Clean Jobs Colorado 2023[1]

COLORADO CLEAN ENERGY JOBS GROW 4.6%; IMPACT OF NEW CLIMATE POLICIES JUST BEGINNING

Colorado's clean energy sector employed 63,780 workers at the end of 2022

KEY FINDINGS

#7 for renewable generation jobs in U.S. with 18,022

4% of all net new jobs in Colorado were in clean energy

20K clean energy jobs are in construction

2.2X more clean energy jobs than fossil fuel jobs

2,700 new clean energy jobs added in 2022

SECTOR SUMMARY HIGHLIGHTS

CLEAN ENERGY OVERALL: Colorado's clean energy workforce added 2,790 new workers in 2022, growing 4.6 percent and adding jobs at a much faster rate than the state's overall employment, which grew 2.4 percent. The state ranked 18th for largest clean energy workforce nationally for 2022, with 63,780 clean energy jobs in total. The bulk of the workforce were in the construction and professional services industries, accounting for 20,784 jobs and 35,717 jobs respectively. In 2022, clean energy account for over 2.2 times more jobs than fossil fuels in Colorado. Two Colorado counties made the top 100 list for most clean energy jobs in the nation: Denver (12,692 jobs) and Arapahoe (7,354 jobs).

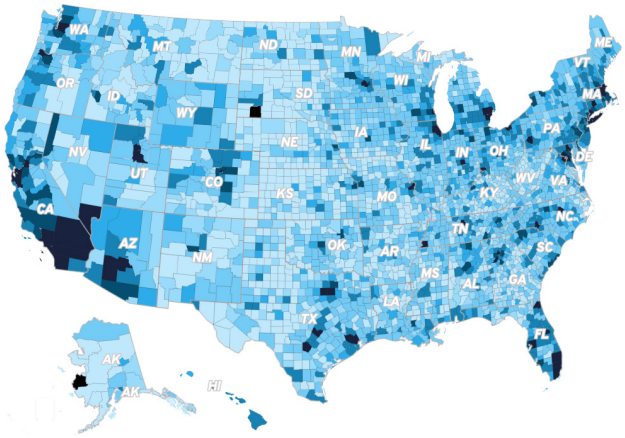
RENEWABLE GENERATION: Renewable generation grew 2.3 percent in 2022, bringing Colorado's renewable generation workforce to 18,022 individuals–the seventh largest in the country. Solar and wind account for the majority of the sector's workforce with 8,473 jobs and 7,741 jobs respectively.

ENERGY EFFICIENCY: Energy efficiency is Colorado's largest clean energy sector with 35,847 workers. The sector grew 4.8 percent in 2022, the fifth fastest growing energy efficiency workforce in the nation.

STORAGE AND GRID MODERNIZATION: Jobs in battery, storage, and grid modernization grew 6.4 percent in 2022, making the sector the second fastest growing clean energy sector in the state behind clean vehicles. Colorado's storage and grid modernization workforce totaled 3,240 in 2022–the 15th largest in the nation.

CLEAN VEHICLES: The clean vehicles sector has the fastest growing workforce in Colorado's clean energy industry, growing 13.7 percent in 2022 to employ a total of 4,693 workers. The sector grew much faster than the gas/diesel vehicles sector in Colorado, which grew 3.7 percent in 2022.

BIOFUELS: Colorado's biofuels workforce makes up the smallest clean energy sector in the state with 365 total jobs. The biofuel workforce was the state's only clean energy workforce to shrink in 2022, with a growth rate of -0.5 percent.



EXPLORE THE DATA FURTHER

Dive deeper into in this report further at www.cleanjobsamerica.e2.org to explore the latest state and county clean energy employment data across the entire U.S., including national and statewide rankings by total clean energy jobs, jobs per capita, and employment growth.

For information on methodology and this report's analysis—including what technologies and sectors are counted as clean energy, what jobs are not counted, definitions of clean energy sectors and subsectors, and more—visit www.cleanjobsamerica.e2.org.

