

## Clean Energy Tax Credits: An Economic Impact Analysis

The Nature Conservancy (TNC) commissioned BW Research to conduct this study to analyze the estimated economic impacts of the 2022 clean energy tax credits. This report evaluates the federal tax incentives outlined in climate policies passed in the 2022 Inflation Reduction Act and their effects on the U.S. economy between 2025 and 2031. To analyze the seven years of economic impacts, BW Research grouped \$170.8 billion in federal tax credits into four sectors: Power, Industry, Buildings, and Transportation. This report outlines the impacts of these climate tax credits on national employment, Gross Domestic Product (GDP), Employee Wages, and Tax Revenue for local, state, and federal governments.

### Key Findings

The \$170.8 billion in tax credits passed in 2022 create an impact of:

- More than 285,300 jobs supported annually for 7 years, totaling 1,997,100 job-years. This represents about 11.7 jobs for every million dollars from the federal government.
- Close to \$32.5 billion in annual GDP (Value Added), a return of \$1.33 in GDP for each federal dollar invested.
- Over \$16.0 billion in annual employee compensation for 7 years.
- More than \$4.1 billion in annual local, state, and federal tax revenue for 7 years.

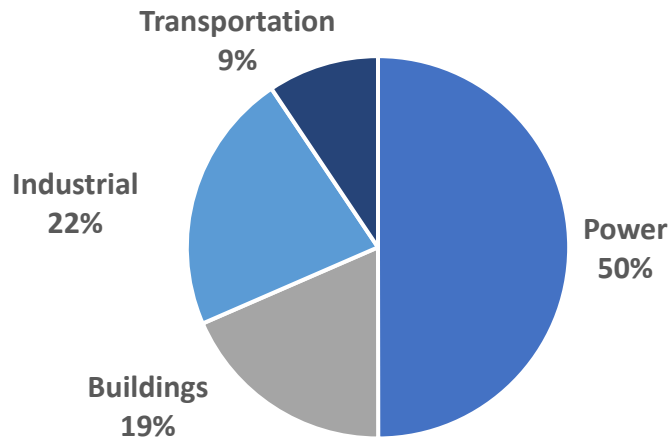
Investments from the federal government and the total estimated investment, accounting for potential private investments, by policy group are shown below.

**TABLE 1. TOTAL INVESTMENT BY POLICY GROUP, 2025 - 2031**

Policy Group	Federal Investment (\$ Billions)	Total Investment (\$ Billions)
Power	\$85.4	\$496.1
Buildings	\$31.6	\$235.5
Industrial	\$37.8	\$324.2
Transportation	\$16.1	\$25.9
<b>Total Investment</b>	<b>\$170.8</b>	<b>\$1,081.8</b>

About half of the federal tax credit dollars are in the Power sector, coming from the credits defined in sections 45Y, 48E, and 45U of the tax revenue code. The Industrial sector represents 22% of all the federal tax credits, Buildings represents nearly 19%, and Transportation is about 9% of the federal tax credits analyzed.

FIGURE 1. FEDERAL INVESTMENT DISTRIBUTION BY POLICY GROUP



The \$170.8 billion in tax credits across the U.S. support over 285,000 annual jobs, on average, for 7 years. More than 103,000 of these jobs are in activities directly related to the four policy groups. The U.S. economy would also benefit from an additional \$32.48 billion in GDP and over \$16.01 billion in wages annually through the end of 2031. Investments spurred by these tax credits would generate additional tax revenue for the federal government of nearly \$1.55 billion annually, accompanied by \$1.24 billion in tax revenue to local governments and \$1.34 billion for state governments. For further details on the types of economic impacts, please see Appendix B: Industry and Occupational Definitions.

TABLE 2. IMPACTS BY IMPACT TYPE, ALL POLICY GROUPS

	Jobs	GDP	Employee Wages	Taxes	
<b>Direct</b>	103,017	\$12,679,936,943	\$6,584,113,063	<b>Local</b>	\$1,343,239,145
<b>Indirect</b>	63,817	\$10,199,150,996	\$4,777,380,031	<b>State</b>	\$1,235,027,645
<b>Induced</b>	118,476	\$9,597,696,743	\$4,651,703,666	<b>Federal</b>	\$1,549,109,231
<b>Total</b>	<b>285,310</b>	<b>\$32,476,784,682</b>	<b>\$16,013,196,760</b>	<b>Total</b>	<b>\$4,127,376,021</b>

