

CLEAN JOBS COLORADO

57,591 CLEAN ENERGY JOBS ACROSS COLORADO¹

CLEAN ENERGY LEADERSHIP CREATES JOBS

When it comes to clean energy jobs in Colorado, a few things stand out. First, the state is building upon a legacy of clean energy policy leadership stretching back 15 years. Thanks in part to its Renewable Portfolio Standard, no other state comes close to Colorado in terms of the parity and strength of its solar and wind jobs. Both industries are creating good jobs across the state—some 15,000 and counting. Also, energy efficiency and construction-related clean energy jobs are major forces in the state’s labor market. Meanwhile, there are big opportunities to add jobs in alternative transportation technologies like electric vehicles. There are an additional 8,000 workers not counted in this census who primarily work in sectors like fossil fuels, utilities, etc., who also spend some of their time working with clean energy technologies like energy efficiency.

CLEAN ENERGY JOBS IN PERSPECTIVE

All
64 Counties

in Colorado have residents
working in clean energy

#7

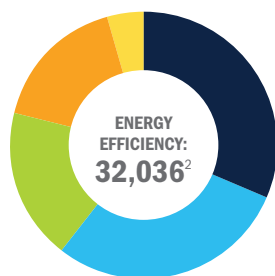
Colorado ranks seventh among all 50
states and D.C. in renewable energy jobs

About

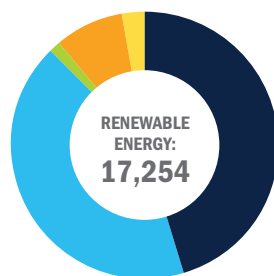
39%

of all Colorado clean energy workers
are involved in construction

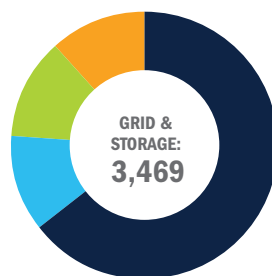
INDUSTRY BREAKDOWN



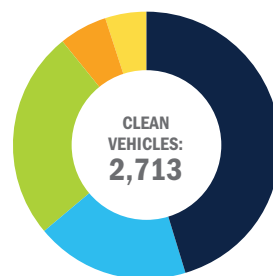
- ENERGY STAR & Lighting: **10,100**
- Trad. HVAC: **9,323**
- High-Efficiency HVAC & Renewable H&C: **5,860**
- Adv Materials: **5,395**
- Other: **1,358**



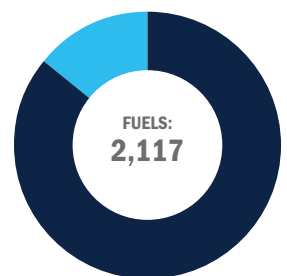
- Solar: **7,819**
- Wind: **7,320**
- Geothermal: **215**
- Bioenergy/CHP: **1,422**
- Low-Impact Hydro: **478**



- Storage: **2,236**
- Smart Grid: **410**
- Micro-Grid: **424**
- Other Grid Modernization: **399**



- Hybrid Electric Vehicles: **1,235**
- Plug-In Hybrid Vehicles: **504**
- Electric Vehicles: **686**
- Natural Gas Vehicles: **154**
- Hydrogen & Fuel Cell: **134**



- Other Ethanol/Non-Woody Biomass: **1,818**
- Other Biofuels: **299**

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#CLEANJOBSAMERICA

For more information, contact E2 Rocky Mountains Advocate **Susan Nedell** at susan@e2.org.

For questions regarding this report, visit E2's Clean Jobs America FAQ at www.e2.org/cleanjobsamerica/FAQ.



IN PARTNERSHIP WITH:



POLICIES MATTER

There are steps Colorado can take, right now, to help create more clean energy jobs in various industries across the state.



CLEAN CARS AND ELECTRIC VEHICLES (EVs)

To accelerate Colorado innovation, improve public health and provide greater consumer choices, Colorado should join 13 other states in adopting Advanced Clean Car Standards. These standards would strengthen vehicle pollution standards and require manufacturers to sell zero-emission vehicles in Colorado.