COSSA Colorado Solar & Storage Association

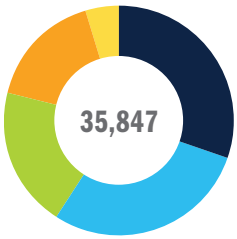
eebc Energy Efficiency Business Coalition *growing the energy efficiency industry together*

WWW.E2.ORG
@E2ORG
#CLEANJOBSAMERICA

OCTOBER 2023
E2FS: 23-09-E

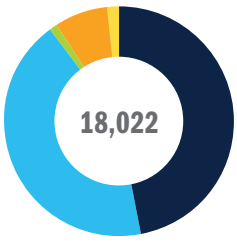
COLORADO CLEAN ENERGY ECONOMY—AT A GLANCE

FIG 1 // COLORADO CLEAN ENERGY EMPLOYMENT by sectors



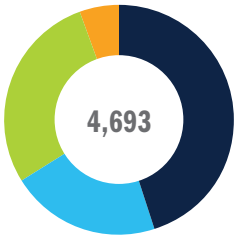
ENERGY EFFICIENCY:

- ENERGY STAR and Efficient Lighting: **10,882**
- Traditional HVAC: **10,340**
- High-Efficiency HVAC and Renewable Heating & Cooling: **7,095**
- Advanced Materials: **5,927**
- Other: **1,602**



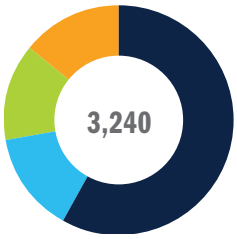
RENEWABLE GENERATION:

- Solar: **8,473**
- Wind: **7,741**
- Geothermal: **184**
- Bioenergy/CHP: **1,331**
- Low-Impact Hydro: **292**



CLEAN VEHICLES:

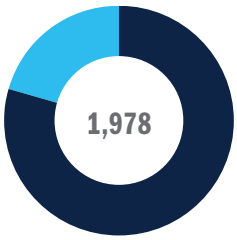
- Hybrid Electric Vehicles: **2,120**
- Plug-In Hybrid Vehicles: **987**
- Electric Vehicles: **1,338**
- Hydrogen & Fuel Cell: **249**



GRID & STORAGE:

- Clean Storage:* **1,889**
- Smart Grid: **453**
- Micro-Grid: **446**
- Other Grid Modernization: **452**

* includes pumped hydro storage, battery storage, thermal storage, and mechanical storage detailed technologies



FUELS:

- Other Ethanol/Non-Woody Biomass: **1,575**
- Other Biofuels: **403**

FIG 2 // COLORADO CLEAN ENERGY EMPLOYMENT by value chain

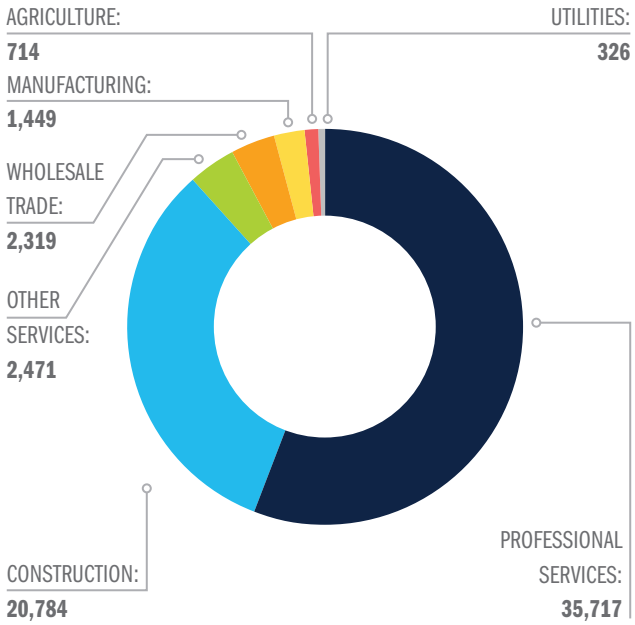
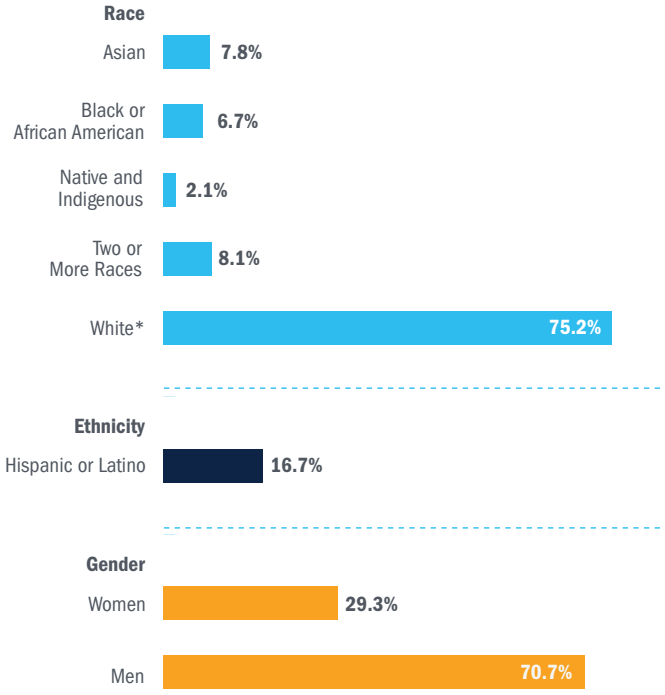
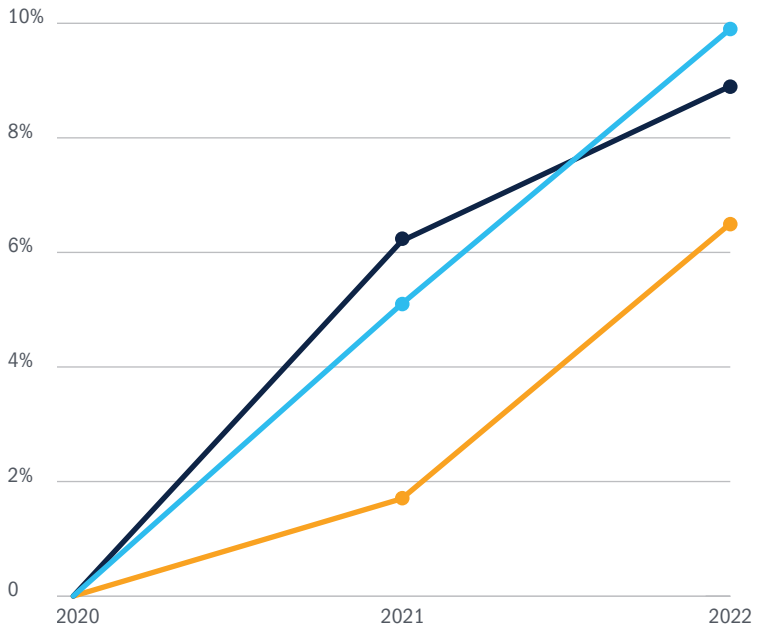


FIG 3 // COLORADO CLEAN ENERGY EMPLOYMENT by demographics[2]



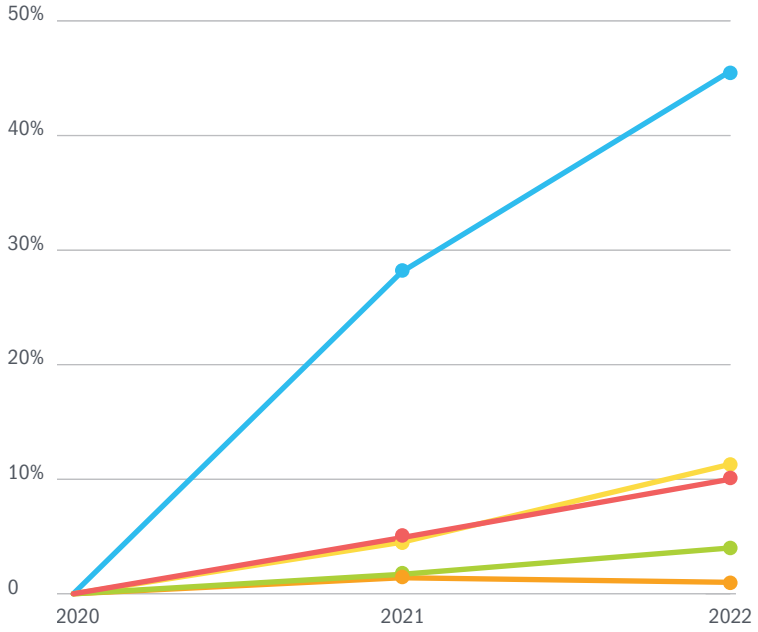
* Includes non-Hispanic and Hispanic whites

