



# **BREAKING GROUND: THE INFLATION REDUCTION ACT TWO YEARS IN**

An analysis of the IRA's impact on the clean energy sector  
and its potential to create high-quality union jobs

Climate Jobs National Resource Center

2024

# Table of Contents

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<b>Introduction</b>	<b>3</b>	<b>Montana</b>	<b>29</b>
<b>Methodology</b>	<b>7</b>	<b>Nebraska</b>	<b>30</b>
<b>National</b>	<b>9</b>	<b>Nevada</b>	<b>30</b>
<b>Alabama</b>	<b>11</b>	<b>New Hampshire</b>	<b>31</b>
<b>Alaska</b>	<b>12</b>	<b>New Jersey</b>	<b>31</b>
<b>Arizona</b>	<b>12</b>	<b>New Mexico</b>	<b>32</b>
<b>Arkansas</b>	<b>13</b>	<b>New York</b>	<b>32</b>
<b>California</b>	<b>13</b>	<b>North Carolina</b>	<b>34</b>
<b>Colorado</b>	<b>14</b>	<b>North Dakota</b>	<b>34</b>
<b>Connecticut</b>	<b>15</b>	<b>Ohio</b>	<b>35</b>
<b>Delaware</b>	<b>16</b>	<b>Oklahoma</b>	<b>35</b>
<b>District of Columbia</b>	<b>17</b>	<b>Oregon</b>	<b>36</b>
<b>Florida</b>	<b>17</b>	<b>Pennsylvania</b>	<b>36</b>
<b>Georgia</b>	<b>18</b>	<b>Rhode Island</b>	<b>37</b>
<b>Hawaii</b>	<b>18</b>	<b>South Carolina</b>	<b>38</b>
<b>Idaho</b>	<b>19</b>	<b>South Dakota</b>	<b>38</b>
<b>Illinois</b>	<b>19</b>	<b>Tennessee</b>	<b>39</b>
<b>Indiana</b>	<b>21</b>	<b>Texas</b>	<b>39</b>
<b>Iowa</b>	<b>21</b>	<b>Utah</b>	<b>41</b>
<b>Kansas</b>	<b>22</b>	<b>Vermont</b>	<b>41</b>
<b>Kentucky</b>	<b>22</b>	<b>Virginia</b>	<b>42</b>
<b>Louisiana</b>	<b>23</b>	<b>Washington</b>	<b>42</b>
<b>Maine</b>	<b>23</b>	<b>West Virginia</b>	<b>45</b>
<b>Maryland</b>	<b>25</b>	<b>Wisconsin</b>	<b>45</b>
<b>Massachusetts</b>	<b>25</b>	<b>Wyoming</b>	<b>47</b>
<b>Michigan</b>	<b>26</b>	<b>Conclusion</b>	<b>48</b>
<b>Minnesota</b>	<b>28</b>		
<b>Mississippi</b>	<b>28</b>		
<b>Missouri</b>	<b>30</b>		

# Introduction

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In August 2022, the United States passed the most significant investment in climate action in our country's history: the Inflation Reduction Act (IRA). The IRA—part of a broader framework of laws and policies investing in clean energy technologies and manufacturing, including the Infrastructure Investment and Jobs Act (2021) and the CHIPS and Science Act (2022)—offers a sweeping set of programs and incentives intended to accelerate the buildout of a domestic clean energy sector, many tied to labor standards designed to create high-quality, inclusive jobs across the country.

Several reports since the IRA's passage have assessed its potential impact on the climate and economy. Early estimates of the law's climate impact projected it would curb carbon emissions by up to 48 percent below 2005 levels by 2035,<sup>1</sup> while adding nearly 1.5 million jobs by 2030.<sup>2</sup> Many of the IRA's incentives and programs were also designed to advance racial equity under the Justice40 Initiative, which seeks to deliver 40 percent of the benefits of clean energy and climate investment in under-resourced or disadvantaged communities.<sup>3</sup> But, recent analysis from Rhodium Group and MIT found that while clean energy investment in the U.S. reached an all-time high of \$71 billion in the first quarter of 2024,<sup>4</sup> and the pace of emissions reductions has indeed accelerated under current climate policy including the IRA,<sup>5</sup> the U.S. is still not on track to meet its climate goal under the Paris Agreement of a 50-52 percent reduction in greenhouse gas emissions from 2005 levels by 2030.<sup>6</sup>

This analysis demonstrates the significant potential of the IRA to reduce carbon emissions and create high-quality jobs. It finds that there is a vast number of utility-scale clean energy projects across the country that could be built and could be eligible for many of the IRA's most powerful tax incentives and labor standards, representing a huge potential to both curb emissions and create new jobs. **We find 6,285 utility-scale clean energy generation and storage projects in the development pipeline – either planned, under construction, or already completed – that could be eligible for IRA incentives tied to labor standards.**

The report analyzes the clean energy projects that could be eligible for the IRA tax incentives that are maximized when projects adhere to prevailing wage and apprenticeship standards to create high-quality jobs, highlighting the Act's potential to redress not only the climate crisis but the concurrent crisis of racial and economic inequality as well. We also outline the critical role that labor unions are playing in realizing the IRA's goals of accelerating climate action and creating high-quality jobs, concluding that partnering with labor unions may be one of the most reliable ways to ensure that clean energy projects supported by the IRA actually get built, meet applicable labor standards to

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<sup>1</sup> John Bistline et al. "[Emissions and Energy Impacts of the Inflation Reduction Act.](#)" *Science Magazine* 380,1324-1327, 2023. DOI: 10.1126/science.adg3781

<sup>2</sup> David Foster, Alex Maranville, & Sam F. Savitz. "[Jobs, Emissions, and Economic Growth—What the Inflation Reduction Act Means for Working Families.](#)" *Energy Futures Initiative*, January 2023.

<sup>3</sup> "[FACT SHEET: Inflation Reduction Act Advances Environmental Justice.](#)" *The White House*, August 17, 2022.

<sup>4</sup> Lily Bermel et al. "[Clean Investment Monitor: Q1 2024 Update.](#)" *Rhodium Group*, May 30, 2024.

<sup>5</sup> Ben King et al. "[Taking Stock 2024: US Energy and Emissions Outlook.](#)" *Rhodium Group*, July 23, 2024.

<sup>6</sup> "[FACT SHEET: President Biden Sets 2030 Greenhouse Gas Pollution Reduction Target Aimed at Creating Good-Paying Union Jobs and Securing U.S. Leadership on Clean Energy Technologies.](#)" *The White House*. April 22, 2021.

maximize their federal incentives, and expand access to union jobs in under-resourced or marginalized communities.

## Summary of Findings

This analysis outlines the number of clean energy generation and storage projects currently in the development pipeline – planned, under construction, or recently completed – that could be eligible for Inflation Reduction Act (IRA) tax incentives with associated labor standards, to demonstrate the scale of the clean energy boom underway and the potential to create high-quality union jobs in this growing sector. It also includes case studies of union-built clean energy projects with testimonials from workers and union leaders on those projects to showcase the critical role of organized labor in maximizing the IRA’s potential to slash emissions, create good jobs and training pathways, and advance equity.

- We find **6,285** utility-scale clean energy projects either planned, under construction, or recently completed across the country that could be eligible for IRA incentives tied to labor standards.
- To maximize their tax credit under the IRA, these projects are required to meet labor standards—prevailing wage and apprenticeship requirements—and therefore represent a significant opportunity to boost pay and job quality for clean energy workers across America.<sup>7</sup>
- These projects are estimated to represent a combined potential of over **\$2 trillion** in investment, **1,091,966** megawatts of clean power, and approximately **3,947,670** jobs.
- Unions are critical to implementing the IRA in a way that maximizes high-quality job creation, advances equity by training a skilled and inclusive clean energy workforce, and ensures that clean energy projects actually get built in order to meet our climate goals.

This analysis offers data on the number of utility-scale clean energy developments that could be eligible for IRA incentives and their associated estimated nameplate capacity (megawatts), investment value, and job creation potential, both nationally and in each U.S. state and the District of Columbia. It concludes with an overview of challenges and opportunities in the implementation of the IRA and the central role that labor unions play in harnessing the IRA to tackle the dual crises of inequality and climate change.

**With the clean energy boom unleashed by the IRA, the United States has an unprecedented opportunity to create high-quality union jobs, advance racial and economic equity, combat the climate crisis, and slash emissions in communities across the country.**

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<sup>7</sup> IRA regulations state that projects that began construction prior to January 29, 2023, when the prevailing wage and apprenticeship requirements came into effect, are granted safe harbor – i.e., projects that began construction prior to January 29, 2023 and are eligible for IRA incentives with associated labor standards need not meet prevailing wage and apprenticeship requirements to still be eligible for the increased credit amount.

## About the Inflation Reduction Act's Labor Standards

The Inflation Reduction Act (IRA) includes many grant and loan programs, but its greatest impact on the clean energy economy may come from its suite of tax credits, which include 23 different incentives available for ten years.<sup>8</sup> Provisions are available for clean energy production, manufacturing of clean energy components, energy efficiency measures, and industrial decarbonization—supporting the clean energy sector at each critical point.

Twelve of the IRA's most powerful tax incentives are tied to labor standards aimed at making the clean energy sector a source of good jobs and equitable economic opportunity.<sup>9</sup> The tax credits with labor standards are structured to offer projects over one megawatt an enhanced tax credit worth up to five times the base credit if the project meets certain labor standards, including paying workers a prevailing wage and hiring registered apprentices—a crucial investment in building out a domestic clean energy workforce for generations to come. In other words, project developers or owners must create high-road jobs and hire apprentices to unlock the most robust tax credit available under the IRA.

For example, the investment tax credit (ITC) offers a credit equal to 30 percent of the total project cost if developers meet both labor standards, or just six percent if developers do not. Bonus tax credits are available for certain incentives and can be stacked by meeting domestic content requirements<sup>10</sup> or locating investments in an “energy community.”<sup>11</sup> These additional, stackable credits are intended to support the buildout of a domestic clean energy supply chain and support investments in fossil fuel communities, respectively.

To meet the prevailing wage requirements, projects must pay workers no less than the federal prevailing wage rate, defined as the hourly wage and usual benefits paid to the majority of workers in a given job classification in the specific geographic area, as determined by the U.S. Department of Labor. This is often the union wage.<sup>12</sup> The prevailing wage provision in the IRA will help ensure that clean energy jobs, rather than undercutting high-paying work in fossil fuels, can become lifelong, family-sustaining careers for workers nationwide.