Colorado's legislature should pass legislation allowing investor owned utilities (IOUs) to propose investing in EV infrastructure, and grant the utility commission authority to review and approve those investments. Colorado law currently tilts in favor of fossil fuels by preventing the main suppliers of electricity and gas—IOUs—from investing in infrastructure that charges and fuels new, cleaner vehicles.

Colorado should also extend the state's electric vehicle tax credits, reinstate a modest credit for purchasing a pre-owned EV, and help dealers utilizing tax credits to cut prices.

These actions would put Colorado on the road to achieve its plan to have 1 million EVs on the state's roads—and the necessary charging infrastructure in place to achieve that goal—by 2030.³ As a recent MJ Bradley report shows, more EVs can help Coloradans save \$7.6 billion by 2050.⁴ At the same time, helping scale up Colorado's EV adoption backstops the Trump administration's plans to drastically weaken automobile fuel efficiency (CAFE) standards and GHG emissions rules after 2020.



RENEWABLE ENERGY

Colorado should source at least 60 percent of its electricity from renewable energy by 2030, a readily achievable goal. The state's largest utility, Xcel, is already on track to beat the current Renewable Portfolio Standard (RPS) and achieve over 50 percent renewables by the mid-2020s.

Expansion of technologies like wind and solar benefit Colorado's economy by creating jobs and delivering more low-cost clean energy to the state's businesses and communities, and the state should ensure all Coloradans receive the benefits of clean energy.

Gov. Hickenlooper has demonstrated his leadership in this area via a July 2017 Executive Order⁵ directing Colorado to cut greenhouse gases 26 percent by 2025 compared to 2005 levels. Additionally, Xcel's Electric Resource Plan and Stipulation proposes to invest in 2 gigawatts of new wind, solar, and other advanced energy resources. By taking the Comanche 1 & 2 coal-fired power plants in Pueblo offline ahead of schedule, this plan will immediately improve Colorado's air quality.



CARBON POLLUTION LIMITS

Colorado should set mandatory, economy-wide limits on its carbon pollution, and strengthen those limits over time to ensure carbon pollution continues to decline. Such measures would, in effect, set a price on carbon.

With no prospect of federal action to cut carbon pollution, Colorado can and should ensure reductions from all carbon sources in the state. States that have already enacted these policies are reducing pollution while growing their economies. An economy-wide cap on carbon does not replace other efforts to reduce carbon pollution; these would all be important pieces of ongoing regulations and incentives. Taken together, they would send a clear and firm message to the markets that would trigger additional private-sector investments in low-carbon technologies.



ENERGY EFFICIENCY

In spring 2017, the state legislature passed a bipartisan bill—HB17-1227—to extend the Public Utility Commission's (PUC's) authority to set energy efficiency savings goals for investor-owned utilities through 2028. Combined, the state's two IOUs, Xcel Energy and Black Hills, serve almost 60 percent of Colorado's population. However, Colorado can do more. The remaining utilities in the state should implement similar or stronger energy efficiency goals.

Colorado can also help improve the energy efficiency of the state's rapidly growing building stock by adopting policies that ensure new buildings adhere to the latest international building codes. Energy conservation codes requirements vary across the state and many jurisdictions have not yet adopted the latest code updates. The legislature should ensure every code-enforcing jurisdiction in the state adopts the latest code.

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TOP METROS FOR CLEAN ENERGY JOBS

Metro Area (MSA)	Clean Energy Jobs*	Renewable Energy Jobs	Energy Efficiency Jobs
Denver-Aurora, CO MSA	29,423	9,526	15,844
Colorado Springs, CO MSA	5,559	1,261	3,387
Boulder, CO MSA	5,274	2,345	2,377
Fort Collins-Loveland, CO MSA	3,520	838	2,114
Greeley, CO MSA	2,348	539	1,424

* Total includes all clean energy jobs categories, including solar, wind, energy efficiency, clean vehicles, battery storage, advanced biofuels, low-impact hydro and other areas.