FIG 4 // COLORADO ENERGY EMPLOYMENT by industry growth



2020	2021	2022
Colorado Clean Energy Employment		
58,014	60,990	63,780
Overall Colorado Employment		
2,613,665	2,776,384	2,845,050
Overall Colorado Energy Employment		
143,813	146,238	153,223

FIG 5 // COLORADO ENERGY EMPLOYMENT by clean energy sector employment growth



2020	2021	2022
Colorado Energy Efficiency		
32,595	34,205	35,847
Colorado Renewable Generation		
17,324	17,625	18,022
Colorado Storage/Grid		
2,912	3,044	3,240
Colorado Biofuels		
1,959	1,987	1,978
Colorado Clean Vehicles		
3,224	4,129	4,693

COLORADO CLEAN ENERGY ECONOMY—APPENDIX

Table 1 // COLORADO CLEAN ENERGY EMPLOYMENT by county[3]

County	Total Clean Energy	Renewable Gen.	Storage/Grid	Biofuels	Energy Efficiency	Clean Vehicles	Job Growth	Workers Per 1K Jobs
Adams	5,183	686	267	131	3,165	935	3.4%	21.3
Alamosa	206	85	<10	35	72	11	12.4%	24.8
Arapahoe	7,354	1,293	430	114	5,041	476	2.2%	21.8
Archuleta	58	<10	<10	<10	35	10	2.1%	13.0
Baca	<10	<10	<10	<10	<10	<10	N/A	N/A
Bent	<10	<10	<10	<10	<10	<10	N/A	N/A
Boulder	4,937	2,018	236	97	2,327	259	3.4%	25.3
Broomfield	3,547	3,079	61	12	349	46	2.3%	81.8
Chaffee	159	18	<10	<10	119	15	2.4%	18.6
Cheyenne	12	<10	<10	<10	<10	<10	N/A	17.5
Clear Creek	56	38	<10	<10	14	<10	31.4%	15.5
Conejos	20	<10	<10	<10	<10	<10	-0.1%	13.0
Costilla	12	<10	<10	<10	<10	<10	-11.9%	12.6
Crowley	<10	<10	<10	<10	<10	<10	N/A	N/A
Custer	23	<10	<10	<10	16	<10	3.1%	23.1
Delta	258	147	<10	19	68	19	-3.2%	31.0
Denver	12,692	4,227	424	245	7,328	468	6.6%	22.5
Dolores	<10	<10	<10	<10	<10	<10	N/A	N/A
Douglas	3,174	1,023	132	46	1,738	234	1.3%	22.3
Eagle	574	70	14	<10	450	35	2.5%	15.9
Elbert	174	50	<10	<10	105	10	0.9%	39.2
El Paso	5,560	1,235	218	96	3,456	554	3.8%	18.6
Fremont	149	18	<10	<10	100	21	2.4%	10.9
Garfield	695	119	29	15	486	46	2.2%	27.0
Gilpin	13	<10	<10	<10	<10	<10	5.5%	3.0
Grand	117	14	<10	<10	87	<10	2.2%	14.5
Gunnison	152	22	<10	<10	115	<10	9.1%	16.0
Hinsdale	<10	<10	<10	<10	<10	<10	N/A	N/A
Huerfano	14	<10	<10	<10	<10	<10	4.1%	8.4
Jackson	18	11	<10	<10	<10	<10	-3.7%	32.5
Jefferson	6,102	1,294	722	199	3,490	397	2.3%	24.8
Kiowa	<10	<10	<10	<10	<10	<10	N/A	N/A
Kit Carson	52	17	<10	<10	17	<10	31.9%	17.8
Lake	36	12	<10	<10	21	<10	2.3%	13.6
La Plata	484	58	33	<10	346	41	3.9%	18.2
Larimer	3,627	502	112	134	2,546	333	3.8%	21.0
Las Animas	47	<10	<10	<10	26	<10	2.4%	9.6
Lincoln	54	36	<10	<10	10	<10	23.3%	24.9
Logan	513	325	11	111	51	15	60.6%	66.5
Mesa	1,155	157	57	43	739	159	2.6%	17.9