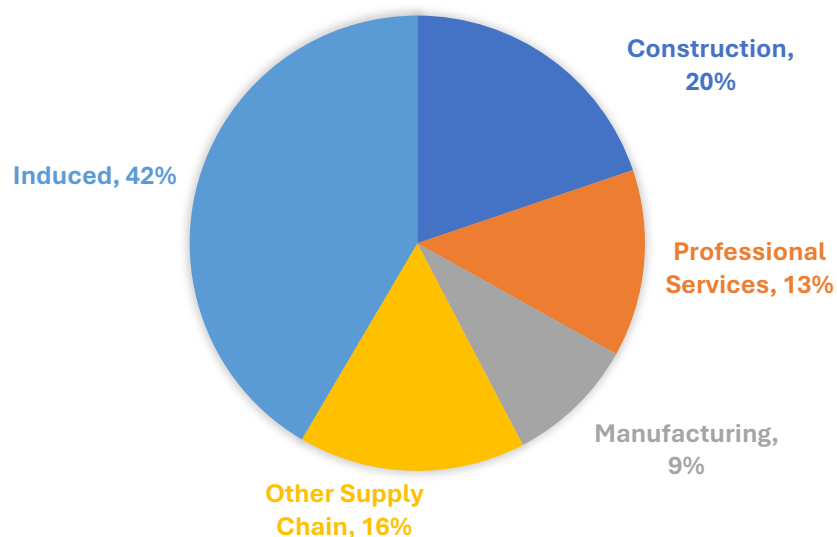
Employment generated in the Power sector represents about 41% of all the employment generated from tax credits in the four sectors. Economic impacts from the Power sector tax credits also represent nearly half of the GDP contributions (48%), 42% of the wages, and 70% of the tax revenue generated annually in the four sectors. Tax credits from the Buildings and Industrial sectors combined could support an average of 136,300 jobs annually between 2025 and 2031.

TABLE 3. TOTAL IMPACTS BY POLICY GROUP

Policy Group	Jobs	GDP	Employee Wages	Taxes
Power	117,915	\$15,428,679,675	\$6,803,336,361	\$2,908,395,174
Buildings	71,517	\$6,731,667,918	\$3,632,408,585	\$393,484,948
Transportation	32,102	\$3,291,247,594	\$1,682,504,443	\$574,640,626
Industrial	63,776	\$7,025,189,494	\$3,894,947,371	\$250,855,274
<b>Total</b>	<b>285,310</b>	<b>\$32,476,784,682</b>	<b>\$16,013,196,760</b>	<b>\$4,127,376,021</b>

The 285,310 jobs generated by these policies are in the following five industry categories:

