	Recommendation	Cost	Timeframe
Policy and Incentives	1.1 Pass legislation enabling Community Solar Pennsylvania	$	🕘🕘
	1.2 Establish Goal for Solar on Previously Mined Sites	$	🕘
	1.3 Previously Mined Land Solar Grant Fund	$$$	🕘🕘
	1.4 State tax abatement or rebate program for qualifying projects on previously mined sites	$$$	🕘🕘
Education and Outreach	2.1 Incorporate content specific to solar development on previously mined sites into ongoing municipal outreach activities.	$	🕘
	2.2 Private Sector Power Purchase Agreement (PPA) Program	$	🕘
Program Development	3.1 AML Parcel Information and Mapping Tools	$$	🕘🕘
	3.2 Previously Mined Land Build-Ready Site Program	$$$	🕘🕘🕘
Investment of BIL/IRA Funds	4.1 Use of Assessment Findings to Guide Investment of BIL/IRA Funds	$	🕘
Process Improvements	5.1 Single Point of Contact for Solar Projects on Previously Mined Lands	$$	🕘
	5.2 Examine if policies and procedures can be modified within constraints of state or federal regulation.	$	🕘🕘🕘

Team PA

Pennsylvania's primary governmental economic development entities, the Team Pennsylvania Foundation (Team PA) and the Department of Community and Economic Development (DCED), have done little to address the economic depression of coal country. Both Team PA and the DCED are called upon to offer visions, plans, and financial tools to grow the state's economy. Team PA is a nonpartisan nonprofit organization that collaborates with the state government, and the DCED facilitates and distributes grants, loans, and financial incentives for economic development in the state. When the fracked gas boom began, both Team PA and the DCED trained their focus on supporting fracked gas development as the dominant economic development strategy for the state, leaving coal communities that had been struggling for decades behind.

Team PA has consistently centered the gas industry in its various projects including:

- Tax breaks for the Shell cracker plant in Beaver County that has brought dozens of environmental violations and economic disappointment;
- The Cross-Sector Collaborative[b] that advocated for a gas-fueled hydrogen hub[c] that never came to fruition;
- The 2025 visioning project called "Highways, Homesteads, and Fields"[d] that could only imagine a future for Pennsylvania fueled by fracked gas; and
- The recently released "Energy and Artificial Intelligence Road map"[e] that promotes the strategy of attracting Big Tech to create a new market for fracked gas.

Today, Team PA is partnering with the Pennsylvania Utility Commission (PUC) on its latest project—the PATER Study—which will "evaluate recently retired power generation sites in Pennsylvania, prioritizing those that would be most cost-effective to bring back into 'productive use' due to their existing transmission infrastructure."[f] Based on its previous conclusions, it is likely that Pennsylvania can anticipate the results of this study leading to more gas-powered electricity generation.

Meanwhile, the DCED is a state agency that aims to "cultivate a resilient economy"[g] and has access to a wide range of programs and financial tools to carry out its goals. It oversees the flow of grants, loans, and other economic initiatives to ensure that Pennsylvania is an attractive place for businesses to invest and grow. Unfortunately, the DCED consistently leverages its Energy Program to "attract energy-intensive industries" and facilitate Team PA's gas-focused schemes. The agency does have some programs that offer incentives for solar or "alternative" sources of energy, but they stand to be improved to increase accessibility and use. Rather than facilitating meaningful and long-term economic revitalization in coal country and prioritizing clean energy development in the coal fields, these two entities collaborate on how to support the gas industry, which has contributed to population and job loss in the Marcellus Shale region.[h]

[b] Team PA, *Cross-Sector Collaboratives*, https://teampa.com/impact/cross-sector-collaboratives/ (last visited Apr. 21, 2026).
[c] Team PA, *Team PA Submits Hydrogen Hub Application for Decarbonization Network of Appalachia (DNA)*, (Apr. 10, 2023), https://teampa.com/2023/04/team-pa-submits-hydrogen-hub-application-for-decarbonization-network-of-appalachia-dna/.
[d] Team PA, *Highways, Homesteads, and Fields: Imagining Scenarios to 2050*, TEAM PENNSYLVANIA (2025), *available at* https://teampa.com/wp-content/uploads/2025/03/Highways-Homesteads-and-Fields_-Imagining-Scenarios-to-2050v2.pdf.
[e] Team PA, *Team Pennsylvania's Energy, Data Center, and Artificial Intelligence Roadmap*, https://teampa.com/energy/edcai-roadmap/ (last visited Apr. 21, 2026).
[f] Team PA, *PA PUC, Team Pennsylvania, and Shapiro Administration Partner on Pennsylvania Accelerated Transmission and Energy Redevelopment Study* (Feb. 19, 2026), https://teampa.com/2026/02/press-release-transmission-and-energy-redevelopment-study/.
[g] PA DCED, Pa. *Department of Community & Economic Development Fact Sheet* (Nov. 25, 2025), *available at* https://dced.pa.gov/download/pa-department-of-community-economic-development-fact-sheet/?wpdmdl=128337.
[h] Ohio River Valley Institute, *Frackalachia Update: Peak Natural Gas and The Economic Implications for Appalachia* (Aug. 2023), at 13, *available at* https://ohiorivervalleyinstitute.org/wp-content/uploads/2023/08/Frackalachia-Update-FINAL.pdf.

The implications of success push well into the future. With thoughtful and effective regulations, policies, and financial incentives in place, the potential for developing solar power on mine lands does not end with the 169,000 acres of abandoned properties.[56] Today, the state hosts 64,000 additional acres of active surface mines and another 20,000 acres of coal refuse sites. While there is no guarantee that all of these sites are appropriate for solar development, "these sites may be more attractive since they are larger, contiguous sites with one ownership group." [57] The coal industry will continue to decline as renewable energy rises, and Pennsylvania can begin planning for a cleaner, greener future today—a future that revitalizes and strengthens the self-reliance and resilience of coal communities. By getting to work on the AMLs of today, Pennsylvania can ensure a brighter future for more brownfields in coal country tomorrow.