To meet the IRA's apprenticeship requirements, clean energy projects must employ at least one registered apprentice for every four workers on a job and, as of 2024, 15 percent of the work hours on

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<sup>8</sup> [“Clean Energy Tax Provisions in the Inflation Reduction Act.”](#) *The White House*, September 21, 2023.

<sup>9</sup> [“Prevailing Wage & Registered Apprenticeship Overview.”](#) *Internal Revenue Service*, Last Modified June 2024.

<sup>10</sup> The domestic content requirement is met if 100% of any steel and iron was manufactured in the U.S., and if 40% (20% for offshore wind facilities) of the total costs of the manufactured products and components originate in the U.S. for a facility for which construction begins before 2025. This percentage increases to 55% for construction beginning after 2026 (2027 for offshore wind). A manufactured product or component originates in the U.S. if all the manufacturing processes take place in the U.S. and all the components are of U.S. origin. ([“Domestic Content Safe Harbor Notice,”](#) *Internal Revenue Service*, 2024.)

<sup>11</sup> An “energy community” is any of these three types of geographies: brownfields, high fossil fuel-employment or fossil-fuel revenue areas, and coal communities. ([“Energy Community Bonus Credit Amounts under the Inflation Reduction Act of 2022,”](#) *Internal Revenue Service*, 2023.)

<sup>12</sup> Data indicates that in 2010, a union rate prevailed in 63% of wage determinations. This dropped to 42% in 2022. ([“Updating the Davis-Bacon and Related Acts Regulations,”](#) *88 Federal Register*. 57526, 57536 n. 44-45. October 23, 2023.)

a project must be performed by registered apprentices.<sup>13</sup> Apprenticeship requirements ensure that clean energy projects create training opportunities that put workers on a path to a lifelong union career. Together, the prevailing wage and apprenticeship standards attached to many of the IRA's incentives seek to lift the pay and quality of jobs throughout the clean energy economy while training a skilled workforce to build new energy infrastructure efficiently, safely, and at scale.

The IRA was also designed so that tax-exempt public and nonprofit entities can also benefit from many of these incentives through an "elective pay" or "direct pay" mechanism. Under this provision, an eligible tax-exempt entity, like a school or a municipality, that chooses to invest in eligible clean energy upgrades or projects—for example, rooftop solar—can receive a cash payment equal to the dollar value of the tax credit. The same labor standards apply to most of the tax incentives eligible for "elective pay."

The IRA incentives with associated labor standards include:

- Production Tax Credit (PTC; § 45)
- Clean Electricity PTC (§ 45Y)
- Investment Tax Credit (ITC; § 48)
- Clean Electricity ITC (§ 48E)
- Carbon Oxide Sequestration Credit (§ 45Q)
- Zero-Emission Nuclear Power Production Credit (§ 45U)
- Qualifying Advanced Energy Project Credit (§ 48C)
- Alternative Fuel Vehicle Refueling Property Credit (§ 30C)
- Clean Hydrogen PTC (§ 45V)
- Clean Fuel Production Credit (§ 45Z)
- New Energy Efficient Homes Credit (§ 45L)
- Energy Efficient Commercial Buildings Deduction (§ 179D)

## Registered Apprenticeships: Training The Clean Energy Workforce

"Registered apprenticeship programs and unionized construction careers have created pathways to dignified, high-quality, well-paid work for millions of people over the years. A union card, especially in construction, has long been an important tool for working-class communities to secure good jobs without a college degree. Further, most union apprenticeship programs come at no direct cost to participants. Those enrolled can instead 'earn while they learn' by getting paid to complete hands-on construction work at job sites during their apprenticeship. Wages, benefits, training, and safety standards on unionized construction sites far exceed those on nonunion sites."

*From Building an Equitable, Diverse, & Unionized Clean Energy Economy: What we can Learn from Apprenticeship Readiness, Climate Jobs Institute at Cornell University, 2024<sup>14</sup>*

<sup>13</sup> Projects must also satisfy any applicable state or federal ratio requirement for apprentices to journeypeople. ("[Increased Amounts of Credit or Deduction for Satisfying Certain Prevailing Wage and Registered Apprenticeship Requirements.](#)" *Internal Revenue Service*, June 25, 2024.) Journeypeople are highly-skilled workers in a given trade who have completed an apprenticeship qualification or equivalent training to work at the mastery level of a trade. ("[National Apprenticeship Act. 29 C.F.R. 29.2.](#)" October 29, 2008.)

<sup>14</sup> Zach Cunningham & Melissa Shetler. "[Building an Equitable, Diverse, & Unionized Clean Energy Economy: What we can Learn from Apprenticeship Readiness.](#)" *Cornell University's Climate Jobs Institute*, November 30, 2023.

# Methodology

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To create a list of clean energy generation and storage projects that could be eligible for various Inflation Reduction Act (IRA) tax incentives (see below), we pull information from the following datasets: Industrial Info Resources (IIR), S&P<sup>15</sup>, and the U.S. Department of Labor's Good Clean Energy Jobs Powered by the Inflation Reduction Act database<sup>16</sup> supplemented by publicly available information from various sources, including American Clean Power Association (ACP) and Oceanic Network.

Our analysis includes battery, geothermal, hydropower, nuclear, offshore wind<sup>17</sup>, onshore wind, pumped storage, and solar projects<sup>18</sup> with a capacity of one megawatt (MW) or greater in the 50 U.S. states and the District of Columbia. Projects included in our analysis were tagged in datasets with the status "planned," "under construction," or "operational" as of July 16, 2024.<sup>19</sup>

We define projects that "could be eligible" for IRA incentives as any project that meets the above criteria and could be placed in service (operational/completed) after January 1, 2023.<sup>20</sup> These projects could include those that were announced or began construction prior to the IRA's passage.

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<sup>16</sup> "[Good Clean Energy Jobs Powered by the Inflation Reduction Act.](#)" U.S. Department of Labor, Accessed July 16, 2024.

<sup>17</sup> Planned offshore wind projects include those where a federal lease has been leased to a developer. Because not all lease areas fall within a state's geographic boundaries, we assign developer-leased areas to states as follows. Developer-leased projects with offtake agreements are assigned to a state based on the size of the agreement, and those without agreements are assigned to the state closest in proximity or where there was previously an agreement with that state. For the Tri-State Procurement (MA, CT, and RI), planned MW capacity is based on current OSW goals and projects are assigned to MA.

<sup>18</sup> The IRA tax incentives applicable to the types of clean energy generation and storage projects in this report are the Production Tax Credit and Clean Electricity Production Credit (§45, §45Y), Investment Tax Credit and Clean Electricity Investment Credit (§48, §48E), and Zero-Emission Nuclear Power Production Credit (§45U). ("[Prevailing Wage & Registered Apprenticeship Overview.](#)")

<sup>19</sup> Projects listed as operational or with completion dates before July 16, 2024 are categorized as "operational;" projects listed as under construction or with construction start dates before July 16, 2024 are listed "under construction," and projects that have been announced with construction start dates in the future or no confirmed construction start date are listed as "planned."

<sup>20</sup> The IRA significantly reformed and extended the ITC and PTC (originally established in 2005 and 1992, respectively) to eligible projects for which construction begins before 2025. The IRA also established the technology-neutral Clean Electricity Investment Credit and the Clean Electricity Production Credit, which generally replace the ITC and PTC, respectively, for qualified projects placed in service after December 31, 2024. We use January 1, 2023 as the "placed in service" date for all technologies that we consider "could be eligible" because this captures the technologies eligible for the ITC, PTC, and the technology-neutral Clean Electricity Investment and Production Credits. The Zero-Emission Nuclear Power Production Credit is available for electricity sold after Dec. 31, 2023 from facilities in operation prior to the enactment of the IRA. Note that several of these credits are subject to ongoing rulemaking, such as the technology-neutral Clean Electricity Investment and Production Credits.

Technologies and associated IRA incentives: Battery storage (ITC); Geothermal (PTC, ITC); Hydropower (PTC, ITC); Nuclear (Zero-Emission Nuclear Power Production Credit; PTC; ITC); Offshore wind (PTC, ITC); Onshore wind (PTC, ITC); Pumped storage (ITC); and Solar (PTC, ITC).<sup>21</sup>

## Investment and Job Numbers

To estimate investment and job numbers per project, we use data on investment from the datasets (see above). For numbers that are not in the datasets, we estimate the investment numbers using capital expenditure per megawatt (MW) from the National Renewable Energy Laboratory (NREL)'s Annual Technology Baseline,<sup>22,23</sup> the ACP Offshore Wind Market report,<sup>24</sup> and direct job numbers<sup>25</sup> using jobs per MW multipliers from NREL<sup>26,27</sup> and the Georgia Institute of Technology.<sup>28</sup>

## Note on Projects

The information on clean energy and storage projects in the report—including the case studies of union-built clean energy projects and worker testimonials—does not indicate or imply eligibility for the tax credits. Eligibility for each tax credit is determined by the U.S. Department of the Treasury and the Internal Revenue Service according to multiple applicable requirements.

Not every proposed clean energy project gets built, as many face significant delays and challenges in the normal course of business due to lengthy interconnection queues, siting and permitting obstacles, and transmission constraints, among other issues that can hinder timely development and deployment.

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<sup>21</sup> Note that we use “PTC” and “ITC” to refer either to the existing PTC and ITC or the Clean Electricity PTC/ITC that will generally replace the existing credits.

<sup>22</sup> “[2024 Electricity Annual Technology Baseline](#).” *National Renewable Energy Lab*, Updated 2024. We use this source to estimate CAPEX numbers for battery, geothermal, hydro, nuclear, pumped storage, solar, solar + battery, and onshore wind projects.

<sup>23</sup> NREL's capital expenditure estimates do not include grid connection, construction financing, or operations and maintenance (O&M) costs. Furthermore, these numbers are averages; there may be significant regional and project-by-project variation, especially with newer technologies such as battery and nuclear projects. To generate estimates, we use the following parameters: CAPEX (Parameter); Conservative (Scenario) Market (Financials); 30 years (Cost Recovery Period); Mature (Technology Maturity); Default (Technology Detail). To simplify the methodology, we use the 2023 CAPEX estimate regardless of a project's estimated operational date with the exception of nuclear because NREL only provides a 2030 estimate.