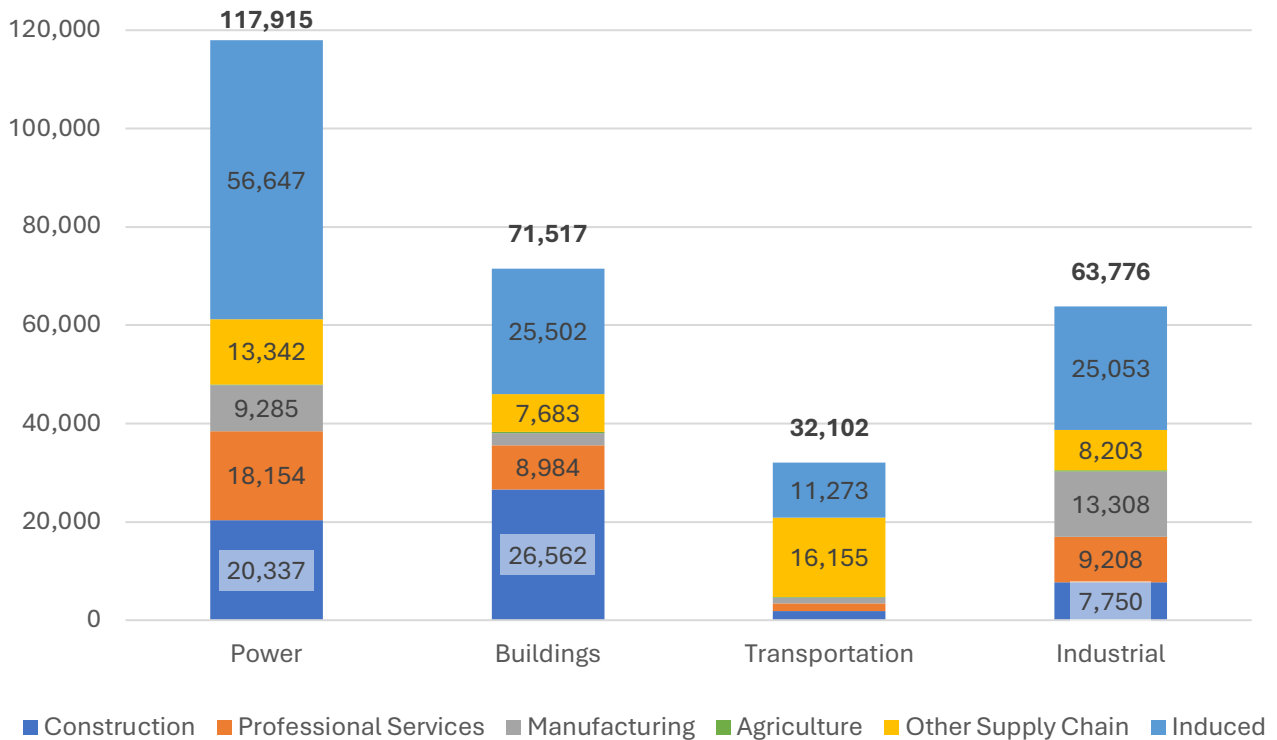
FIGURE 2. TOTAL JOBS BY INDUSTRY



The Power sector is expected to support over 20,300 jobs in Construction, 18,200 jobs in Professional Services, and 9,300 jobs in Manufacturing yearly, on average, due to these tax credits. The economic impact in the Power sector is also expected to support more than 56,600 induced jobs in the economy due to the increased economic activity and the additional worker income. About 37% of the jobs in the Buildings sector are in the

Construction industry, totaling nearly 26,600 jobs per year, on average. Tax credits in the Industrial sector result in over 13,300 annual jobs in Manufacturing, about 21% of all the jobs in the sector, while Transportation jobs are concentrated in Other Supply Chain industries, largely in Vehicle Retail, as more individual and commercial Electric Vehicle incentives are made available to stimulate vehicle sales.

FIGURE 3. INDUSTRY JOBS BY POLICY GROUP



Among the direct and indirect jobs generated by the policies, or jobs created in the Construction, Professional Services, Manufacturing, and Other Supply Chain industries, job impacts are further analyzed across six occupational categories:

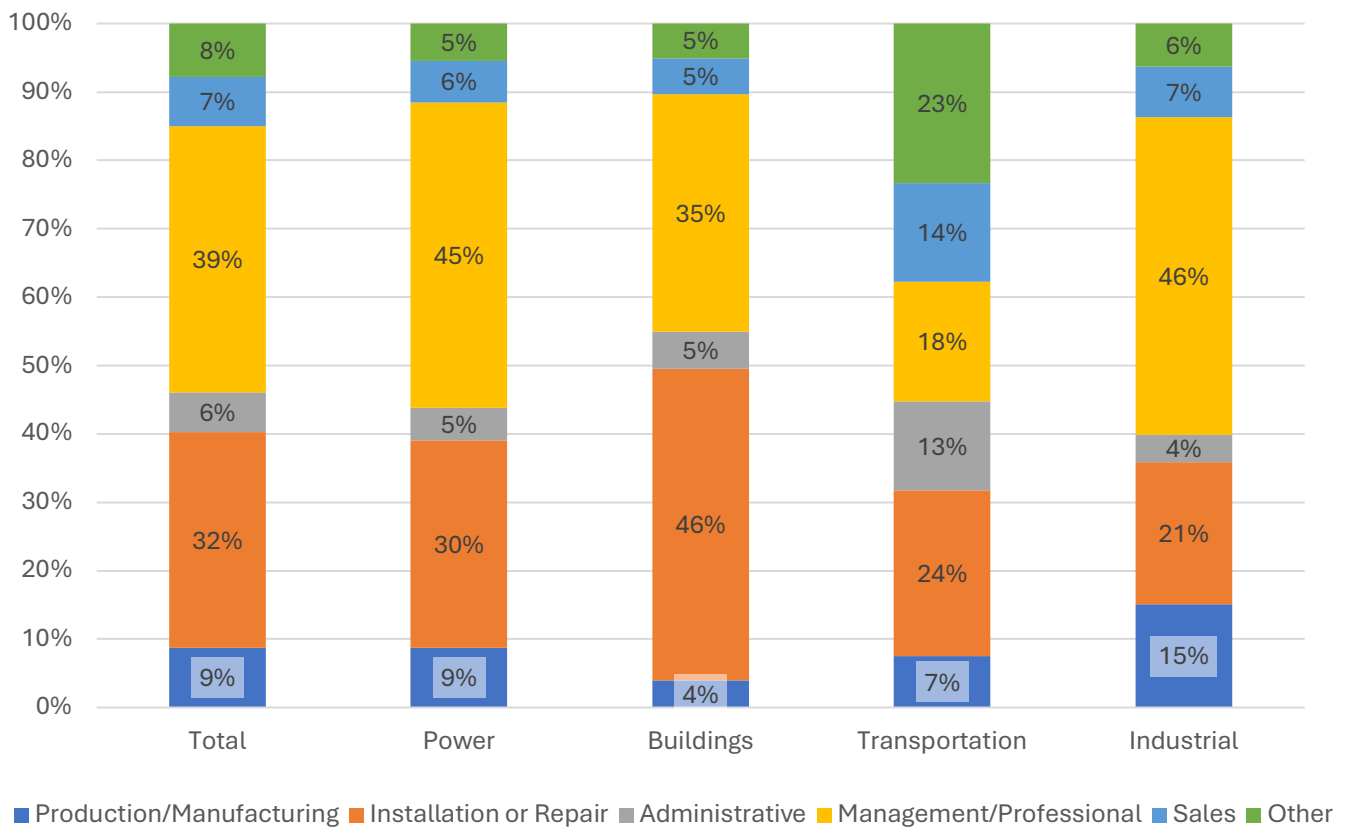
- Production/Manufacturing
- Installation or Repair
- Administrative
- Management/Professional
- Sales
- Other.<sup>1</sup>