[56] *Id.*, at 5. It is worth noting that the assessment was clear about the fact that these 169,000 acres were not filtered for potential site challenges like steep slope or access to infrastructure.
[57] *Id.*, at 6.

Reclaiming Contaminated Mine Land

In December of 2025, Rush Township in Centre County announced a solar project that will reclaim 2,000 acres of contaminated mine land. It's estimated that this project will generate 265 MW—enough electricity to power 200,000 homes annually, bring in $5 million in tax revenue for the local school district, and $700,000 in funds directly for the county. In addition to the economic benefits, this project aims to rehabilitate 2,000 acres of toxic land threatening the health of the local community.

The current plan includes planting pollinators, as well as conducting soil and water quality testing. The developers have committed to neutralizing soil contaminants with lime.

As PennFuture's Vice President of Legal Advocacy Abby Jones said of the project, "By redeveloping polluted lands for clean energy production, we can transform environmental liabilities into long-term economic and environmental assets, all while helping to lower rising energy costs for Pennsylvanians."[i]

Photo of the existing contaminated minelands that will be converted to solar under the recently approved Black Moshannon solar project in Rush Township, Centre County PA.

[i] PennEnvironment, *Approved Rush Township solar project to reclaim 2,000 acres of toxic mineland for clean energy development* (Dec. 10, 2025), https://environmentamerica.org/pennsylvania/media-center/approved-rush-township-solar-project-to-reclaim-2000-acres-of-toxic-mineland-for-clean-energy-development/.

POLICY RECOMMENDATIONS

Develop a roadmap and tools for developing solar on future shuttered mines, including:

- A long-term visioning project that consults with a wide range of stakeholders, including businesses and residents that call the coal fields home.
- Create and implement a long-term plan that lays out the resources available to attract and fund solar and storage projects on mine lands and effectively communicates the economic and environmental benefits for the local communities.
- Establish a solar and battery storage development target for AMLs:
  - Develop a 1,500 MW of solar and battery storage on AMLs by 2035.
- Reform DCED Energy Program to include solar on AML and battery storage to meet aforementioned targets.
- Create DCED financial incentives specifically designed for deploying solar on AMLs.

Pass Community Solar enabling legislation

- Expand access to clean energy for individuals who cannot benefit from residential solar, including renters and those living in buildings unsuitable for solar panel installation.
- Ensure that small subscribers and low-income customers have access to community solar.
- Require PUC ensure that community solar bill credits are appropriately valued.
- Implement prevailing wage and labor standards for the construction of these facilities.

Brownfields to Bright Futures: Alternative Visions for Redeveloping Coal-Fired Power Plants

PROBLEM:

The coal industry has been in decline for two decades, and nearly all of Pennsylvania's coal-fired power plants have been shuttered because of the demonstrated failing economics of coal energy in the United States. They are in various states of closure: mothballed, "cold and dark," or simply languishing without a plan. Even though the state anticipated these closures, officials failed to devise an economic offramp or comprehensive long-term redevelopment plan for these properties. Consequently, these facilities cast a shadow over residents and workers—ever-present reminders of an industry that abandoned them.

Because these facilities were built and operated with the sole purpose of generating power and are associated with decades of industrial and cultural history, as well as environmental degradation, it can be difficult to shift public and market perception of the site. Encouraging developer interest can be especially challenging because there may be limited interest in and motivation to repurpose this type of brownfield.[58] To move forward, Pennsylvania needs a comprehensive re-envisioning and reinvestment strategy for shuttered coal-fired power plants. These brownfields are challenging to remediate and redevelop and require a long-term timeframe and the ability and willingness to navigate the complex decommissioning process, on top of creating a comprehensive redevelopment plan.[59] Just establishing the owner of the property can be difficult,

[58] Romer, Jim, "A Comprehensive Approach to Repurposing Retired Coal Power Plant Sites: Transforming Liabilities to Assets", ELECTRIC POWER RESEARCH INSTITUTE (May 2019), at 4-1.

[59] ReImagine Appalachia, *ReImagining the Shuttered Coal Plant: The Handbook* (Feb. 2025), at 14, *available at* https://reimagineappalachia.org/wp-content/uploads/2025/02/ReImagining-the-Shuttered-Coal-Plant_The-Handbook.pdf.

for example, depending upon the site's history—it may be the utility or a hedge fund, or it may have been sold to a redevelopment firm. Easements and transportation infrastructure can also pose challenges, adding to the lengthy timeline for redevelopment.[60]

However, rather than devoting resources towards exploring comprehensive, creative, and sustainable options for repurposing shuttered coal plants, the DCED markets the redevelopment potential and energy infrastructure of these properties through the lens of strengthening the gas industry's hold on the state's economy. In 2018 the DCED leveraged federal funding to publish the first of six "Shuttered Coal-Fired Power Plant Redevelopment Playbooks", which highlight significant data and characteristics of each individual site in the interest of promoting redevelopment. Written and released after the Marcellus Shale fracking boom, these Playbooks focus on transitioning these facilities into gas power plants or gas-based petrochemical manufacturing facilities, like the Shell cracker plant in Beaver County.

The series of Playbooks, therefore, signal to the marketplace that Pennsylvania is not seriously considering a comprehensive shift away from fossil fuels for these properties. By building gas plants on these sites, surrounding communities would be locked into another generation of an economic monoculture, leaving residents and workers vulnerable to another decline in this volatile industry. While the DCED and Team PA have had ample opportunities and resources at hand to change the trajectory of the local economies, they chose to ignore the potential that the state's inventory of shuttered coal-fired power plants could play in the clean energy economy, setting communities behind economically and environmentally by decades.