<sup>24</sup> “[Offshore Wind Market Report](#).” American Clean Power Association. July 2024. We use this source to estimate CAPEX numbers of offshore wind projects.

<sup>25</sup> We define direct jobs as those related to the construction, installation, and operation of the technology and indirect jobs as those related to the supply chain of the technology. (Marliyn A. Brown et al. “[Estimating Employment from Energy-Efficiency Investments](#).” *Georgia Institute of Technology*, March 15, 2020, ISSN 2215-0161, <https://doi.org/10.1016/j.mex.2020.100955>.) We apply those categories to NREL job data for offshore wind, battery, solar, solar + battery, and onshore wind.

<sup>26</sup> Jeremy Stefek et al. “[U.S. Offshore Wind Workforce Assessment](#).” *National Renewable Energy Laboratory*, October 2022. To estimate direct job multipliers for offshore wind, we add the jobs per MW (total jobs / 3000 MW) for development, ports and staging, maritime construction, and O&M. We use NREL's estimates for 25% domestic content, which assumes moderate build out of the domestic supply chain, and the higher of the two 2030 O&M numbers, which assumes significant build out of offshore wind projects between now and 2030.

<sup>27</sup> Sarah Truitt et al, “[State-Level Employment Projections for Four Clean Energy Technologies in 2025 and 2030](#).” *National Renewable Energy Laboratory*, March 2022. To estimate direct job multipliers for battery, solar, and onshore wind, we add construction and professional services jobs/MW by 2025. To estimate the solar + battery job multiplier, we add the solar and battery multipliers.

<sup>28</sup> Brown et al. We use this study to estimate direct job multipliers for geothermal, hydro, nuclear, and pumped storage. Because the estimates are in jobs/\$, we first convert them to jobs/MW using the NREL \$/MW CAPEX numbers. Because there is no pumped storage job/\$ estimate, we assume pumped storage and hydro have the same jobs/\$.



# National

Across the United States,<sup>29</sup> **6,285 clean energy generation and storage projects** are in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **1,091,966 megawatts** of clean power, and **over \$2 trillion** associated investment, and an estimated **3,947,670 jobs** nationwide.

**Total number of clean energy projects planned, under construction, or recently completed that could be eligible for IRA incentives with associated labor standards, by state:**

State	Total Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Alabama	54	9,050	30,736	\$28,412,191,000
Alaska	17	1,111	2,908	\$2,169,724,000
Arizona	184	59,719	242,039	\$125,786,374,000
Arkansas	43	6,550	16,143	\$10,503,381,000
California	601	108,999	548,336	\$227,140,115,000
Colorado	144	24,990	78,759	\$42,058,383,000
Connecticut	45	3,724	11,231	\$11,212,336,184
Delaware	15	235	411	\$363,769,000
D.C.	6	34	208	\$83,820,000
Florida	186	12,945	24,115	\$18,836,193,000
Georgia	69	7,620	29,559	\$23,276,874,000
Hawaii	73	2,663	13,505	\$4,641,654,000
Idaho	40	11,469	38,831	\$22,483,370,000
Illinois	186	30,207	52,861	\$47,050,176,000
Indiana	121	24,300	60,053	\$35,564,847,000
Iowa	45	9,651	10,327	\$15,713,975,000
Kansas	40	9,737	19,599	\$16,092,109,000
Kentucky	93	12,277	24,790	\$18,651,006,000
Louisiana	59	10,102	22,478	\$20,986,577,000
Maine	129	4,132	8,276	\$6,904,621,000
Maryland	71	4,843	7,126	\$11,254,332,000
Massachusetts	120	17,719	63,180	\$53,836,369,000

<sup>29</sup> 50 U.S. States and the District of Columbia

State	Total Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Michigan	99	16,545	49,689	\$43,044,659,000
Minnesota	105	7,187	10,382	\$11,092,021,000
Mississippi	59	6,686	15,939	\$9,954,980,000
Missouri	35	4,816	9,545	\$7,319,893,000
Montana	40	7,093	16,473	\$10,779,749,000
Nebraska	20	3,047	3,508	\$4,872,132,000
Nevada	222	121,085	552,442	\$208,918,798,000
New Hampshire	6	921	5,154	\$2,005,875,000
New Jersey	58	11,343	22,019	\$43,105,077,000
New Mexico	89	23,542	56,779	\$34,724,377,000
New York	547	45,852	169,941	\$86,740,476,000
North Carolina	118	10,052	31,007	\$26,661,952,000
North Dakota	17	4,108	4,507	\$7,040,550,000
Ohio	120	16,103	44,201	\$31,446,374,000
Oklahoma	32	8,593	19,036	\$14,797,510,000
Oregon	64	15,645	64,220	\$31,162,851,000
Pennsylvania	125	9,030	32,125	\$23,850,113,000
Rhode Island	25	2,051	3,192	\$6,249,227,000
South Carolina	81	7,551	24,060	\$13,486,072,000
South Dakota	14	2,007	5,304	\$5,837,160,000
Tennessee	39	4,092	17,259	\$11,145,331,000
Texas	1,494	307,427	1,198,985	\$484,582,704,000
Utah	50	14,291	50,580	\$30,130,939,000
Vermont	19	97	215	\$187,732,000
Virginia	258	24,739	63,997	\$57,696,323,000
Washington	44	11,838	58,001	\$28,617,300,000
West Virginia	39	2,907	9,297	\$5,069,338,000
Wisconsin	82	11,833	42,366	\$18,124,489,000
Wyoming	43	19,411	61,976	\$46,587,331,000
<b>Grand Total</b>	<b>6,285</b>	<b>1,091,966</b>	<b>3,947,670</b>	<b>\$2,048,253,529,184</b>

Total number of clean energy projects planned, under construction, or recently completed that could be eligible for IRA incentives with associated labor standards, by technology:

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	1,979	327,675	2,621,402	\$596,656,158,000
Geothermal	16	1,165	10,485	\$5,496,190,000
Hydro	136	52,176	223,834	\$156,274,718,000
Nuclear	18	10,294	124,453	\$97,750,904,000
Offshore Wind	46	51,962	83,138	\$202,893,074,184
Onshore Wind	365	109,239	64,451	\$168,395,274,000
Pumped Storage	22	22,377	95,998	\$80,236,120,000
Solar	3,703	517,078	723,909	\$740,551,091,000
<b>Grand Total</b>	<b>6,285</b>	<b>1,091,966</b>	<b>3,947,670</b>	<b>\$2,048,253,529,184</b>

## Alabama

In Alabama, there are **54 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **9,050 megawatts** of clean power, **\$28,412,191,000** associated investment, and an estimated **30,736 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	9	610.00	4,880	\$1,147,000,000
Hydro	4	3,258.00	13,977	\$16,192,000,000
Pumped Storage	1	1,600.00	6,864	\$6,080,000,000
Solar	40	3,581.90	5,015	\$4,993,191,000
<b>Grand Total</b>	<b>54</b>	<b>9,049.90</b>	<b>30,736</b>	<b>\$28,412,191,000</b>

## Alaska

In Alaska, there are **17 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **1,110 megawatts** of clean power, **\$2,169,724,000** associated investment, and an estimated **2,908 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	1	46.00	368	\$96,600,000
Geothermal	2	130.00	1,170	\$870,000,000
Hydro	7	150.30	645	\$277,700,000
Onshore Wind	4	460.00	271	\$502,000,000
Solar	3	324.50	454	\$423,424,000
<b>Grand Total</b>	<b>17</b>	<b>1,110.80</b>	<b>2,908</b>	<b>\$2,169,724,000</b>

## Arizona

In Arizona, there are **184 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **59,719 megawatts** of clean power, **\$125,786,374,000** associated investment, and an estimated **242,039 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	81	18,934.00	151,472	\$39,437,900,000
Hydro	7	9,259.00	39,721	\$33,910,000,000
Onshore Wind	6	1,678.70	990	\$2,925,418,000
Pumped Storage	2	2,792.00	11,978	\$10,609,600,000
Solar	88	27,055.60	37,878	\$38,903,456,000
<b>Grand Total</b>	<b>184</b>	<b>59,719.30</b>	<b>242,039</b>	<b>\$125,786,374,000</b>

## Arkansas

In Arkansas, there are **43 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **6,550 megawatts** of clean power, **\$10,503,381,000** associated investment, and an estimated **16,143 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	6	974.00	7,792	\$1,855,000,000
Hydro	4	239.00	1,025	\$970,000,000
Onshore Wind	1	180.00	106	\$300,000,000
Solar	32	5,157.00	7,220	\$7,378,381,000
<b>Grand Total</b>	<b>43</b>	<b>6,550.00</b>	<b>16,143</b>	<b>\$10,503,381,000</b>

## California

In California, there are **601 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **108,999 megawatts** of clean power, **\$227,140,115,000** associated investment, and an estimated **548,336 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	324	54,634.75	437,078	\$106,045,940,000
Geothermal	3	357.00	3,213	\$1,740,000,000
Hydro	12	7,722.00	33,127	\$23,587,375,000
Offshore Wind	6	6,102.00	9,763	\$28,343,920,000
Onshore Wind	14	2,394.50	1,413	\$3,946,152,000
Pumped Storage	3	3,750.00	16,088	\$14,250,000,000
Solar	239	34,038.38	47,654	\$49,226,728,000
<b>Grand Total</b>	<b>601</b>	<b>108,998.63</b>	<b>548,336</b>	<b>\$227,140,115,000</b>

# Colorado

In Colorado, there are **144 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **24,990 megawatts** of clean power, **\$42,058,383,000** associated investment, and an estimated **78,759 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	53	6,380.00	51,040	\$12,792,500,000
Geothermal	2	15.00	135	\$58,150,000
Hydro	3	1,350.00	5,792	\$4,000,000,000
Onshore Wind	8	2,902.20	1,712	\$3,685,000,000
Solar	78	14,343.00	20,080	\$21,522,733,000
<b>Grand Total</b>	<b>144</b>	<b>24,990.20</b>	<b>78,759</b>	<b>\$42,058,383,000</b>

## Case Study:

**Fountain Solar Project** is a 1.7-megawatt municipal solar array in **Fountain, Colorado** that is currently powering the City of Fountain’s municipal energy needs. The public power project, built by union workers and completed in 2023, is a prime example of how clean energy projects like those supported through Inflation Reduction Act incentives can create high-quality jobs, cut energy costs, and curb carbon emissions. Fountain Solar allowed the city to save approximately \$175,000 per year on energy costs by offsetting 100% of the electricity used to power municipal facilities and streetlights.<sup>30</sup>

**Tim Provin** is a member of the **International Brotherhood of Electrical Workers Local 113** and worked as a foreman on Fountain Solar.