County	Total Clean Energy	Renewable Gen.	Storage/Grid	Biofuels	Energy Efficiency	Clean Vehicles	Job Growth	Workers Per 1K Jobs
Mineral	<10	<10	<10	<10	<10	<10	N/A	N/A
Moffat	49	<10	<10	<10	26	11	5.0%	10.7
Montezuma	91	<10	10	<10	48	21	4.0%	9.9
Montrose	246	37	11	<10	164	26	1.3%	15.5
Morgan	131	34	<10	12	58	19	1.5%	10.4
Otero	55	<10	<10	14	20	<10	0.2%	9.0
Ouray	45	13	<10	<10	27	<10	6.3%	22.8
Park	56	<10	<10	<10	39	<10	5.6%	20.8
Phillips	23	<10	<10	<10	<10	<10	-8.1%	13.9
Pitkin	219	25	<10	<10	178	10	4.2%	11.6
Prowers	114	54	<10	13	27	17	6.0%	24.2
Pueblo	1,208	227	98	26	768	89	7.9%	19.1
Rio Blanco	38	<10	<10	<10	22	<10	3.9%	13.4
Rio Grande	53	<10	<10	23	15	<10	-3.2%	13.0
Routt	235	32	<10	<10	174	18	5.4%	14.1
Saguache	29	<10	<10	21	<10	<10	-8.0%	19.7
San Juan	<10	<10	<10	<10	<10	<10	N/A	N/A
San Miguel	78	10	<10	<10	65	<10	3.6%	12.2
Sedgwick	<10	<10	<10	<10	<10	<10	N/A	N/A
Summit	364	60	<10	<10	275	19	14.6%	14.7
Teller	88	12	<10	<10	56	12	1.8%	11.0
Washington	15	<10	<10	<10	<10	<10	-1.2%	12.9
Weld	2,973	824	230	368	1,305	246	3.9%	26.2
Yuma	142	12	<10	90	21	11	100.2%	36.5
CO State	**63,780**	**18,022**	**3,240**	**35,847**	**1,978**	**4,693**	**4.6%**	**22.42**

Note: 252 clean energy jobs are in an unknown or undefined county

Table 2 // COLORADO CLEAN ENERGY EMPLOYMENT by metro

Metro Area	Total Clean Energy	Renewable Gen.	Storage/Grid	Biofuels	Energy Efficiency	Clean Vehicles
Denver-Aurora-Lakewood	**38,353**	11,700	2,045	754	21,278	2,576
Colorado Springs	**5,648**	1,247	224	98	3,513	566
Boulder	**4,937**	2,018	236	97	2,327	259
Fort Collins	**3,627**	502	112	134	2,546	333
Greeley	**2,973**	824	230	368	1,305	246
Pueblo	**1,208**	227	98	26	768	89
Grand Junction	**1,155**	157	57	43	739	159

Note: An additional 5,800 clean energy jobs are found in rural or nonmetropolitan areas[4]

1 Unless otherwise stated, all data is based on 2022 Q4 employment data and surveys collected and analyzed by the BW Research Partnership for the 2023 U.S. Energy and Employment Report (USEER), June 2023, Department of Energy (DOE). Employment data used in this analysis comes from the U.S. Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW) and a nationwide employer survey of 34,200 business establishments administered in Q1 2023. See Pages 201-206 for methodology questions.

2 Information on the representation of people with disabilities, lesbian, gay, bisexual, transgender, intersex, and queer people, migrants, religious minorities, and different age demographics in clean energy is limited. Based on the available data from the Bureau of Labor Statistics (BLS) and the supplemental employer survey used by the USEER, this analysis was unable to produce any findings regarding those groups.

3 United States Bureau of Labor Statistics (BLS) 2022 Q4 employment, all ownerships (accessed June 2023).

4 Rural clean energy jobs are calculated based on the Bureau of Labor Statistics' (BLS) nonmetropolitan area for every state, which is any area not designated as a metropolitan area by BLS. This is the most commonly used definition to analyze rural and small-town trends, and is available at https://www.ers.usda.gov/topics/rural-economy-population/rural-classifications/what-is-rural. New Jersey, Rhode Island, and the District of Columbia contain no nonmetropolitan statistical areas.