SOLUTION:

Considering the number of mothballed and decommissioned coal-fired power plants in Pennsylvania, the state has an opportunity to transform the scars of the past into sustainable assets for the future. Rather than allow these properties to remain "cold and dark", contributing to blight in already depressed and isolated communities, Pennsylvania can innovate, adapt, and transform them into anchors of the new energy economy by redeveloping them with new industry and clean power generation.

Decommissioning Options

Terms	Definitions
Retirement/Shutdown	Announce retirement/closing and cease power production.
Mothballing	Deactivate and preserve the production facility for possible future use or sale.
Decommissioning	Remove equipment and materials. Close or comply with permits, as necessary. Demolish buildings.
Remediation	Clean up contamination to support new use.
Redevelopment	Repurpose or construct a new site or repower for another generation technology.

Source: Replicated from Pacific Northwest National Laboratory, Business Models for Coal Plant Decomissioning at https://www.pnnl.gov/main/publications/external/technical_reports/PNNL-31348.pdf

[60] *Id.*, at 15.

As referenced in the previous section, the myriad challenges within the redevelopment process demonstrate why the DCED and Team PA could play a critical role in transforming these properties—the process requires vision, planning, and funding. The full redevelopment process entails a degree of remediation of the site—cleaning up residual toxins and environmental hazards—and potentially tearing down parts of the facilities located on the property. This work is time-consuming and expensive.

To that end, it can be especially challenging to decommission these facilities in rural areas, where there is not much economic incentive for the owners to complete the decommissioning process, and instead, opt to maintain "cold and dark" facilities. A statewide redevelopment playbook that outlines a wide range of creative options would help to attract investment, remediation, and redevelopment by expanding the notion of what is possible. An effective redevelopment playbook would be visionary and comprehensive, outlining potential uses like eco-industrial parks, energy parks, or solar and battery storage. Due to the rural character of many of these locations, clean energy generation could be complementary to the local outdoor recreation industry—solar power and battery storage can be utilized for power stations for EV charging stations and outfitters near newly established local bike and water trails or to create new music and event venues that capitalize off of outdoor recreation tourism.[61]

Complementary state policy could help. Other states across the nation are faced with similar issues created by the decline of the coal industry, but while Pennsylvania seems to turn its head to focus on gas development, others have taken meaningful steps to clear the path towards a brighter future for these properties and communities. Across the nation, seven states enacted 14 bills that facilitate the economic transition of former coal plant workers and the surrounding community between 2019 and 2022. Six more advanced legislation during that same time period.[62]

Pennsylvania was not among them, and it does not currently have a plan in place to transition any of the 5,000 remaining coal workers[63] in the state.

By Team PA shifting their influence and resources towards a comprehensive statewide redevelopment plan for shuttered coal-fired power plants—alongside effective redevelopment policy—it could create confidence in the site development marketplace, by demonstrating Pennsylvania's investment in the future of these properties and their regional economies. Promoting these new visions and demonstrating an openness to repurposing with the underlying feature of clean energy development could lead to informed and targeted decision-making focused on specific outcomes that will enhance the economic return to developers and the community through such avenues as jobs and tax revenue.[64] While site owners may see shuttered plants as liabilities that they need to get off the books, municipal officials view them differently: as potential sources of much-needed tax revenue and sources of job creation.[65] This shift in perspective begins by transforming the primary purpose of the site from coal-fired generation to powering the innovative new energy economy.

Pennsylvania's coal legacy left two distinct categories of scarred landscape: the mines where coal was extracted and the power plants where it was burned. Both are liabilities today, burdening communities with contamination, blight, and lost tax revenue. While the coal fields provide space to build solar arrays,

---

[61] *Id.*, at 21 ("Utilizing natural features for sustainable landscaping and stormwater management. Integrating wetland restoration and reforestation efforts into project design may be an interesting option for also offsetting greenhouse gas emissions from industrial uses.").

[62] Claire Wang, Sam Mandell, Jeremy Richardson, & Ujay Varadarjan, *Coal Community Transition Policy in Action: How State Legislation is Supporting Coal Communities and Workers as the Economy Shifts to Clean Energy*, RMI (2022), at 9, *available at* https://rmi.org/insight/ensuring-an-inclusive-clean-energy-transition/.

[63] Andrew Seidman, *Power Play: How a coal magnate won over Harrisburg—and Josh Shapiro's administration*, THE PHILADELPHIA INQUIRER (Apr. 1, 2026), https://www.inquirer.com/politics/pennsylvania/a/josh-shapiro-coal-energy-environment-20260401.html?query=power%20play%20and%20andrew%20seidman (last visited Apr. 20, 2026).

[64] Romer, Jim, "A Comprehensive Approach to Repurposing Retired Coal Power Plant Sites: Transforming Liabilities to Assets", ELECTRIC POWER RESEARCH INSTITUTE (May 2019), at 4-1.

[65] *Id.*, at 5-1.

shuttered coal-fired power plants offer a unique, multifaceted opportunity: large industrial footprints with grid interconnection rights, heavy infrastructure, and the capacity to anchor more complex and resilient redevelopment like eco-industrial parks.

POLICY RECOMMENDATIONS:

Redeveloping coal-fired power plants does not have a one-size-fits-all solution. Each site is unique and comes with its own set of challenges and assets.

Based on state level accomplishments across the country between 2019 and 2022, Rocky Mountain Institute summarized the most commonly explored transition policies:[66]

- Developing coal transition plans to guide priorities for and distribution of resources;
- Making requirements to convene or consult with stakeholder advisory groups during transition policy development and/or implementation;
- Providing transition support to workers, primarily focused on training or education; and
- Providing economic planning and implementation assistance for coal communities.