<sup>1</sup> The “Other” occupational group includes employment in transportation and material moving occupations, farming, fishing, and forestry occupations, and community and social service occupations, among others.

We omit induced impacts in the occupational analysis and capture only the 166,800 direct and induced jobs to best highlight activities most directly related to the tax credits analyzed in the report.

Most of the jobs generated from the tax credits are in Installation or Repair or Management/Professional occupations. The tax credits analyzed in this report are expected to support over 166,800 direct and indirect jobs annually. More than 64,900 are in Management/Professional occupations, and about 52,600 are in the Installation or Repair occupational group. There are about 14,600 jobs in Production/Manufacturing occupations annually, largely from the Industrial and Power sectors.

FIGURE 4. OCCUPATIONAL DISTRIBUTION BY POLICY GROUP AND TOTAL



## Methodology

BW Research analyzed 22 climate tax credits totaling \$170.8 billion across four large sectors to understand their impacts on jobs, GDP, wages, and tax revenue in the U.S. and a set of individual states. Economic impacts were estimated using custom IMPLAN Input-Output models. These models use industry multipliers that estimate the flow of initial investments through local, state, and national economies.

BW Research used budget estimates from the Congressional Budget Office by policy as model inputs. The policies and amount of federal tax credits are shown below.

Sector	Policy	Section	Tax Credit Value (2025 - 2031), \$ Billions		
Power	S.45 - PTC Ext	45Y	\$47.32	27.7%	<b>\$ 85.39</b>
	S.48 - ITC Ext	48E	\$10.26	6.0%	
	Nuclear Tax Credit	45U	\$27.81	16.3%	
Buildings	Nonbusiness Energy Property Credit	25C	\$9.22	5.4%	<b>\$31.59</b>
	Residential Energy Efficient Property	25D	\$20.54	12.0%	
	Energy-Efficient Commercial Buildings Deduction	179D	\$0.25	0.1%	
	New Energy Efficient Home Credit	45L	\$1.58	0.9%	
Industrial	Advanced Energy Project	48C	\$3.42	2.0%	<b>\$37.77</b>
	Advanced Manufacturing Production	45X	\$26.37	15.4%	
	Zero Emission Facility	45Q	\$2.88	1.7%	
	Clean Hydrogen	45V	\$5.11	3.0%	
Transportation	Sustainable Aviation Fuel Credit	40B	\$0.01	0.0%	<b>\$16.08</b>
	PEV Individual Tax Credit	30D	\$8.51	5.0%	
	Commercial EV Tax Credit	45W	\$3.91	2.3%	
	Used EV	25E	\$1.15	0.7%	
	EV Charging /Alt-Fuel Tax Credit	30C	\$1.47	0.9%	
	Biodiesel, renewable diesel, alternative fuel credit	40A	\$1.02	0.6%	
	2nd gen biofuel incentive ext	40(b)(6)(j)(i)	\$0.01	0.0%	
			<b>\$170.83</b>		