*“I don’t know if people understand how dangerous it can be [to work on solar]. You’re dealing with DC voltage and you’re hooking up panels you can’t turn off. You want people who understand what’s going on and where the danger is. Union electricians are better qualified to do this work safely, in my opinion. I believe we’re the best trained. [On Fountain Solar], we came out on time and under budget, which is quite a feat. In the end, union contractors are cheaper because you don’t have to do things twice.”*

**– TIM PROVIN**

<sup>30</sup> Paul Ciampoli, [“New Solar Array in Fountain, Colo., Set to Provide Savings for City.”](#) American Public Power Association, November 27, 2023. Note that there is only indication the City of Fountain relied on a state grant and loan, rather than tax credits, to fund the solar project.

# Connecticut

In Connecticut, there are **45 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **3,724 megawatts** of clean power, **\$11,212,336,184** associated investment, and an estimated **11,231 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	9	842.00	6,736	\$1,558,300,000
Solar	35	578.20	809	\$880,962,000
Offshore Wind*	1	2,304.00	3,686	\$8,773,074,184
<b>Grand Total</b>	<b>45</b>	<b>3,724.20</b>	<b>11,231</b>	<b>\$11,212,336,184</b>

\* Includes one active project of 304 MW and an active solicitation for one or more projects for up to 2,000 MW.

## Case Study:

**Gravel Pit Solar** is a 120-megawatt solar energy project currently under construction in **East Windsor, Connecticut** by union workers. This solar project will deliver clean energy to customers in Connecticut, Massachusetts, and Rhode Island – producing enough clean energy to power over 12,000 homes.<sup>31</sup> Comcast is one of the purchasers of power from Gravel Pit, an agreement that will power 43 percent of Comcast’s operations across Connecticut and Massachusetts.<sup>32</sup>

**Jeffrey Bazinet** is a member of the **International Brotherhood of Electrical Workers Local 35** who is working on Gravel Pit Solar.



*“I’ve been a union member for 16 years and have been working on Gravel Pit Solar for 14 months, since day one. Unions have done everything to help me provide for my family. I’m married and have two kids and the union has helped me through everything. You always have somebody around to help you. We’re all here to get the job done, we’re all here to be paid equally, and treated fairly. You’re always going to feel safe on a union project. I know people who work non-union and I’ve heard horror stories. With the union, you’ll always be treated fairly, no matter who you are.”*

<sup>31</sup> Gravel Pit Solar, LLC. “[Gravel Pit Solar](#).” Accessed July 25, 2024.

<sup>32</sup> “[Comcast to Source Clean, Renewable Electricity for Nearly Half of New England Operations](#).” Comcast, February 6, 2023.

*This is my third solar project that I've worked on. With solar, you're in the elements all the time which can be tough, but it's great work. Climate change is happening and you can see it. Solar can help with that. We've got to do better for our future generations, and I think solar, wind, all of that is a good step forward. On a union job like Gravel Pit, everybody goes home safe to their families at the end of the day. That's the one thing we strive for out here. This project has been all union, it's been high-quality craftsmanship. Safety and equality, that's what we strive for in the union."*

**- JEFFREY BAZINET**

**Frank Bonzani** is a member of the **International Union of Operating Engineers Local 478** working on Gravel Pit Solar.

*"Being a union member for nearly 40 years has been an incredibly rewarding experience for me and my family. The union has provided numerous opportunities, both on and off the job, including excellent pay, outstanding healthcare for my family and me, and a pension that allows me to retire with dignity.*

*The emergence of new solar jobs has brought many positive aspects, such as environmental benefits, cost savings, increased home value, and job creation. Solar power is set to be a significant player in the energy industry for the foreseeable future. I take great pride in working alongside my union brothers and sisters to improve our environment and economy."*

**- FRANK BONZANI**

## Delaware

In Delaware, there are **15 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **235 megawatts** of clean power, **\$363,769,000** associated investment, and an estimated **411 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	1	12.50	100	\$26,250,000
Solar	14	222.40	311	\$337,519,000
<b>Grand Total</b>	<b>15</b>	<b>234.90</b>	<b>411</b>	<b>\$363,769,000</b>



# District of Columbia

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In the District of Columbia, there are **6 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **34 megawatts** of clean power, **\$83,820,000** associated investment, and an estimated **208 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	3	24.20	194	\$67,520,000
Solar	3	9.70	14	\$16,300,000
<b>Grand Total</b>	<b>6</b>	<b>33.90</b>	<b>208</b>	<b>\$83,820,000</b>

# Florida

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In Florida, there are **186 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **12,945 megawatts** of clean power, **\$18,836,193,000** associated investment, and an estimated **24,115 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	21	908.00	7,264	\$1,886,250,000
Solar	165	12,036.50	16,851	\$16,949,943,000
<b>Grand Total</b>	<b>186</b>	<b>12,944.50</b>	<b>24,115</b>	<b>\$18,836,193,000</b>

# Georgia

In Georgia, there are **69 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **7,620 megawatts** of clean power, **\$23,276,874,000** associated investment, and an estimated **29,559 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	11	1,058.00	8,464	\$2,221,800,000
Nuclear	1	1,114.00	13,468	\$13,200,900,000
Solar	57	5,447.70	7,627	\$7,854,174,000
<b>Grand Total</b>	<b>69</b>	<b>7,619.70</b>	<b>29,559</b>	<b>\$23,276,874,000</b>

# Hawaii

In Hawaii, there are **73 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **2,663 megawatts** of clean power, **\$4,641,654,000** associated investment, and an estimated **13,505 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	40	1,470.73	11,766	\$2,887,133,000
Hydro	2	24.00	103	\$115,000,000
Solar	31	1,168.23	1,636	\$1,639,521,000
<b>Grand Total</b>	<b>73</b>	<b>2,662.96</b>	<b>13,505</b>	<b>\$4,641,654,000</b>

# Idaho

In Idaho, there are **40 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **11,469 megawatts** of clean power, **\$22,483,370,000** associated investment, and an estimated **38,831 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	14	1,781.00	14,248	\$3,571,700,000
Hydro	4	2,042.50	8,762	\$3,072,000,000
Nuclear	2	92.00	1,112	\$802,070,000
Onshore Wind	4	1,317.00	777	\$2,154,100,000
Pumped Storage	1	1,800.00	7,722	\$6,840,000,000
Solar	15	4,436.00	6,210	\$6,043,500,000
<b>Grand Total</b>	<b>40</b>	<b>11,468.50</b>	<b>38,831</b>	<b>\$22,483,370,000</b>

# Illinois

In Illinois, there are **186 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **30,207 megawatts** of clean power, **\$47,050,176,000** associated investment, and an estimated **52,861 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	29	2,663.00	21,304	\$5,375,300,000
Onshore Wind	37	8,647.60	5,102	\$14,818,240,000
Solar	120	18,896.50	26,455	\$26,856,636,000
<b>Grand Total</b>	<b>186</b>	<b>30,207.10</b>	<b>52,861</b>	<b>\$47,050,176,000</b>

## Case Study:

**Double Black Diamond Solar** is a 600-megawatt solar project in **Virден, Illinois** – 30 miles west of Springfield – currently under construction by union workers. When completed, the project will deliver enough clean energy to power approximately 100,000 homes as the largest solar energy facility east of the Mississippi River.<sup>33</sup> The project will also send power to the City of Chicago, where it is expected to offset around 70 percent of the electricity use from Chicago’s municipal operations.<sup>34</sup> Approximately 450 workers are involved in the construction of the project, from several unionized trades.

**Makiah Perkins** is an apprentice of the **Mid-America Carpenters Regional Council Local 270** who worked on Double Black Diamond Solar.<sup>35</sup>



*“I’m proud to be in the Mid-America Union because I feel like it gives us young people a chance. [...] I get a career out here. There’s plenty, a lot of options. [Double Black Diamond Solar] is my first job, and there’s many other things I can learn in carpentry. [...] I think I’m [going to] stay here forever.”*

**– MAKIAH PERKINS**

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<sup>33</sup> Swift Current Energy. “[Double Black Diamond Solar](#).” Accessed July 25, 2024.

<sup>34</sup> Kari Lydersen. “[Largest solar farm in Illinois will help Chicago’s city operations meet climate goal](#).” *Energy News Network*, June 12, 2023.

<sup>35</sup> Mid-America Carpenters Regional Council. “[Makiah Perkins Testimonial](#).” *Facebook*, November 17, 2023.

## Indiana

In Indiana, there are **121 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **24,300 megawatts** of clean power, **\$35,564,847,000** associated investment, and an estimated **60,053 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	23	4,103.00	32,824	\$7,991,000,000
Onshore Wind	7	1,292.00	762	\$1,937,000,000
Solar	91	18,905.03	26,467	\$25,636,847,000
<b>Grand Total</b>	<b>121</b>	<b>24,300.03</b>	<b>60,053</b>	<b>\$35,564,847,000</b>

## Iowa

In Iowa, there are **45 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **9,651 megawatts** of clean power, **\$15,713,975,000** associated investment, and an estimated **10,327 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	6	380.00	3,040	\$778,000,000
Onshore Wind	16	7,028.20	4,147	\$11,810,548,000
Solar	23	2,243.10	3,140	\$3,125,427,000
<b>Grand Total</b>	<b>45</b>	<b>9,651.30</b>	<b>10,327</b>	<b>\$15,713,975,000</b>

# Kansas

In Kansas, there are **40 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **9,737 megawatts** of clean power, **\$16,092,109,000** associated investment, and an estimated **19,599 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	8	1,428.00	11,424	\$2,591,800,000
Onshore Wind	12	4,268.56	2,518	\$7,612,920,000
Solar	20	4,040.40	5,657	\$5,887,389,000
<b>Grand Total</b>	<b>40</b>	<b>9,736.96</b>	<b>19,599</b>	<b>\$16,092,109,000</b>

# Kentucky

In Kentucky, there are **93 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **12,277 megawatts** of clean power, **\$18,651,006,000** associated investment, and an estimated **24,790 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	9	1,198.00	9,584	\$2,003,300,000
Hydro	7	224.10	961	\$1,111,065,000
Onshore Wind	3	2,200.00	1,298	\$2,520,000,000
Pumped Storage	1	287.00	1,231	\$1,090,600,000
Solar	73	8,368.36	11,716	\$11,926,041,000
<b>Grand Total</b>	<b>93</b>	<b>12,277.46</b>	<b>24,790</b>	<b>\$18,651,006,000</b>

## Louisiana

In Louisiana, there are **59 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **10,102 megawatts** of clean power, **\$20,986,577,000** associated investment, and an estimated **22,478 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	6	1,150.00	9,200	\$2,415,000,000
Hydro	2	76.60	329	\$241,950,000
Offshore Wind*	3	2,619.00	4,190	\$9,973,152,000
Solar	48	6,256.50	8,759	\$8,356,475,000
<b>Grand Total</b>	<b>59</b>	<b>10,102.10</b>	<b>22,478</b>	<b>\$20,986,577,000</b>

\*Estimated one of the state offshore wind projects as the same size as the other project in state waters (480 mw).