TOP COUNTIES

County	Clean Energy Jobs*
Denver	11,850
Arapahoe	7,766
Jefferson	6,246
Adams	5,136
El Paso	4,929
Boulder	4,852
Larimer	3,008
Douglas	2,614
Weld	2,409
Pueblo	1,161

CASE STUDY: TAXIING TO THE EV TRANSITION

K2 Taxi is a Grand Junction family business—the result of three years of determination and hard work to secure an operating license. Kevan Kohlman founded the company in 2011, and his brother, Ryan, joined after serving in the Army. They began with one gas-powered Chevy and now have 15 taxis—eight of which are Nissan Leaf electric vehicles (EVs). The company plans to convert its entire fleet to all-electric by 2020—which could give K2 the distinction of being the nation’s first all-EV taxi company, and indirectly help create additional jobs across the country building and maintaining EVs and their parts.

Why transition to all EVs? Simple. It makes economic sense, Kevan Kohlman said. Since its founding, K2 Taxi’s second-highest annual expense was maintenance—some \$250,000 in 2014 alone. That’s when K2 began to convert its bright-green fleet to all EVs. So far, maintenance costs have been halved—even as ridership increases. With gas prices creeping higher, it’s costing less and less to charge K2’s EV fleet in its garage compared to filling up the company’s gas-powered taxis at the pump.

This transition benefits K2’s staff. K2 now hires drivers as employees rather than contractors, has instituted a profit-sharing plan and grants paid time off. Next, the company plans to cover employee health insurance. Not only are the Kohlman brothers succeeding in business, they’re improving Mesa County’s quality of life: their safe, reliable, pollution-free taxis have slashed one of Colorado’s highest per-capita DUI rates by almost 80 percent.

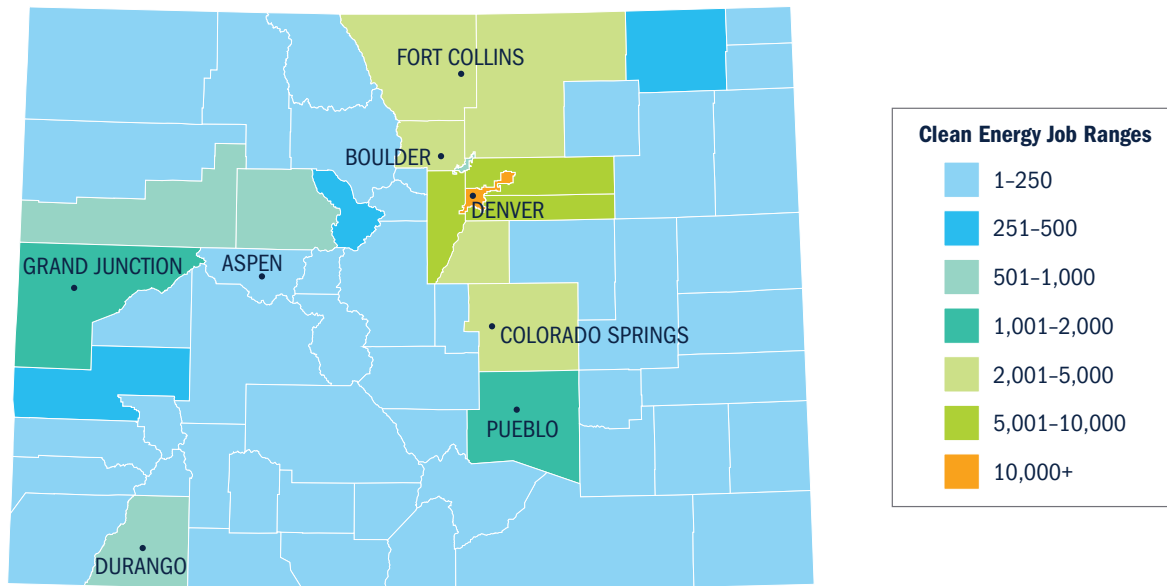
As the Kohlman brothers continue to innovate and grow their family business, they are helping lead the expansion of vehicle electrification across Colorado.



As gas prices climb, K2 Taxi in Grand Junction is using cost savings from its EV fleet to hire drivers as employees instead of contractors. (Photo courtesy of Grand Junction Business Incubator)

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COLORADO CLEAN ENERGY JOBS BY COUNTY



PROFILE: WORKING IN WIND



Michael Rucker
CEO & Founder,
Scout Clean Energy
LLC

Co-Founder, Harvest
Energy Services Inc.
Boulder



A Scout Clean Energy worker on top of wind power development. Colorado has more than 7,000 wind energy workers. (Photo courtesy Scout Clean Energy)

In 2014, after recognizing the growing need for operations and maintenance support for wind farms located across the U.S., E2 member Michael Rucker co-founded Harvest Energy Services. Back then, thanks to jobs at companies including GE and Clipper Windpower, Rucker was already an experienced wind energy executive. Harvest started with two people. Now, Harvest employs 90 people, including 75 wind technicians.