Develop a comprehensive new vision for redeveloping coal-fired power plants that does not default to transitioning old facilities into gas-fired power plants

- Establish a repurposing task force for coal plants.[67]
- Create a brownfield inventory oriented specifically towards the redevelopment of shuttered coal plant properties, including developing solar and battery storage.
- DCED must create a playbook specifically dedicated to these uses and how to transform a coal-fired power plant into those uses.
- Engage Team PA on a project that provides a new narrative for the future of redeveloped coal plant sites highlighting the long-term economic potential that solar energy development, battery storage, and other sustainable uses offer former coal communities across the state.

Develop financial tools specifically designed to encourage comprehensive redevelopment of shuttered sites in such a way as to diversify the local economy, strengthen the regional supply chain, and expand access to clean energy and battery storage

- Issue funding, incentives, or mandates for public or private reinvestment in coal communities, often through new electricity infrastructure projects.[68]
- Offer larger tax abatements for remediating former coal plant properties.

---

[66] Claire Wang, Sam Mandell, Jeremy Richardson, & Ujay Varadarjan, *Coal Community Transition Policy in Action: How State Legislation is Supporting Coal Communities and Workers as the Economy Shifts to Clean Energy*, RMI (2022), at 10, *available at* https://rmi.org/insight/ensuring-an-inclusive-clean-energy-transition/.

[67] Romer, Jim, "A Comprehensive Approach to Repurposing Retired Coal Power Plant Sites: Transforming Liabilities to Assets", ELECTRIC POWER RESEARCH INSTITUTE (May 2019), at 8-3.

[68] Claire Wang, Sam Mandell, Jeremy Richardson, & Ujay Varadarjan, *Coal Community Transition Policy in Action: How State Legislation is Supporting Coal Communities and Workers as the Economy Shifts to Clean Energy*, RMI (2022), at 10, *available at* https://rmi.org/insight/ensuring-an-inclusive-clean-energy-transition/.

Revamping Our Legacy: Decarbonizing Pennsylvania's Industrial Might

CC BY 2.0 *Clairton Coke Works in 2013* Roy.Luck

PROBLEM:

The throughline of Pennsylvania's history and pride is its industrial strength. Coal, steel, cement, and manufacturing—all of these industries have shaped the state's economy, environment, and communities. As technology progresses, industries around the world and across the nation are finding ways to decarbonize to reduce their reliance on fossil fuels, improve the air and water quality of host communities, and maintain competitiveness. Unfortunately, Pennsylvania's industry is not capitalizing on this opportunity and lags behind others in the adoption of decarbonizing strategies and technologies, leaving the state's economy competitively vulnerable and its environment at risk.

At times, pride in our industrial history and codependence with fossil fuels obscures a clear-eyed assessment of where these signature industries stand today and how they can evolve to maintain competitiveness and become good neighbors.

SOLUTIONS:

While it may seem daunting to even begin the decarbonization process for Pennsylvania's signature industries, there is good news—the technological solutions exist. The primary challenge is adopting policies and regulations that enable, promote, and incentivize[69] energy efficient and renewable energy technology and equipment. The predominant barrier to adopting decarbonization strategies and technologies for many companies is high upfront investment costs followed by long payback periods. It is possible to increase the affordability and attractiveness of this shift by adapting and increasing investments in existing financial programs; leveraging public procurement, maintaining and expanding technical assistance, and stabilizing regulations that support long-term decarbonization efforts.[70]

Of the wide variety of decarbonization strategies that exist for industry, this chapter will focus on two—energy efficiency and electrification—and share a new vision of development that offers the space and infrastructure that can be leveraged to decarbonize the backbone state's economy.

Energy Efficiency

Until the electricity grid is made more resilient and powered by renewable generation and long-term battery storage, the most cost-effective and efficient decarbonization strategy is to reduce its energy usage. Energy-intensive industries like steelmaking and cement manufacturing consume energy and generate the most emissions when extracting raw materials and during the actual manufacturing process. These emissions are known as "embodied carbon," and they illustrate the tons of carbon emissions that result throughout the entire lifecycle of a material. This lifecycle includes extraction of resources, manufacturing, transportation, using the material in construction projects, and disposal.[71] By using this holistic lens to look at building materials like steel and cement, additional opportunities to reduce emissions, reduce energy consumption, and save money become available.

Energy efficiency can be applied at various scales and stages in industrial processes. For example, it can be applied to individual pieces of equipment, entire manufacturing lines or facilities, and supply chain management or process efficiency.[72] Energy efficiency comes with an added benefit—by reducing industrial energy consumption, clean production becomes more affordable overall.[73]

Waste-heat recovery and combined heat and power (CHP) are examples of facility-scale efficiency strategies. Waste heat recovery is self-explanatory: collect heat that was generated while making a product and use it in another part of the manufacturing process to perform work.[74] CHP, also known as cogeneration, or "co-gen", is the process of collecting both electricity and heat, but from a combustion process, specifically.[75] These co-gen systems are able to roughly double the efficiency of traditional systems that produce heat and generate energy separately.[76] Both of these strategies utilize heat that would otherwise be released into the air, wasting the energy generated and consumed to produce it. CHP is comparatively more efficient than generating heat and electricity separately through on-site fossil fuel combustion and drawing electricity from the grid. Taken a step further, co-locating manufacturing facilities that have complementary resources and needs—one produces the excess heat or electricity that the other one

---

[69] ReImagine Appalachia, *Make it in Appalachia: The Region can be a Hub for Low-Carbon Building Materials*, (June 2025), at 42, *available at* https://reimagineappalachia.org/wp-content/uploads/2025/06/Make-it-in-Appalachia_The-Low-Carbon-Building-Supply-Chain.pdf.

[70] *Id.*, at 44-47.

[71] Audrey Rempher, Rebecca Esau, & Madeline Weir, *Embodied Carbon 101: Building Materials*, RMI (Mar. 7, 2023), https://rmi.org/embodied-carbon-101/ (last visited Apr. 16, 2026).