## Maine

In Maine, there are **129 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **4,132 megawatts** of clean power, **\$6,904,621,000** associated investment, and an estimated **8,276 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	7	612.30	4,898	\$1,019,330,000
Hydro	1	14.00	60	\$43,000,000
Offshore Wind	1	12.00	19	\$45,696,000
Onshore Wind	8	1,964.80	1,159	\$3,529,900,000
Solar	112	1,528.70	2,140	\$2,266,695,000
<b>Grand Total</b>	<b>129</b>	<b>4,131.80</b>	<b>8,276</b>	<b>\$6,904,621,000</b>

## Case Study:

**Walden Leeds Solar Park** is a 20-megawatt solar project in **Leeds, Maine** that is currently being built in part by Maine's labor unions. The project will bring Maine closer to its clean energy goals while supporting good union jobs.<sup>36</sup>

**Caleb Littlefield** is a member of the **International Union of Operating Engineers Local 4** working on Walden Leeds Solar.



*"It seemed like all the good jobs were hours away. You kind of had to choose between raising your kids or making enough money to support them. You just couldn't do both. But the Inflation Reduction Act is changing that. Those investments are creating good union jobs that make people's lives better. The Inflation Reduction Act means good jobs for years to come. That means my daughter gets a good life and a dad who's home for dinner. And that's what it's all about."*

**- CALEB LITTLEFIELD**

**Patricia Keil** is a member of the **Laborers' International Union of North America Local 327** working on Walden Leeds Solar.



*"Joining the union has changed my life. It has been amazing. I went from working non-union for 11 years where I had benefits but had a \$7,000 deductible. Being with the [Laborers' International Union of North America], I'm taken care of. I can go to the doctor whenever I need to without worrying about going broke over it. The union has my back and takes care of me. It's a real brotherhood and sisterhood."*

*I love what I do and it's even better that the work we're doing at Leeds Solar is making an impact on the environment and our future."*

**- PATRICIA KEIL**

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<sup>36</sup> Tux Turkel. ["Solar wins big in project selection to advance Maine's clean energy goals."](#) Portland Press Herald, September 22, 2020.



## Maryland

In Maryland, there are **71 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **4,843 megawatts** of clean power, **\$11,254,332,000** associated investment, and an estimated **7,126 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	8	60.70	486	\$113,470,000
Hydro	2	126.00	541	\$350,000,000
Offshore Wind	4	2,044.00	3,270	\$7,506,688,000
Onshore Wind	3	1,021.00	602	\$1,823,800,000
Solar	54	1,590.86	2,227	\$1,460,374,000
<b>Grand Total</b>	<b>71</b>	<b>4,842.56</b>	<b>7,126</b>	<b>\$11,254,332,000</b>

## Massachusetts

In Massachusetts, there are **120 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **17,719 megawatts** of clean power, **\$53,836,369,000** associated investment, and an estimated **63,180 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	57	5,566.30	44,530	\$9,240,430,000
Hydro	1	28.00	120	\$90,000,000
Offshore Wind*	10	11,016.00	17,626	\$42,574,480,000
Onshore Wind	1	800.00	472	\$1,440,000,000
Solar	51	308.65	432	\$491,459,000
<b>Grand Total</b>	<b>120</b>	<b>17,718.95</b>	<b>63,180</b>	<b>\$53,836,369,000</b>

\* Includes one active project of 806 MW, an active solicitation for one or more projects for up to 3,600 MW, and additional developer lease areas closest in proximity to Massachusetts but could have offtake agreements with other states.

# Michigan

In Michigan, there are **99 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **16,545 megawatts** of clean power, **\$43,044,659,000** associated investment, and an estimated **49,689 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	13	1,294.50	10,356	\$2,341,100,000
Hydro	1	4,500.00	19,305	\$20,000,000,000
Nuclear	1	600.00	7,254	\$5,902,800,000
Onshore Wind	8	1,772.90	1,046	\$2,987,720,000
Solar	76	8,377.30	11,728	\$11,813,039,000
<b>Grand Total</b>	<b>99</b>	<b>16,544.70</b>	<b>49,689</b>	<b>\$43,044,659,000</b>

## Case Study:

The **Palisades Energy Center**, an 800-megawatt nuclear energy facility in **Covert Township, Michigan**, ceased operations in 2022. But, thanks to a \$1.5 billion conditional commitment for a loan guarantee from the U.S. Department of Energy’s Loan Programs Office – funded by the Inflation Reduction Act’s Energy Infrastructure Reinvestment program – the facility could be brought back online. The restored facility would deliver clean, reliable power to 800,000 homes, protect 600 good-paying jobs, and cut 4.47 million tons of carbon dioxide emissions per year.<sup>37</sup>

**Aaron Miller** is a Reactor Operator with the **Utility Workers Union of America Local 150**. He worked at Palisades Energy Center for nearly 30 years.



*“I’d like to see progress with new nuclear, and that will replace fossil fuels that have been phasing out while still maintaining a diverse energy supply. [...] One of the big advantages to nuclear other than low carbon is that [...] we’re not subject to supply chain challenges that coal and gas are subjected to. [Economically], with gas and coal, most of the cost goes to fuel and often that money goes farther away. With nuclear, a lot of the cost is payroll, which keeps the money close by in the surrounding areas.”*

<sup>37</sup> [“Biden-Harris Administration Announces \\$1.5 Billion Conditional Commitment to Holtec Palisades to Support Recommission of Michigan Nuclear Power Plant.” U.S. Department of Energy. March 27, 2024.](#)

*I monitor and operate the reactor and the support systems, as well as the turbine generating part of the plant. We watch the reactor and make adjustments. [...] We're watching temperature parameters, pressure parameters and make adjustments based on those readings and trends. We test a lot of equipment, specifically emergency equipment, and make sure it's working within specification."*

**– AARON MILLER**

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**Aurbery Watson** is the President of the **Utility Workers Union of America Local 150** who worked at the Palisades Energy Center decades ago and advocated for its reopening.<sup>38</sup> In a recent article for the Utility Workers Union of America's website, President Watson talked about the significance of the plant's reopening:

*"After the 2022 decision to shut down, we never stopped advocating for its re-opening. This funding infusion is a game changer and took our advocacy from being a pipedream to closer to reality. I started my career at the plant 23 years ago. There's tremendous excitement in the community, especially for those who are getting an opportunity to return home to Michigan to reclaim jobs that we thought were lost forever."*

**– AURBERY WATSON**

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**Sessili Szarafinski** is a first-year apprentice of the **Michigan Regional Council of Carpenters and Millwrights Local 525** restoring the Palisades Energy Center.

*"[Becoming a union member] has been life-changing. Collective bargaining is awesome. We have more choice in what we do. If people feel like they aren't being treated fairly, they will negotiate with the employer and the community will back them up.*

*It's really cool to work with skilled tradespeople who are knowledgeable, light-hearted, and fun. I really like what I do. When people ask what I do, I tell them that I build scaffolds. It sounds boring, but because we're doing it in a sensitive area, it's a lot more interesting than it sounds. I like the creativity of building in an awkward space.*

*I think renewable energy is really important. I hope we're moving towards that as fast as possible. I think the climate change we've experienced so far is really scary. I hope it's zooming along."*

**– SESSILI SZARAFINSKI**

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<sup>38</sup> ["Biden Administration Invests in New Future for Palisades."](#) Utility Workers Union of America, April 21, 2024.

## Minnesota

In Minnesota, there are **105 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **7,187 megawatts** of clean power, **\$11,092,021,000** associated investment, and an estimated **10,382 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	6	322.50	2,580	\$556,850,000
Hydro	5	87.00	373	\$268,000,000
Onshore Wind	9	2,542.90	1,500	\$4,426,040,000
Solar	85	4,234.90	5,929	\$5,841,131,000
<b>Grand Total</b>	<b>105</b>	<b>7,187.30</b>	<b>10,382</b>	<b>\$11,092,021,000</b>

## Mississippi

In Mississippi, there are **59 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **6,686 megawatts** of clean power, **\$9,954,980,000** associated investment, and an estimated **15,939 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	12	1,019.50	8,156	\$1,935,950,000
Onshore Wind	1	185.00	109	\$200,000,000
Solar	46	5,481.20	7,674	\$7,819,030,000
<b>Grand Total</b>	<b>59</b>	<b>6,685.70</b>	<b>15,939</b>	<b>\$9,954,980,000</b>

## Missouri

In Missouri, there are **35 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **4,816 megawatts** of clean power, **\$7,319,893,000** associated investment, and an estimated **9,545 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	6	471.50	3,772	\$619,650,000
Hydro	2	170.00	729	\$660,000,000
Onshore Wind	3	989.00	584	\$1,588,400,000
Solar	24	3,185.50	4,460	\$4,451,843,000
<b>Grand Total</b>	<b>35</b>	<b>4,816.00</b>	<b>9,545</b>	<b>\$7,319,893,000</b>

## Montana

In Montana, there are **40 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **7,093 megawatts** of clean power, **\$10,779,749,000** associated investment, and an estimated **16,473 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	12	1,372.50	10,980	\$2,307,250,000
Hydro	2	122.50	526	\$58,125,000
Onshore Wind	14	3,543.00	2,090	\$5,547,864,000
Solar	12	2,055.00	2,877	\$2,866,510,000
<b>Grand Total</b>	<b>40</b>	<b>7,093.00</b>	<b>16,473</b>	<b>\$10,779,749,000</b>