Many of Rucker's staff members were trained at wind energy vocational schools including Airstreams Renewables in Tehachapi, Calif.; Ecotech Institute in Aurora; and now, Northeastern Tech in Sterling. It takes six weeks of classroom training—a \$15,000 investment—plus on-the-job training to become a qualified wind technician, which according to the U.S. Bureau of Labor Statistics is one of America's two fastest-growing jobs. Starting annual salary is \$35,000 to \$40,000. More than a third of Harvest's technicians are veterans—three times the industry's average. While Rucker is based in Colorado, Harvest's technicians travel the country to 23 states maintaining wind farms, and refurbishing old projects to help extend their electricity generation by up to two decades.

As a spin-off from Harvest Energy Services, Rucker founded Scout Clean Energy in 2016. Scout develops and owns wind farm projects in 10 states, and has 20 employees. With an average project size of about 200 MW, it can take 5-7 years—from a greenfield to operations—to develop a wind farm. Actual construction takes about nine months and employs about 200 workers and up to 15 permanent maintenance technicians. Operational wind farms often become the largest taxpayer in the area, Rucker said, and also provide steady income to landowners for decades.

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COLORADO CLEAN ENERGY JOBS BY DISTRICT

Data shows that distribution of clean energy jobs in Colorado cross all political boundaries, with clean energy jobs in every U.S. congressional and state legislative district.

U.S. CONGRESSIONAL DISTRICT

District	Clean Energy Jobs*	Renewable Energy Jobs	Energy Efficiency Jobs
1 (Rep. DeGette)	16,132	5,026	8,832
2 (Rep. Polis)	14,590	5,243	7,482
3 (Rep. Tipton)	8,314	1,996	4,990
4 (Rep. Buck, K.)	8,100	2,254	4,627
5 (Rep. Lamborn)	5,927	1,356	3,604
6 (Rep. Coffman)	1,954	618	1,064
7 (Rep. Perlmutter)	2,574	762	1,438

* Total includes all clean energy jobs categories, including solar, wind, energy efficiency, clean vehicles, battery storage, advanced biofuels, low-impact hydro and other areas.

STATE SENATE

District	Clean Energy Jobs
1 (Sen. Sonnenberg)	3,553
2 (Sen. Grantham)	2,018
3 (Sen. Garcia)	937
4 (Sen. Smallwood)	3,235
5 (Sen. Donovan)	2,833
6 (Sen. Coram)	1,937
7 (Sen. Scott)	1,464
8 (Sen. Baumgardner)	2,200
9 (Sen. Lambert)	2,442
10 (Sen. Hill)	495
11 (Sen. Merrifield)	1,368
12 (Sen. Gardner)	45
13 (Sen. Cooke)	826
14 (Sen. Kefalas)	1,275
15 (Sen. Lundberg)	1,848
16 (Sen. Neville)	5,407
17 (Sen. Jones)	2,734
18 (Sen. Fenberg)	1,609

District	Clean Energy Jobs
19 (Sen. Zenzinger)	1,937
20 (Sen. Jahn)	1,152
21 (Sen. Moreno)	2,897
22 (Sen. Kerr)	<10
23 (Sen. Marble)	217
24 (Sen. Martinez Humenik)	245
25 (Sen. Priola)	579
26 (Sen. Kagan)	3,749
27 (Sen. Tate)	<10
28 (Sen. Todd)	233
29 (Sen. Fields)	170
30 (Sen. Holbert)	465
31 (Sen. Court)	3,329
32 (Sen. Aguilar)	1,851
33 (Sen. Williams)	945
34 (Sen. Guzman)	2,785
35 (Sen. Crowder)	809