[72] Jeffery Rissman, ZERO-CARBON INDUSTRY: TRANSFORMATIVE TECHNOLOGIES AND POLICIES TO ACHIEVE SUSTAINABLE PROSPERITY 85-86 (Colombia University Press, 2024).

[73] *Id.*, at 85.

[74] *Id.*, at 92.

[75] *Id.*, at 93.

[76] ReImagine Appalachia, *Growing Clean and Efficient Manufacturing* (Oct. 28, 2020), at 17, *available at* https://reimagineappalachia.org/wp-content/uploads/2020/10/ReImagine-Appalachia_Manufacturing_10-28-2020-1.pdf.

requires—can produce an efficient and mutually beneficial system that reduces the need for direct access to the grid.[77]

Benefits of energy efficiency strategies in heavy industry include, but are not limited to, increased productivity, reduced exposure to energy price volatility, reduced electricity capacity charges, reduced maintenance costs, and improved workplace health and safety.[78] On the business side, investments in energy efficiency strategies signal a long-term commitment to the economic health of the company. Being willing to undertake these projects that have lengthy payback periods of potentially 10 years or more demonstrates that ownership is prioritizing the company's long-term viability.

Pennsylvania policymakers must recognize the value of taking an efficiency-first perspective to the state's signature industries and enact policies that enable, promote, and incentivize this decarbonization strategy. The technologies have been deployed at scale elsewhere, and the state can play a key role in driving adoption by developing effective financial tools and thoughtful policies.[79] By implementing energy efficiency strategies, companies are able to "minimize production costs, promote energy savings, and increase profitability in the long run."[80]

Electrification

Library of Congress

Electrification is one of the most effective decarbonization strategies for heavy industry because burning fossil fuels to generate the volume and intensity of heat they require is a primary driver of their emissions (and contributes to the overall embodied carbon of their final product). Nationally, heat makes up 91% of industrial process fuel consumption. Consequently, to be most effective, electrification strategies must focus on producing heat from electricity.[81] An added benefit of adopting electrical technology is that it eliminates primary causes of heat loss or waste because it does not produce exhaust emissions from combustion, nor does it require evaporating moisture from fuel. There are electrical technologies, like induction, that area able to directly heat materials, effectively limiting heat loss from furnace openings.[82] In this way, electrification can magnify the efficacy and benefits of waste heat reuse or CHP.

Of course, electricity is only as clean as its source, which is why every effort to decarbonize the grid is meaningful. It is also true that industrial electrification would increase electricity demand, however, facilities can reduce energy needs through demand response and flexibility.[83] Combining electrification with energy efficiency strategies is highly effective and can reduce the overall amount of energy required, thus reducing overall emissions.

---

[77] ReImagine Appalachia, *Make it in Appalachia: The Region can be a Hub for Low-Carbon Building Materials*, (June 2025), at 14, *available at* https://reimagineappalachia.org/wp-content/uploads/2025/06/Make-it-in-Appalachia_The-Low-Carbon-Building-Supply-Chain.pdf.

[78] Jeffery Rissman, ZERO-CARBON INDUSTRY: TRANSFORMATIVE TECHNOLOGIES AND POLICIES TO ACHIEVE SUSTAINABLE PROSPERITY at 101.

[79] *Id.*, at 103.

[80] ReImagine Appalachia, *Make it in Appalachia: The Region can be a Hub for Low-Carbon Building Materials*, (June 2025), at 15, *available at* https://reimagineappalachia.org/wp-content/uploads/2025/06/Make-it-in-Appalachia_The-Low-Carbon-Building-Supply-Chain.pdf.

[81] JEFFERY RISSMAN, ZERO-CARBON INDUSTRY: TRANSFORMATIVE TECHNOLOGIES AND POLICIES TO ACHIEVE SUSTAINABLE PROSPERITY at 134.

[82] *Id.*, at 154.

[83] *Id.*, at 131.

A primary example of electrification technology is the electric arc furnaces (EAF) used in some steelmaking facilities. Steelmaking requires high amounts of intense heat for smelting and melting metals, which makes it incredibly energy-intensive. Steel is a ubiquitous construction material, and as such, it contributes significantly to global greenhouse gas emissions. Approximately 8% of global energy consumption is used for steelmaking,[84] and roughly 70% of CO_2 emissions come from the use of blast furnaces.[85] Emissions can be drastically reduced, however, if a facility adopts the use of electric arc furnaces, which use an electric arc to produce and emit intense heat in order to use scrap or direct reduced iron to make steel. The EAF heats the metal using both radiant heat and the "electrical resistance within the metal itself."[86]

RISE PA Program – The Commonwealth Cannot Rely on Federal Funds to Decarbonize

Pennsylvania recently announced projects awarded funds through the RISE PA program (Reducing Industrial Sector Emissions in Pennsylvania). This program will distribute a total of $396 million in federal funds from the Environmental Protection Agency's Climate Pollution Reduction Grants program, which was created through the 2022 Inflation Reduction Act. The grants are designed to fund small-, medium-, and large-scale decarbonization projects in Pennsylvania's industrial sector, which is responsible for 30% of the state's total greenhouse gas emissions.[j]

Projects are eligible for RISE PA if they "reduce industrial sector emissions through industrial electrification, efficiency and process emissions reductions, switching to low-carbon fuels, installing on-site renewable energy, utilizing carbon capture and storage, and reducing fugitive emissions from natural gas and oil systems and coal mining."[k]

The first awardees announced in early April 2026 included 14 small-scale projects with the total grants adding up to $5 million. The expected impact of these smaller projects is expected to be significant, potentially contributing up to more than $500,000 in energy costs, and preventing the release of 5,055 metric tons of greenhouse gas emissions in the first year of project implementation. The projects range from installation of efficient lighting, to replacing outdated HVAC units, to installing on-site solar panels.[l]

A second round of 31 awardees that included medium- and large-scale projects were announced later in the month. The investments total more than $267,000,000, and according to the Governor's office, "these projects will save Pennsylvania businesses more than $3.1 million in annual energy costs and reduce more than 1.3 million metric tons of carbon dioxide equivalents within its first year of implementation."[m] More grant rounds are on the way.