## Appendix A: Detailed Policy Group Output Tables

POWER ANNUAL AVERAGE IMPACTS					
	Jobs	Value Added	Employee Compensation	Taxes	
Direct	36,950	\$6,221,647,851	\$2,733,796,575	Local	\$1,130,790,131
Indirect	24,318	\$5,640,592,194	\$2,347,189,769	State	\$971,415,440
Induced	56,647	\$3,566,439,630	\$1,722,350,017	Federal	\$806,189,604
<b>Total</b>	<b>117,915</b>	<b>\$15,428,679,675</b>	<b>\$6,803,336,361</b>	<b>Total</b>	<b>\$2,908,395,174</b>

BUILDINGS ANNUAL AVERAGE IMPACTS					
	Jobs	Value Added	Employee Compensation	Taxes	
Direct	30,991	\$2,597,377,047	\$1,561,610,130	Local	\$72,325,427
Indirect	15,024	\$1,647,013,813	\$862,260,514	State	\$87,422,019
Induced	25,502	\$2,487,277,059	\$1,208,537,941	Federal	\$233,737,502
<b>Total</b>	<b>71,517</b>	<b>\$6,731,667,918</b>	<b>\$3,632,408,585</b>	<b>Total</b>	<b>\$393,484,948</b>

TRANSPORTATION ANNUAL AVERAGE IMPACTS					
	Jobs	Value Added	Employee Compensation	Taxes	
Direct	14,964	\$1,572,753,413	\$827,764,104	Local	\$100,991,509
Indirect	5,864	\$618,466,417	\$320,559,717	State	\$124,984,127
Induced	11,273	\$1,100,027,764	\$534,180,622	Federal	\$348,664,991
<b>Total</b>	<b>32,102</b>	<b>\$3,291,247,594</b>	<b>\$1,682,504,443</b>	<b>Total</b>	<b>\$574,640,626</b>

INDUSTRIAL ANNUAL AVERAGE IMPACTS					
	Jobs	Value Added	Employee Compensation	Taxes	
Direct	20,112	\$2,288,158,632	\$1,460,942,254	Local	\$39,132,079
Indirect	18,611	\$2,293,078,572	\$1,247,370,031	State	\$51,206,059
Induced	25,053	\$2,443,952,291	\$1,186,635,086	Federal	\$160,517,136
<b>Total</b>	<b>63,776</b>	<b>\$7,025,189,494</b>	<b>\$3,894,947,371</b>	<b>Total</b>	<b>\$250,855,274</b>

## Appendix B: Industry and Occupational Definitions

Initial employment outputs (IEO) show three types of economic effects:

**Direct Effects:** economic impacts associated with the initial investment or activity. For this research, direct jobs range from construction workers building and improving manufacturing facilities to sales, administrative, and production employees in the O&M phase.

**Indirect Effects:** include all the supply chain impacts resulting from the initial direct economic activity. An example of an indirect job is a new worker at a lumber mill hired to handle the increased demand for construction lumber resulting from the initial investment.

**Induced Effects:** result from increased household spending and direct and indirect workers spending their wages in the local economy. An example of an induced job is a new worker at a local restaurant because construction workers during the construction phase and salespeople during the operations phase have new disposable income and eat at this local restaurant.

IEOs are split into the following five industry groups:

- Construction
- Professional Services
- Manufacturing
- Other Supply Chain<sup>2</sup>
- Induced

SEOs split direct and indirect employment into the following occupational groups, delineated at the 2-digit Standard Occupational Classification (SOC) level:

- Production/Manufacturing: occupations on SOC 51
- Installation or Repair: occupations on SOC 37, 47, 49
- Administrative: occupations on SOC 43
- Management/Professional: occupations on SOC 11, 13, 15, 17, 19, 23
- Sales: occupations on SOC 41
- Other: occupations on SOC 21, 25, 27, 29, 31, 33, 35, 39, 45, 53

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<sup>2</sup> Includes Agriculture, Distribution, Information, Retail and Wholesale Trade, and Utilities workers, among others.