CLEAN JOBS COLORADO

STATE HOUSE

District	Clean Energy Jobs
1 (Rep. Lontine)	2,341
2 (Rep. Garnett)	2,751
3 (Rep. Bridges)	4,127
4 (Rep. Pabon)	1,041
5 (Rep. Duran)	3,485
6 (Rep. Hansen)	1,925
7 (Rep. Coleman)	1,063
8 (Rep. Herod)	<10
9 (Rep. Rosenthal)	569
10 (Rep. Hooton)	3,946
11 (Rep. Singer)	979
12 (Rep. Foote)	1,248
13 (Rep. Becker, KC.)	922
14 (Rep. Sandridge)	1,279
15 (Rep. Williams)	766
16 (Rep. Liston)	1,070
17 (Rep. Exum)	1,569
18 (Rep. Lee)	277
19 (Rep. Lundeen)	479
20 (Rep. Carver)	17
21 (Rep. Landgraf)	15
22 (Rep. Everett)	573
23 (Rep. Kennedy)	2,203
24 (Rep. Danielson)	1,088
25 (Rep. Leonard)	332
26 (Rep. Roberts)	1,731
27 (Rep. Sias)	751
28 (Rep. Pettersen)	<10
29 (Rep. Kraft-Tharp)	293
30 (Rep. Michaelson Jenet)	2,053
31 (Rep. Salazar)	87
32 (Rep. Benavidez)	94
33 (Rep. Gray)	476

District	Clean Energy Jobs
34 (Rep. Winkler)	45
35 (Rep. Winter)	<10
36 (Rep. Weissman)	448
37 (Rep. Wist)	<10
38 (Rep. Beckman)	497
39 (Rep. Lawrence)	2,208
40 (Rep. Buckner)	<10
41 (Rep. Melton)	<10
42 (Rep. Jackson)	<10
43 (Rep. Van Winkle)	<10
44 (Rep. Ransom)	<10
45 (Rep. Neville)	<10
46 (Rep. Esgar)	753
47 (Rep. Reyher)	501
48 (Rep. Humphrey)	2,505
49 (Rep. Buck, P)	2,460
50 (Rep. Young)	116
51 (Rep. McKean)	<10
52 (Rep. Ginal)	<10
53 (Rep. Arndt)	<10
54 (Rep. Willett)	1,619
55 (Rep. Thurlow)	<10
56 (Rep. Corvarrubias)	237
57 (Rep. Rankin)	824
58 (Rep. Catlin)	878
59 (Rep. McLachlan)	1,485
60 (Rep. Wilson)	387
61 (Rep. Hamner)	1,444
62 (Rep. Valdez)	393
63 (Rep. Saine)	203
64 (Rep. Lewis)	591
65 (Rep. Becker, J.)	447

ENDNOTES

- 1 Unless otherwise stated, all data is from the 2018 U.S. Energy & Employment Report (USEER) released in May 2018 by the National Association of State Energy Officials and the Energy Futures Initiative. Visit www.usenergyjobs.org to download USEER and see pages 15-17 for methodology questions. This fact sheet differs from previous reports released by E2 in Colorado as the methodology has been adjusted to more accurately count the number of clean energy workers in the state. For more questions regarding methodology, visit www.e2.org/cleanjobsamerica/FAQ.
- 2 There are at least 8,000 jobs in the utilities sector and in dealing with grid-related work like transmission, distribution and storage that are likely to spend time in the energy efficiency space. There are also other workers who spend the majority of their time working in the fossil fuels industry who spend some of their time on energy efficiency.
- 3 https://www.colorado.gov/governor/sites/default/files/colorado_electric_vehicle_plan_-_january_2018.pdf
- 4 https://mjbradley.com/sites/default/files/CO_PEV_CB_Analysis_FINAL_13apr17.pdf
- 5 https://www.colorado.gov/governor/sites/default/files/executive_orders/climate_eo.pdf

PRESENTED BY:



E2 is a national, nonpartisan group of business leaders, investors and others who advocate for smart policies that are good for the environment and good for the economy.



Clean Jobs Count is a campaign to raise awareness of the economic importance of the clean economy. Visit www.cleanjobscount.org to join thousands of business leaders, workers and others to tell lawmakers and policymakers that clean jobs count.

IN PARTNERSHIP WITH:



The Energy Efficiency Business Coalition (EEBC) is a member-funded coalition of businesses that provide energy efficient products and services to create healthier homes and businesses by using cost-effective and sustainable methods to reduce energy, water, and waste in buildings.