The RISE PA program is an example of what it looks like to enable, promote, and incentivize decarbonization. These projects are possible when government proactively supports industry. Unfortunately, the likelihood of more federal investments in this program is near zero. So, the question is, what is Pennsylvania's plan to continue the momentum to decarbonize our industrial heritage? This progress cannot stop when the RISE PA funds run out.

[j] *Reducing Industrial Sector Emissions in Pennsylvania* (RISE PA), PA DEP ENERGY PROGRAMS OFFICE, https://www.pa.gov/agencies/dep/programs-and-services/energy-programs-office/rise-pa (last visited Apr. 29, 2026).
[k] PA DEP Energy Programs Office, *Reducing Industrial Sector Emissions in Pennsylvania (RISE PA)*, https://www.pa.gov/agencies/dep/programs-and-services/energy-programs-office/rise-pa (last visited Apr. 29, 2026).
[l] PA DEP, *Shapiro Administration Invests Nearly $5 Million to Help Companies Cut Energy Costs and Reduce Air Pollution Across Pennsylvania* (Apr. 1, 2026), https://www.pa.gov/agencies/dep/newsroom/2026-04-01-shapiro-administration-invests-nearly-5-million-to-help-companies-cut-energy-costs.
[m] PA DEP, *Shapiro Administration Invests Nearly $5 Million to Help Companies Cut Energy Costs and Reduce Air Pollution Across Pennsylvania* (Apr. 1, 2026), https://www.pa.gov/agencies/dep/newsroom/2026-04-01-shapiro-administration-invests-nearly-5-million-to-help-companies-cut-energy-costs.

[84] *Id.*, at 13.
[85] *Id.*, at 18.
[86] *Id.*, at 141.

Envisioning a Brighter Future for Shuttered Coal-Fired Power Plants: Eco-Industrial Parks

There is a development vision that can combine many of the strategies discussed in each chapter to improve the state's economic competitiveness while honoring its industrial heritage and cleaning up its toxic legacies—eco-industrial parks. Eco-industrial parks are industrial or mixed-use sites where "co-located businesses share resources to increase efficiency, sustainability, and long-term manufacturing profitability."[87] The potential for clustering industries at eco-industrial parks is nearly endless:

- co-locate a manufacturer with a brewery and a solar array with battery storage;
- co-locate a solar panel manufacturer with a solar panel recycler and power the facilities with solar, wind, and storage; or
- build a kayaking and biking outfitter alongside brewery and outdoor music venue and small museum that pays tribute to the coal industry—all powered by solar panels and batteries.

Pennsylvania has an abundance of sites that could be redeveloped in this way—shuttered coal-fired power plants. As described in Chapter 4, these sites provide access to highly valued characteristics like energy infrastructure, transportation access, water, industrial structures, and grid connections on large tracts of land.[88] With some proactive planning, investment, and outreach, developing eco-industrial parks can strengthen Pennsylvania's supply chain and contribute to industrial innovation.[89]

Because these plants are likely to be located in isolated communities with few if any alternative employment opportunities, it is critical to consider eco-industrial parks as a potential new use—to diversify and shore-up the local economy and regional supply chains. This diversification would build economic resiliency into the local economy so that the greater regional economy is insulated from the decline of any one business or industry, thus preventing catastrophic economic impacts.

A long-term state-sponsored plan to anchor a few regional economies in eco-industrial parks with some dedicated funding behind it would signal that Pennsylvania is prepared and motivated to lead an economic and environmental transition towards a clean economy. This requires inventorying and marketing these sites just as the state would to attract developers for any large-scale, capital-intensive project. With more than 20 shuttered facilities,[90] there is no shortage of opportunities.

Energy efficiency and electrification are the most important decarbonization strategies available to industry. Additional support from policymakers and economic development entities can expand access to these strategies to ensure that Pennsylvania industrial manufacturers can compete in the clean economy.

Combined with on-site clean power generations to fuel the redeveloped plant sites, while those plant sites can house the manufacturing, recycling, and storage facilities that support a growing clean energy supply chain. We can shape the future of this sector with a vision that mitigates pollution, decreases costs, and improves profit margins.

---

87 ReImagine Appalachia, *Make it Appalachia: Transforming Shuttered Coal Plants into Eco-Industrial Parks*, (June 2025), at 2, https://reimagineappalachia.org/wp-content/uploads/2025/06/Make-it-in-Appalachia-Transforming-Shuttered-Coal-Plants-into-Eco-Industrial-Parks.pdf.

88 ReImagine Appalachia, *Make it in Appalachia: The Region can be a Hub for Low-Carbon Building Materials*, (June 2025), at 17, available at https://reimagineappalachia.org/wp-content/uploads/2025/06/Make-it-in-Appalachia_The-Low-Carbon-Building-Supply-Chain.pdf.

89 Pacific Northwest National Laboratory, *Redeveloping Coal Power Plants: Energy-Related Industrial Facilities* (EV Manufacturing) (Apr. 2024), at 1, *available at* https://www.pnnl.gov/sites/default/files/media/file/PNNL-SA-193660-CoaltoEVManufacturing.pdf.

90 Sierra Club, *Is There a Coal Plant Near You?*, https://www.sierraclub.org/coal/coal-plant-map (last visited Apr. 17, 2025).