## Nebraska

In Nebraska, there are **20 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **3,047 megawatts** of clean power, **\$4,872,132,000** associated investment, and an estimated **3,508 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	2	70.00	560	\$160,000,000
Onshore Wind	9	1,506.10	889	\$2,630,232,000
Solar	9	1,470.70	2,059	\$2,081,900,000
<b>Grand Total</b>	<b>20</b>	<b>3,046.80</b>	<b>3,508</b>	<b>\$4,872,132,000</b>

## Nevada

In Nevada, there are **222 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **121,085 megawatts** of clean power, **\$208,918,798,000** associated investment, and an estimated **552,442 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	100	56,669.00	453,352	\$101,002,000,000
Geothermal	5	226.00	2,034	\$1,355,780,000
Hydro	1	600.00	2,574	\$2,500,000,000
Onshore Wind	1	400.00	236	\$600,000,000
Pumped Storage	1	2,000.00	8,580	\$7,600,000,000
Solar	114	61,190.10	85,666	\$95,861,018,000
<b>Grand Total</b>	<b>222</b>	<b>121,085.10</b>	<b>552,442</b>	<b>\$208,918,798,000</b>

## New Hampshire

In New Hampshire, there are **6 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential representing **921 megawatts** of clean power, **\$2,005,875,000** associated investment, and an estimated **5,154 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	2	500.00	4,000	\$1,025,000,000
Hydro	1	195.50	839	\$635,375,000
Solar	3	225.00	315	\$345,500,000
<b>Grand Total</b>	<b>6</b>	<b>920.50</b>	<b>5,154</b>	<b>\$2,005,875,000</b>

## New Jersey

In New Jersey, there are **58 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **11,343 megawatts** of clean power, **\$43,105,077,000** associated investment, and an estimated **22,019 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	7	135.25	1,082	\$271,100,000
Nuclear	1	300.00	3,627	\$2,951,400,000
Offshore Wind	7	10,200.00	16,320	\$38,845,840,000
Solar	43	707.48	990	\$1,036,737,000
<b>Grand Total</b>	<b>58</b>	<b>11,342.73</b>	<b>22,019</b>	<b>\$43,105,077,000</b>

## New Mexico

In New Mexico, there are **89 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **23,542 megawatts** of clean power, **\$34,724,377,000** associated investment, and an estimated **56,779 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	32	3,114.60	24,917	\$5,686,960,000
Hydro	4	3,963.00	17,001	\$9,069,000,000
Onshore Wind	6	10,110.00	5,965	\$10,869,000,000
Solar	47	6,354.50	8,896	\$9,099,417,000
<b>Grand Total</b>	<b>89</b>	<b>23,542.10</b>	<b>56,779</b>	<b>\$34,724,377,000</b>

## New York

In New York State, there are **547 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **45,852 megawatts** of clean power, **\$86,740,476,000** associated investment, and an estimated **169,941 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	163	15,790.20	126,322	\$21,213,580,000
Hydro	5	817.00	3,505	\$992,000,000
Offshore Wind	9	9,425.00	15,080	\$36,591,504,000
Onshore Wind	26	3,349.41	1,976	\$5,299,558,000
Solar	344	16,470.29	23,058	\$22,643,834,000
<b>Grand Total</b>	<b>547</b>	<b>45,851.90</b>	<b>169,941</b>	<b>\$86,740,476,000</b>



## Case Study:

**South Fork Wind** is a 132-megawatt offshore wind farm located 35 miles east of **Montauk Point on Long Island, New York** that was constructed with union labor. Completed in March 2024, the project's 12 turbines power 70,000 homes on Long Island. South Fork will eliminate up to 6 million tons of carbon emissions over the life of the project.<sup>39</sup>

**Aleshandra Fernandes** is a member of the **International Association of Bridge, Structural, Ornamental and Reinforcing Ironworkers Local 361** who worked on South Fork Wind.



*"I worked on South Fork, I was on the first phase getting those piles in and setting up. I lived on a boat for a month at a time. It was a learning curve, but it was actually quite nice living on the boat. I enjoyed it more than being on land. It was actually pretty cool because no one else has really done it, so I was really happy that me and my coworkers – the other Local 361 Ironworkers – were the first to do it. I was born in Southhampton, [Long Island]. The South Fork Wind project hit very close to home for me because it's my community."*

**– ALESHANDRA FERNANDES**

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<sup>39</sup> ["Governor Hochul Announces Completion of South Fork Wind, First Utility-Scale Offshore Wind Farm in the United States."](#) Governor Kathy Hochul, March 14, 2024.

## North Carolina

In North Carolina, there are **118 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **10,052 megawatts** of clean power, **\$26,661,952,000** associated investment, and an estimated **31,007 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	26	1,031.90	8,255	\$1,574,090,000
Geothermal	1	2.00	18	\$45,000,000
Nuclear	2	900.00	10,881	\$6,969,000,000
Offshore Wind	2	3,200.00	5,120	\$11,539,200,000
Onshore Wind	1	189.00	112	\$250,000,000
Solar	86	4,729.28	6,621	\$6,284,662,000
<b>Grand Total</b>	<b>118</b>	<b>10,052.18</b>	<b>31,007</b>	<b>\$26,661,952,000</b>

## North Dakota

In North Dakota, there are **17 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **4,108 megawatts** of clean power, **\$7,040,550,000** associated investment, and an estimated **4,507 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	2	150.00	1,200	\$285,000,000
Onshore Wind	12	2,758.20	1,627	\$5,123,400,000
Solar	3	1,200.00	1,680	\$1,632,150,000
<b>Grand Total</b>	<b>17</b>	<b>4,108.20</b>	<b>4,507</b>	<b>\$7,040,550,000</b>

## Ohio

In Ohio, there are **120 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **16,103 megawatts** of clean power, **\$31,446,374,000** associated investment, and an estimated **44,201 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	18	1,738.80	13,910	\$3,368,980,000
Hydro	7	43.00	184	\$166,750,000
Nuclear	3	954.00	11,534	\$9,385,452,000
Onshore Wind	3	174.90	103	\$299,820,000
Solar	89	13,192.70	18,470	\$18,225,372,000
<b>Grand Total</b>	<b>120</b>	<b>16,103.40</b>	<b>44,201</b>	<b>\$31,446,374,000</b>

## Oklahoma

In Oklahoma, there are **32 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **8,593 megawatts** of clean power, **\$14,797,510,000** associated investment, and an estimated **19,036 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	5	962.00	7,696	\$1,771,000,000
Hydro	1	1,200.00	5,148	\$2,700,000,000
Onshore Wind	13	3,470.10	2,047	\$6,170,379,000
Solar	13	2,960.70	4,145	\$4,156,131,000
<b>Grand Total</b>	<b>32</b>	<b>8,592.80</b>	<b>19,036</b>	<b>\$14,797,510,000</b>

## Oregon

In Oregon, there are **64 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **15,645 megawatts** of clean power, **\$31,162,851,000** associated investment, and an estimated **64,220 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	21	5,129.50	41,036	\$10,626,950,000
Hydro	5	1,909.90	8,193	\$4,926,175,000
Onshore Wind	6	1,248.60	737	\$1,926,248,000
Pumped Storage	3	1,368.60	5,871	\$5,200,680,000
Solar	29	5,988.00	8,383	\$8,482,798,000
<b>Grand Total</b>	<b>64</b>	<b>15,644.60</b>	<b>64,220</b>	<b>\$31,162,851,000</b>

## Pennsylvania

In Pennsylvania, there are **125 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **9,030 megawatts** of clean power, **\$23,850,113,000** associated investment, and an estimated **32,125 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	10	563.60	4,509	\$833,560,000
Hydro	13	1,306.90	5,607	\$3,590,025,000
Nuclear	1	924.00	11,171	\$9,090,312,000
Onshore Wind	5	459.05	271	\$873,892,000
Pumped Storage	1	858.00	3,681	\$3,260,400,000
Solar	95	4,918.40	6,886	\$6,201,924,000
<b>Grand Total</b>	<b>125</b>	<b>9,029.95</b>	<b>32,125</b>	<b>\$23,850,113,000</b>

# Rhode Island

In Rhode Island, there are **25 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **2,051 megawatts** of clean power, **\$6,249,227,000** associated investment, and an estimated **3,192 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Offshore Wind*	1	1,600.00	2,560	\$5,600,000,000
Solar	24	451.20	632	\$649,227,000
<b>Grand Total</b>	<b>25</b>	<b>2,051.20</b>	<b>3,192</b>	<b>\$6,249,227,000</b>

\* Includes one active project of 400 MW and active solicitation for one or more projects for up to 1,200 MW.

## Case Study:

**Robin Hollow Solar Project** is a 55-megawatt solar facility located in **West Greenwich, Rhode Island**. With about 80 union electricians onsite at the peak of the project's construction, the project was completed in late 2023. It now provides power to approximately 6,800 households.<sup>40</sup>

**Sidney Jablonski** is a third-year apprentice electrician in the **International Brotherhood of Electrical Workers Local 99**. She worked on Robin Hollow Solar for nine months.

*"I'm the first member of my family to be in a trade. [...] I tried college and it wasn't for me. I applied for the IBEW and haven't looked back since. More people should know that college isn't the only route you have to take.*

*Since solar became a thing we've been able to double our [apprenticeship] class size, and we're hoping it'll grow even more with solar and offshore wind. [...] I hope for a better environment and to get away from fossil fuels. [Clean energy] can help so many people in terms of the climate and the economy.*

**- SIDNEY JABLONSKI**

<sup>40</sup> Jennifer Pereira, "[A challenge so big, there's only way to solve it: together.](#)" Rhode Island Foundation, November 20, 2023.