POLICY RECOMMENDATIONS:

Promote sustainable development by leveraging environmental standards attached to financial resources

- Subsidies for low-carbon steel production or other manufacturing.
- Expand lending mechanisms, subsidies, tax credits, and equipment rebates.[91]

Provide funding specifically for repurposing shuttered coal-fired power plants

- Create a brownfield inventory oriented specifically towards the redevelopment of shuttered coal plant properties, including developing solar and battery storage.
- Offer larger tax abatements for remediating former coal plant properties.
- Funds for remediation, grid, and rail improvements.
- Funds specifically for eco-industrial park development.

Establish a new vision for former coal-fired power plant sites and host communities

- Leverage public-private relationships to explore eco-industrial park design and potential impacts to local tax bases and regional supply chains.
- Develop long-term economic plan that helps to guide priorities for and distribution of resources to former coal-fired power plant host communities and local officials.
  - Include transition support for workers, primarily focused on training or education.
- Develop a new narrative for the future of redeveloped coal plant sites highlighting the long-term economic potential that solar energy development, battery storage, eco-industrial parks, and other sustainable uses offer former coal communities across the state.

Green procurement schemes for public infrastructure projects

- Leverage demand-side market power for state infrastructure projects.
- Set embodied carbon limits on materials sourced for public projects.
- Create financial incentives to source materials from low-carbon vendors.

[91] JEFFERY RISSMAN, ZERO-CARBON INDUSTRY: TRANSFORMATIVE TECHNOLOGIES AND POLICIES TO ACHIEVE SUSTAINABLE PROSPERITY at 102.

CONCLUSION

This goal of this playbook is to call the environmental movement to enter and operate within this space of overlapping economic and environmental crises with a sense of hope, creativity, and offerings of effective and tangible solutions. It has never been clearer that the barriers to progress and solutions are not technological, but human. Similarly, this project demonstrates that there are economic and industrial alternatives to the status quo offered by existing economic development entities, and these alternatives must be taken seriously. In the end, Pennsylvania needs leadership.

The combination of economic policy, environmental regulation, and commonsense legislation laid out in this playbook can effectively kickstart the energy transition in Pennsylvania and lay the foundation for long-term stability and strength. The need to act is urgent. Pennsylvanians are choosing between paying their energy bills and paying their mortgages. Coal communities struggle to stay intact and afloat. Industrial workers fear for both their safety and their next paychecks.

PennFuture is eager to see policymakers leverage these ideas to coordinate an effective policy response to the overlapping crises Pennsylvanians are experiencing, and we look forward to collaborating with partners and stakeholders to ensure that the fossil fuel transition uplifts—not abandons—the energy communities and industrial workers historically left behind.[92] This playbook identifies the intersection of economic interests of communities with the environmental interests of our movement—so that the people struggling under industrial decline have a healthier and more prosperous way forward.

To be clear, as we have outlined ideas and visions, we are not attempting to speak for the impacted communities; they must have a voice in their own future. We share these ideas and policy recommendations to help get the process started and offer potential inspiration for what is possible outside Pennsylvania's default fossil fuel paradigm.

Together, we can work to transform Pennsylvanian's energy system, make its industrial base more competitive, and improve the conditions of workers and communities. Let us take the first steps on the path together. Join us.

[92] Claire Wang, Sam Mandell, Jeremy Richardson, & Ujay Varadarjan, *Coal Community Transition Policy in Action: How State Legislation is Supporting Coal Communities and Workers as the Economy Shifts to Clean Energy*, RMI (2022), at 12, *available at* https://rmi.org/insight/ensuring-an-inclusive-clean-energy-transition/.

CHAPTER 1:
Resilient and Sustainable: Creating a Modernized Grid

Update the Alternative Energy Portfolio Standard

- Pass legislation that requires 35% of electricity to be renewable.

Create a strategic plan for microgrids

- Direct PEMA, PUC, and DEP to jointly develop a plan that assesses supply vulnerabilities and prioritizes public safety.
- Investigate opportunities to protect low-income and environmental justice communities.
- Incentivize microgrids to be designed to integrate renewable generation and storage.
- Set statewide targets for microgrid deployment.
- Develop dedicated funding streams to support microgrid deployment.

Expedite deployment of energy storage projects

- Establish a permit fast track for storage projects to ensure storage projects can connect to the grid quickly.
- Encourage PJM to reform its capacity market to fully value the dispatchability of storage.
- Expand Act 129 to include storage as an eligible peak demand measure, enabling EDCs to count storage dispatched during the top 100 peak hours toward Act 129 compliance targets.
- Pass the "Clean Infrastructure Siting and Speed Act"
  - Establishes fast-track permitting for new renewable energy production, storage, and transmission that sets clear environmental safeguards.

Set storage target for the state

- Update PA Solar Future plan with new targets that include battery storage as a component.
- Set a goal of achieving 10% solar or 11 GW by 2035, strategically linking 25% of projects to battery, achieving 1,500 MW93.[93]

Incentivize improved reliability at existing gas plant sites

- Including weatherization and co-location with renewables or storage, allowing existing sites to increase their value as capacity resources without increasing pollution.

[93] PA DEP, Pennsylvania Energy Storage Assessment: Status, Barriers, and Opportunities (Apr. 2021), at 65, *available at* https://files.dep.state.pa.us/Energy/Office%20of%20Energy%20and%20Technology/OETDPortalFiles/EnergyAssurance/Strategen_PA_Energy_Storage_Assessment_April_2021.pdf.

CHAPTER 2:
A New Dawn for Communities: Shining a Light on Distributed Generation and Solar Energy

Pass Community Solar enabling legislation

- Expand access to clean energy for individuals who cannot benefit from residential solar, including renters and those living in buildings unsuitable for solar panel installation.
- Ensure that small subscribers and low-income customers have access to community solar.
- Require PUC ensure that community solar bill credits are appropriately valued.
- Implement prevailing wage and labor standards for the construction of these facilities.