## South Carolina

In South Carolina, there are **81 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **7,551 megawatts** of clean power, **\$13,486,072,000** associated investment, and an estimated **24,060 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	12	686.30	5,490	\$1,441,230,000
Hydro	1	1,700.00	7,293	\$1,200,000,000
Pumped Storage	1	1,400.00	6,006	\$5,320,000,000
Solar	67	3,764.69	5,271	\$5,524,842,000
<b>Grand Total</b>	<b>81</b>	<b>7,550.99</b>	<b>24,060</b>	<b>\$13,486,072,000</b>

## South Dakota

In South Dakota, there are **14 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **2,007 megawatts** of clean power, **\$5,837,160,000** associated investment, and an estimated **5,304 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Nuclear	1	320.00	3,869	\$3,148,160,000
Onshore Wind	6	1,144.00	675	\$1,925,200,000
Solar	7	543.00	760	\$763,800,000
<b>Grand Total</b>	<b>14</b>	<b>2,007.00</b>	<b>5,304</b>	<b>\$5,837,160,000</b>

# Tennessee

In Tennessee, there are **39 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **4,092 megawatts** of clean power, **\$11,145,331,000** associated investment, and an estimated **17,259 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	9	1,340.00	10,720	\$2,532,500,000
Hydro	1	800.00	3,432	\$5,600,000,000
Nuclear	1	35.00	423	\$344,330,000
Solar	28	1,916.95	2,684	\$2,668,501,000
<b>Grand Total</b>	<b>39</b>	<b>4,091.95</b>	<b>17,259</b>	<b>\$11,145,331,000</b>

# Texas

In Texas, there are **1,494 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **307,427 megawatts** of clean power, **\$484,582,704,000** associated investment, and an estimated **1,198,985 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	696	118,787.76	950,302	\$209,708,365,000
Hydro	2	81.00	347	\$293,000,000
Nuclear	1	320.00	3,869	\$2,500,000,000
Onshore Wind	90	25,914.40	15,289	\$38,807,263,000
Pumped Storage	1	666.00	2,857	\$2,530,800,000
Solar	704	161,657.98	226,321	\$230,743,276,000
<b>Grand Total</b>	<b>1,494</b>	<b>307,427.14</b>	<b>1,198,985</b>	<b>\$484,582,704,000</b>

## Case Study:

**Cottonwood Bayou Solar Project** is a 350-megawatt solar and energy storage project in **Liverpool, Texas** under construction by union workers.<sup>41</sup> The combination of solar and battery energy storage systems is an effective approach to addressing solar's inherent intermittency, expanding the capability to distribute energy to consumers at night and during cloudy conditions.<sup>42</sup> In March 2024, Texas generated more power from solar than from coal for the first time in history, thanks in part to projects like this one.<sup>43</sup>

**Allegra White** is a member of the **International Brotherhood of Electrical Workers Local 716** working as a construction wireperson on Cottonwood Bayou Solar.



*"I think it's very important to be a union member. [Unions] take care of you – you have the benefits, you have the security, and they really try to look out for you. My specific role is [quality checking], where I go through and make sure that everything's done right – That's with panels, that's with wires, that's with clips, that's with everything. I started [on Cottonwood Bayou Solar] at the beginning with nothing there, and I'm at the end now. It's pretty amazing how you can see the difference.*

*I've lived around in this area all my life, and I'm surrounded by nothing but polluting plants. You get the fumes, you get the pollution, you get everything, so it's very important that the clean energy comes in. [Solar energy] is more clean, it's better, and I think it's more efficient for us as a whole."*

**- ALLEGRA WHITE**

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<sup>41</sup> TotalEnergies. "[Discover Our Solar Projects](#)." Accessed July 25, 2024.

<sup>42</sup> Jian-Tang Liao et al. "[BESS-Sizing Optimization for Solar PV System Integration in Distribution Grid](#)." *IFAC-PapersOnLine*, Volume 51, Issue 28, 2018, Pages 85-90, ISSN 2405-8963, <https://doi.org/10.1016/j.ifacol.2018.11.682>. December 12, 2018.

<sup>43</sup> Julian Spector. "[Texas got more electricity from solar than coal last month](#)." *Canary Media*, April 10, 2024.



## Utah

In Utah, there are **50 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **14,291 megawatts** of clean power, **\$30,130,939,000** associated investment, and an estimated **50,580 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	7	1,062.25	8,498	\$2,049,800,000
Geothermal	3	435.00	3,915	\$1,427,260,000
Hydro	4	1,800.00	7,722	\$3,800,000,000
Onshore Wind	1	3.00	2	\$3,000,000
Pumped Storage	4	5,209.80	22,350	\$14,999,240,000
Solar	31	5,780.60	8,093	\$7,851,639,000
<b>Grand Total</b>	<b>50</b>	<b>14,290.65</b>	<b>50,580</b>	<b>\$30,130,939,000</b>

## Vermont

In Vermont, there are **19 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **97 megawatts** of clean power, **\$187,732,000** associated investment, and an estimated **215 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	3	12.00	96	\$25,200,000
Solar	16	84.70	119	\$162,532,000
<b>Grand Total</b>	<b>19</b>	<b>96.70</b>	<b>215</b>	<b>\$187,732,000</b>

# Virginia

In Virginia, there are **258 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **24,739 megawatts** of clean power, **\$57,696,323,000** associated investment, and an estimated **63,997 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	33	2,087.90	16,703	\$4,025,570,000
Hydro	6	365.44	1,568	\$759,000,000
Nuclear	1	1,500.00	18,135	\$14,757,000,000
Offshore Wind	2	3,440.00	5,504	\$13,099,520,000
Onshore Wind	2	2,712.00	1,600	\$4,881,600,000
Solar	214	14,633.30	20,487	\$20,173,633,000
<b>Grand Total</b>	<b>258</b>	<b>24,738.64</b>	<b>63,997</b>	<b>\$57,696,323,000</b>

# Washington

In Washington, there are **44 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **11,838 megawatts** of clean power, **\$28,617,300,000** associated investment, and an estimated **58,001 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	20	2,892.30	22,610	\$5,316,600,000
Hydro	3	4,350.00	18,662	\$8,200,000,000
Nuclear	2	1,010.00	12,211	\$10,036,980,000
Onshore Wind	3	620.00	366	\$826,800,000
Solar	16	2,966.00	4,152	\$4,236,920,000
<b>Grand Total</b>	<b>44</b>	<b>11,838.30</b>	<b>58,001</b>	<b>\$28,617,300,000</b>

## Case Studies:

**Seattle Public Schools (SPS)** expects to receive \$7.5 million through the Inflation Reduction Act's direct pay provision for installing ground source heat pumps and solar panels at **three elementary schools in 2023**, helping to reduce emissions and energy costs at public schools.<sup>44,45</sup> These projects were built by union workers, thanks in part to Seattle Public Schools' Student and Community Workforce Agreement, which includes a pre-apprenticeship and a priority hiring program that helps connect SPS students, their families, and workers from non-traditional backgrounds to high-quality construction careers.<sup>46</sup>

**Shaun Thomas** is a commercial service technician and member of the **International Association of Sheet Metal, Air, Rail and Transportation Workers (SMART) Local 66** who worked on Kimball Elementary School in Seattle, Washington installing heat pumps.

*"When I'm in the union, I'm not on my own. I have people representing me. It makes it a much better [working] environment where you don't have to rely on just yourself to get where you want to go. You have the membership to help you out.*

*[Kimball Elementary] was a pretty interesting school. It was very big with interesting features. [...] [Clean energy is] better for the environment. It reduces our impact on the world. I think it's important that we push towards clean energy, we just need to make sure we do it in a responsible manner."*

**- SHAUN THOMAS**

**Patrick Olson** is a member of the **International Association of Sheet Metal, Air, Rail and Transportation Workers (SMART) Local 66** and the owner of a union contractor who worked on Kimball Elementary and is currently working on Asa Mercer Middle School.



*"I've been working in the trade union for 23 years. As an owner, I like being union. The union hall brings apprentices in, trains them up, ensures that our jobs are done well and done with good wages and benefits. To me, our type of projects should be built, delivered, and installed by a union contractor.*

<sup>44</sup> ["FACT SHEET: Biden-Harris Administration Hosts First-Ever White House Summit for Sustainable and Health Schools."](#) White House, April 26, 2024.

<sup>45</sup> Bellamy Pailthorp. ["Seattle Public Schools' climate solution captures \\$7.5M from White House."](#) KNKX, May 21, 2024.

<sup>46</sup> ["Student and Community Workforce Agreement."](#) Seattle Public Schools. Accessed July 25, 2024.

*The majority of the work [I do as a contractor] is done with prevailing wage and [is] government/state-owned. So, if there is a non-union bid, they must adhere to the prevailing wage set by the state and those wages are very competitive to the union wages."*

**– PATRICK OLSON**

**Horse Heaven Clean Energy Center** is a proposed hybrid wind, solar, and battery storage project south of the Tri-Cities that, when completed, would produce up to 1,150 megawatts of clean energy and create as many as 930 construction jobs.<sup>47</sup> The hybrid approach that combines multiple sources of clean energy along with battery storage will help stabilize grids, increase efficiencies, and lower power costs.

**Greg Gales** is President of the **International Association of Bridge, Structural, Ornamental and Reinforcing Ironworkers Local 14**, whose members will work on Horse Heaven Clean Energy Center.



*"This project is a huge opportunity to create hundreds of high-quality union jobs for workers in the Tri-Cities region while building clean energy to help tackle the climate crisis. With the historic incentives from the Inflation Reduction Act and Washington State's leadership and investments in clean energy, Washington State isn't missing a beat when it comes to going big on union jobs, clean power, and equity."*

**– GREG GALES**

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<sup>47</sup> Scout Clean Energy. "[Horse Heaven Clean Energy Center](#)." Accessed July 25, 2024.

## West Virginia

In West Virginia, there are **39 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **2,907 megawatts** of clean power, **\$5,069,338,000** associated investment, and an estimated **9,297 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	5	580.00	4,640	\$1,145,500,000
Hydro	8	311.00	1,334	\$586,178,000
Onshore Wind	1	264.00	156	\$211,000,000
Pumped Storage	2	247.00	1,060	\$938,600,000
Solar	23	1,504.90	2,107	\$2,188,060,000
<b>Grand Total</b>	<b>39</b>	<b>2,906.90</b>	<b>9,297</b>	<b>\$5,069,338,000</b>

## Wisconsin

In Wisconsin, there are **82 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **11,833 megawatts** of clean power, **\$18,124,489,000** associated investment, and an estimated **42,366 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	26	3,620.00	28,960	\$6,657,350,000
Hydro	3	1,042.00	4,470	\$1,665,000,000
Onshore Wind	5	1,361.60	803	\$1,780,000,000
Solar	48	5,809.10	8,133	\$8,022,139,000
<b>Grand Total</b>	<b>82</b>	<b>11,832.70</b>	<b>42,366</b>	<b>\$18,124,489,000</b>

## Case Studies:

**Apple River Solar Project** is a 100-megawatt solar project under construction by union workers located in **Polk County, Wisconsin**. Construction began in summer 2024, one of the first utility-scale clean energy developments to break ground following a historic pledge from four major Wisconsin utilities to hire a union workforce for all of their solar, wind, and battery projects for years to come.<sup>48</sup> Upon completion, Apple River is expected to offset nearly 150,000 metric tons of carbon dioxide emissions each year.<sup>49</sup>

**Alexander Martin** is a member of the **North Central States Regional Council of Carpenters Local 1074** working on Apple River Solar.