Perform a study regarding the local tax impacts of grid scale solar installations

- Assign this project to the DCED, which collects data on local taxes.[94]

Incentivize solar development on previously impacted, commercial, or industrial properties, prioritizing:

- Brownfields and reclaimed mines.
- Rooftops of warehouses, fulfillment centers, and large government buildings.[95]

Expand tax incentives for solar development

- Provide a sales tax exemption for farmers purchasing solar system equipment needed to install solar arrays on their property.[96]
- Provide property tax exemptions on the added value of solar installations that prove to be viable agrivoltaics operations.[97]

Update statewide legal definitions of land uses

- Establish a statewide definition of agrivoltaics.[98]
- Ensure that agrivoltaics systems are considered an agricultural use.

---

94 Joint State Gov't Comm'n of Gen. Assembly of the Commw. of Pa., *Agrivoltaic Farming in Pennsylvania: Report of the Advisory Committee* H.R. 224 (2023) (May 2025), at 92, *available at* https://jsg.legis.state.pa.us//resources/documents/ftp/publications/2025-05-07%20HR224%20AV%20Farming%205.7.25%20web.pdf.

95 *Id.*, at 91.

96 *Id.*, at 92.

97 *Id.*, at 91.

98 *Id.*, at 89.

CHAPTER 3:
Transforming Liabilities into Assets: Solar Development in the Coal Fields

Develop a roadmap and tools for developing solar on future shuttered mines, including:

- A long-term visioning project that consults with a wide range of stakeholders, including businesses and residents that call the coal fields home.
- Create and implement a long-term plan that lays out the resources available to attract and fund solar and storage projects on mine lands and effectively communicates the economic and environmental benefits for the local communities.
- Establish a solar and battery storage development target for AMLs:
  - Develop a 1,500 MW of solar and battery storage on AMLs by 2035.
- Reform DCED Energy Program to include solar on AML and battery storage to meet aforementioned targets.
- Create DCED financial incentives specifically designed for deploying solar on AMLs.

Pass Community Solar enabling legislation

- Expand access to clean energy for individuals who cannot benefit from residential solar, including renters and those living in buildings unsuitable for solar panel installation.
- Ensure that small subscribers and low-income customers have access to community solar.
- Require PUC ensure that community solar bill credits are appropriately valued.
- Implement prevailing wage and labor standards for the construction of these facilities.

CHAPTER 4:
Brownfields to Bright Futures: Alternative Visions for Redeveloping Coal-Fired Power Plants

Develop a comprehensive new vision for redeveloping coal-fired power plants that does not default to transitioning old facilities into gas-fired power plants

- Establish a repurposing task force for coal plants.[99]
- Create a brownfield inventory oriented specifically towards the redevelopment of shuttered coal plant properties, including developing solar and battery storage.
- DCED must create a playbook specifically dedicated to these uses and how to transform a coal-fired power plant into those uses.
- Engage Team PA on a project that provides a new narrative for the future of redeveloped coal plant sites highlighting the long-term economic potential that solar energy development, battery storage, and other sustainable uses offer former coal communities across the state.

Develop financial tools specifically designed to encourage comprehensive redevelopment of shuttered sites in such a way as to diversify the local economy, strengthen the regional supply chain, and expand access to clean energy and battery storage

- Issue funding, incentives, or mandates for public or private reinvestment in coal communities, often through new electricity infrastructure projects.[100]
- Offer larger tax abatements for remediating former coal plant properties.

---

[99] Romer, Jim, "A Comprehensive Approach to Repurposing Retired Coal Power Plant Sites: Transforming Liabilities to Assets", ELECTRIC POWER RESEARCH INSTITUTE (May 2019), at 8-3.

[100] Claire Wang, Sam Mandell, Jeremy Richardson, & Ujay Varadarjan, *Coal Community Transition Policy in Action: How State Legislation is Supporting Coal Communities and Workers as the Economy Shifts to Clean Energy*, RMI (2022), at 10, *available at* https://rmi.org/insight/ensuring-an-inclusive-clean-energy-transition/.

CHAPTER 5:
Revamping Our Legacy: Decarbonizing Pennsylvania's Industrial Might

Promote sustainable development by leveraging environmental standards attached to financial resources

- Subsidies for low-carbon steel production or other manufacturing.
- Expand lending mechanisms, subsidies, tax credits, and equipment rebates.[101]

Provide funding specifically for repurposing shuttered coal-fired power plants

- Create a brownfield inventory oriented specifically towards the redevelopment of shuttered coal plant properties, including developing solar and battery storage.
- Offer larger tax abatements for remediating former coal plant properties.
- Funds for remediation, grid, and rail improvements.
- Funds specifically for eco-industrial park development.

Establish a new vision for former coal-fired power plant sites and host communities

- Leverage public-private relationships to explore eco-industrial park design and potential impacts to local tax bases and regional supply chains.
- Develop long-term economic plan that helps to guide priorities for and distribution of resources to former coal-fired power plant host communities and local officials.
- Include transition support for workers, primarily focused on training or education.
- Develop a new narrative for the future of redeveloped coal plant sites highlighting the long-term economic potential that solar energy development, battery storage, eco-industrial parks, and other sustainable uses offer former coal communities across the state.

Green procurement schemes for public infrastructure projects

- Leverage demand-side market power for state infrastructure projects.
- Set embodied carbon limits on materials sourced for public projects.
- Create financial incentives to source materials from low-carbon vendors.

[101] Jeffery Rissman, ZERO-CARBON INDUSTRY: TRANSFORMATIVE TECHNOLOGIES AND POLICIES TO ACHIEVE SUSTAINABLE PROSPERITY at 102.

PennFuture

www.pennfuture.org

Contact PennFuture:
info@pennfuture.org
800-321-7775
610 North Third Street
Harrisburg, PA 17101

This booklet is printed on 100% recycled paper.