*"Union Carpenters cannot be more excited for being a part of construction on the Apple River solar site in Northwest Wisconsin. Not only will it result in dozens of jobs for Carpenters, it provides local residents the opportunity for apprenticeships leading to rewarding careers, all while reducing carbon dioxide emissions."*

### – ALEXANDER MARTIN

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The Menasha Joint School District is currently building **Maplewood Middle School** in **Menasha, Wisconsin**, a new net-zero public middle school for 1,000 students. When completed, the school will be equipped with rooftop solar panels, battery energy storage, a microgrid, geothermal heat pumps, and dedicated outdoor air units. In total, this will generate 1.15 megawatts of clean energy and save the district approximately \$135,000 per year on energy costs. In addition to these expected energy savings, the district plans to fund these clean energy technologies by utilizing direct pay or elective pay tax incentives from the Inflation Reduction Act. Union workers are building the school, and the district expects 150 workers onsite at the height of construction. The school is planned to open for the 2025-26 school year.<sup>50</sup>

**Jeff Green** is a sheet metal worker in the **International Association of Sheet Metal, Air, Rail and Transportation Workers (SMART) Local 18**. SMART Local 18 members working on Maplewood Middle School are installing ductwork that uses recycled materials.

*"I've been a union sheet metal worker for 35 years. The pay and benefits are better, and I really enjoy getting to teach and pass on what I have learned in my career to the younger journeymen and apprentices on the jobsite. We all go through the apprenticeship program, so it's nice to know there is a certain standard you can expect when you get new workers on site."*

### – JEFF GREEN

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<sup>48</sup> ["Wisconsin utilities pledge to use union labor for clean energy construction."](#) Milwaukee Journal Sentinel. March 6, 2024.

<sup>49</sup> National Grid Renewables. ["Apple River Solar Project."](#) Accessed July 25, 2024.

<sup>50</sup> ["How to Cut Energy Costs Using Direct Pay for Public Buildings and How Local Unions Can Benefit."](#) BlueGreen Alliance, Video, May 21, 2024.

# Wyoming

In Wyoming, there are **43 clean energy generation and storage projects** in the development pipeline – planned, under construction, or recently completed – that could be eligible for various tax incentives tied to labor standards under the Inflation Reduction Act, representing a potential **19,411 megawatts** of clean power, **\$46,587,331,000** associated investment, and an estimated **61,976 jobs**.

Technology	Number of Projects	Planned Capacity (MW)	Job Creation Potential	Estimated Investment
Battery	6	1,515.00	12,120	\$3,181,500,000
Hydro	5	2,298.00	9,858	\$4,646,000,000
Nuclear	1	2,225.00	26,900	\$18,662,500,000
Onshore Wind	16	8,366.80	4,936	\$12,162,780,000
Pumped Storage	1	399.00	1,712	\$1,516,200,000
Solar	14	4,607.00	6,450	\$6,418,351,000
<b>Grand Total</b>	<b>43</b>	<b>19,410.80</b>	<b>61,976</b>	<b>\$46,587,331,000</b>

# Conclusion

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The Inflation Reduction Act (IRA), combined with the Infrastructure Investment and Jobs Act (IIJA) and the CHIPS and Science Act (CHIPS), represent the largest investment in climate action in U.S. history and the first time in decades that the federal government has made it a national policy to raise living standards and reduce inequality in key sectors of the economy.

**Our analysis finds that 6,285 utility-scale clean energy generation and storage projects are either planned, under construction, or recently completed and could be eligible for IRA incentives with associated labor standards across America. This clean energy boom therefore represents an enormous opportunity to address the climate crisis while lifting the pay and quality of clean energy jobs across the country.**

But whether the IRA fulfills its potential—to slash carbon emissions, create high-quality jobs, and advance equity—will depend on effective implementation of the Act’s incentives and associated labor standards. The stakes are high for the millions of workers on the frontlines of the dual crises of climate change and inequality. Over the past four decades, workers have experienced a serious stagnation in real earnings as the gap between productivity and wages widens.<sup>51</sup> This has contributed to a dramatic increase in income inequality, compounded by attacks on workers that have diminished collective bargaining rights and union membership. At the same time, the climate crisis is hitting working people first and worst,<sup>52</sup> as low-income neighborhoods and communities of color are often more vulnerable to the impacts of climate change, and extreme weather and heat create dangerous working conditions.<sup>53</sup>

**Unions are key to maximizing the IRA’s potential to help tackle these dual crises.**

To maximize the emissions reduction potential of the IRA and meet national climate goals, the U.S. needs to build clean energy infrastructure at an unprecedented speed and scale. But clean energy projects must often surmount hurdles at the federal, state, and local levels in order to get built, including siting and permitting obstacles, long interconnection queues, and supply chain challenges.<sup>54</sup> Unions play a crucial role in accelerating the development of these projects by ensuring a highly-skilled, well-trained, and reliable workforce that can execute large-scale, complex projects effectively and efficiently. Utilizing union labor can achieve cost savings, greater productivity, improved quality, and higher levels of safety for workers, ensuring that the massive

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<sup>51</sup> Hannah Sachs & David Foster. “[Job Quality—The Keystone of Clean Energy Industrial Policy](#).” *EFI Foundation*. August 2023.

<sup>52</sup> Max Kiefer et al. “[Climate Change and Occupational Safety and Health](#).” *Center for Disease Control and Prevention*, September 22, 2014.

<sup>53</sup> “[Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts](#).” *Environmental Protection Agency*, September 2021.

<sup>54</sup> “[Clean Power Measures in U.S. Climate Policy](#)” *World Resource Institute*.



number of clean energy projects planned across the country can be built at the scale and speed science demands.<sup>55,56</sup>

Unions are equally critical to maximizing the IRA's potential to create high-quality jobs and redress inequality. Effective implementation and enforcement of the IRA's labor standards will be key to ensuring the jobs created through federal clean energy investments do not replicate or exacerbate existing trends in the clean energy sector of low wages, low-road working conditions, lack of adequate training, and scant health and safety protections.<sup>57</sup> A recent study from Cornell University's Climate Jobs Institute found that, in New York State, non-union clean energy workers often do not receive health and retirement benefits, regularly face safety issues on the job, and are often paid per piece installed.<sup>58</sup> Wide racial disparities exist among non-unionized clean energy workers in terms of pay and job quality.<sup>59</sup> Union membership is the single most reliable way to improve job quality, as family-sustaining union wages reduce racial and gender pay gaps and raise wage standards across an entire industry.<sup>60</sup> Yet, union density in the clean energy sector remains low, lagging behind that of the traditional or fossil-fuel-based energy sectors.<sup>61</sup>

With unions leading the way, the IRA's historic investments and labor standards could ensure clean energy projects continue to be built efficiently and effectively while creating lifelong careers with family-sustaining wages and benefits, essential safety protections, retirement security, and training pathways that do not require a college degree and expand access to these high-quality jobs for people from low-income and disadvantaged communities. For example, in the nearly two dozen states that do not set prevailing wage laws,<sup>62</sup> the application of federal prevailing wage requirements to clean energy projects receiving enhanced IRA incentives is a significant opportunity to lift pay for clean energy workers in those states. The IRA's apprenticeship utilization requirements will scale up opportunities for workers to enter into lifelong union careers in the clean energy sector and grow a skilled and diverse workforce<sup>63</sup> through partnerships with pre-apprenticeship or apprenticeship readiness programs that recruit, train, and retain workers from underrepresented communities.<sup>64</sup>

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<sup>55</sup> Michael McFadden, Sai Santosh, & Ronit Shetty. "Quantifying the Value of Union Labor in Construction Projects." Independent Project Analysis. October 2022.

<sup>56</sup> Frank Manzo IV, Michael Jekot, & Robert Bruno. "[The Impact of Unions on Construction Worksite Health and Safety: Evidence from OSHA Inspections.](#)" *Illinois Economic Policy Institute*. November 30, 2021.

<sup>57</sup> Sachs & Foster.

<sup>58</sup> Avalon Hoek Spaans & Jillian Morley. "[Exploring the Conditions of the New York Solar Workforce.](#)" *Cornell University's Climate Jobs Institute*. April 25, 2024.

<sup>59</sup> Hoek Spaans & Morley.

<sup>60</sup> "[Unions help reduce disparities and strengthen our democracy.](#)" *Economic Policy Institute*. April 23, 2021.

<sup>61</sup> "[Making Clean Deliver](#)" *Blue Green Alliance*. 2021.

<sup>62</sup> "[Dollar Threshold Amount for Contract Coverage.](#)" *U.S. Department of Labor*. Last updated January 1, 2023.

<sup>63</sup> "[Enhance Your Skills. Advance Your Life.](#)" *North America's Building Trades Unions*, September 2021.

<sup>64</sup> Cunningham & Shetler.

The final regulations implementing the IRA’s labor standards also include an incentive<sup>65</sup> for developers to enter into Project Labor Agreements (PLAs)—pre-hire collective bargaining agreements negotiated between employers and construction unions—that will help developers easily meet the IRA’s labor standards to maximize their federal tax credits and tap into a trained union workforce to avoid project delays and get projects built on time and budget. This could help increase the share of clean energy jobs that are high-quality union jobs and ensure that working people and local communities see the full benefits of the IRA’s investments in clean energy.

**This analysis finds that the Inflation Reduction Act has already unlocked sweeping investments in the clean energy sector that could transform the U.S. economy. Unions will play a key role in maximizing the IRA’s potential to tackle the most pressing issues of our time: climate change and inequality.**

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<sup>65</sup> Compliance with the prevailing wage and apprenticeship requirements is easier if the work is done pursuant to a Project Labor Agreement (PLA). Specifically, taxpayers with projects subject to qualifying PLAs do not need to pay penalties if the IRS finds that the taxpayers have any prevailing wage and apprenticeship violations, provided that correction payments are made to workers. (Department of Treasury & Internal Revenue Service. "[Increased Amounts of Credit or Deduction for Satisfying Certain Prevailing Wage and Registered Apprenticeship Requirements.](#)" *Federal Register* 89, No. 122. June 25, 2024.)