

CLEAN JOBS WASHINGTON¹

PRIMED TO LEAD WASHINGTON'S ECONOMIC RECOVERY

2020

In the midst of a global pandemic and an economic recession, Washington's clean energy economy—and its proven growth potential throughout the state—holds the key to a resilient economic recovery.

At the onset of 2020, Washington's clean energy economy was coming off another year of solid growth, further establishing itself as the backbone—and future—of the Evergreen State's energy sector. With more than 85,000 clean energy workers, the state ranked 13th for clean energy employment. Illustrating the important role this sector plays in Washington's economy, the clean energy industry accounts for more than 25% of all construction jobs in the state. Importantly, these jobs' wages and benefits compare favorably to other industries; E2's recent *Clean Jobs, Better Jobs* report shows that the median wage for Washington's clean energy economy pays nearly 11% more than the state's overall median wage.²

But following five straight years of job growth, Washington's clean energy economy has been derailed by the economic recession driven by COVID-19.

Through October, more than 17,000 clean energy workers—almost one-fifth of Washington's clean energy workforce pre-COVID—remain out of work.

This report details the size, scope, and diversity of this core Washington state employment sector, the troubles it is currently facing due to the pandemic, and the promise that strategic policy direction and stimulus investments in clean energy hold to drive a durable and sustainable recovery for Washington's economy. By leveraging clean energy's job creation potential, Washington policymakers can stimulate an economic recovery, make progress towards achieving Washington's climate goals, and create jobs that come with pay and benefits that are better than many of the jobs that have been lost.

While federal action is critical to a swift recovery across the nation, Washington

state policymakers have a central role to play as well. Tremendous job creation can be delivered by staying the course on implementation of existing clean energy policy, prime among them Washington's Clean Energy Transformation Act. To ensure continued recovery and economic development in the years to come, state lawmakers should adopt additional policies in 2021 to drive investment and job growth in the clean energy economy. These policy opportunities—including a clean fuels program, clean truck standards, a state-wide limit on carbon pollution, and carbon pricing—can drive strong investments in climate solutions across the state. If well-designed, these and other policies have the potential to leverage Washington's clean energy economy as an engine for broader economic recovery.

KEY FINDINGS

Q4 2019

2.4%

OF ALL WASHINGTON JOBS ARE IN CLEAN ENERGY

11X

CLEAN ENERGY EMPLOYED 11 TIMES MORE WORKERS THAN FOSSIL FUELS IN 2019

1 in 4

WASHINGTON CONSTRUCTION WORKERS ARE EMPLOYED IN CLEAN ENERGY

SINCE COVID-19

17K

WASHINGTON CLEAN ENERGY WORKERS REMAIN UNEMPLOYED

81%

OF CLEAN ENERGY WORKERS WHO LOST THEIR JOBS DUE TO THE PANDEMIC REMAIN OUT OF WORK

19%

OF THE STATE'S CLEAN ENERGY WORKFORCE AS OF Q4 2019 IS NOW OUT OF WORK

PRESENTED BY:



NOVEMBER 2020
E2FS: 20-11-A

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#CLEANJOBSWA
#CLEANJOBSAMERICA

For more information, contact E2 Advocate
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For questions regarding this report, visit E2's report FAQ at
<https://www.e2.org/reports/clean-jobs-america-faq>.

IN PARTNERSHIP WITH:



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COVID-19 & THE CURRENT SITUATION

Coming into 2020, Washington's clean energy economy was looking forward to another record-breaking year, with employers projecting to add another 4,800 jobs in Washington this year. If those projections had held up, the sector would have grown 6% this year—nearly three times the rate of overall job growth in the state in 2019.

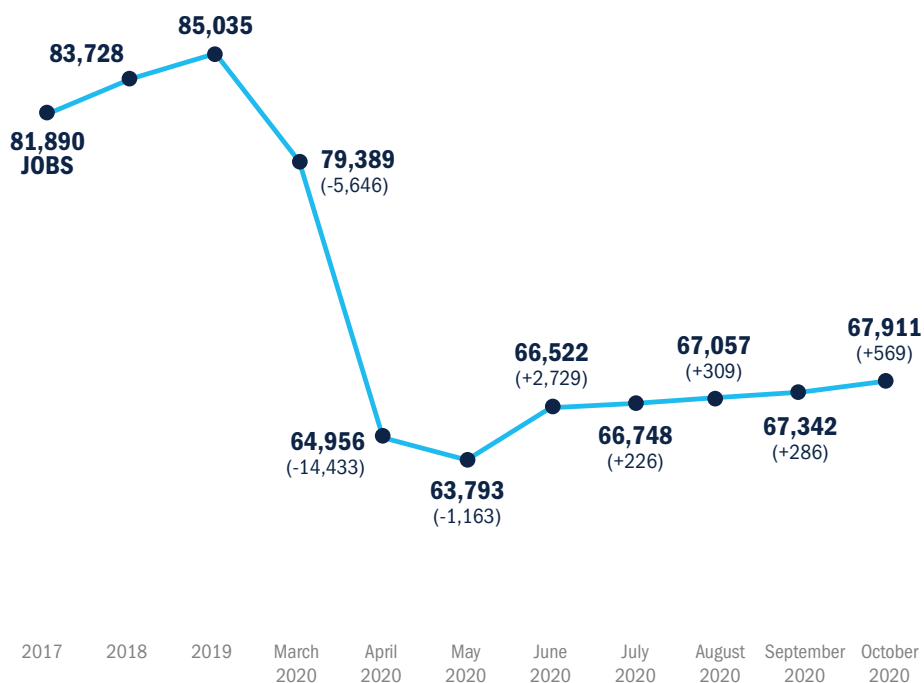
But like other sectors of the economy, clean energy was hit by the COVID-19 outbreak. Energy efficiency workers lost their jobs after being shut out of homes and buildings to prevent the spread of the coronavirus. Solar and wind turbine companies furloughed workers after panels and parts were stranded in shut-down factories and the availability of tax equity financing became more scarce. Factory workers were let go as assembly lines for clean energy products like Energy Star appliances and electric and hybrid vehicles went dark.

Years of Job Growth

While recent months have brought some jobs back, more than 17,000 clean energy workers remain out of work since the COVID-19 pandemic began in March, according to E2's latest monthly analysis of unemployment data.³ These job losses represent about a 19% loss in the statewide clean energy workforce since last year and more than five times the sector's job growth over the last two years. Clean energy-focused stimulus efforts can put these Washingtonians back to work today while building on the sector's strong foundation to drive additional job growth for the years to come.

With the clean energy industry still confronting persistent challenges as a result of the COVID-driven economic recession, at the current rate of recovery it would take about three years for Washington to reach its pre-COVID clean energy employment levels.

IMPACT ON CLEAN JOBS 2017–SEPTEMBER 2020



CLEAN ENERGY JOBS OUTLOOK WASHINGTON 2020-2021

JOB GROWTH 2017-2019:

+3,145 JOBS
(+3.8%)

PRE-COVID-19 PROJECTED
JOB GROWTH 2020-2021:

+4,847 JOBS
(+5.7%)⁴

JOBS LOST DUE TO COVID-19:

-17,124 JOBS
(-19.2%)

A CLOSER LOOK CLEAN ENERGY UNEMPLOYMENT CLAIMS

By Sector

Sector	Jobs Lost	Percent of Workforce
Renewable Energy	2,226	16.3%
Energy Efficiency	13,079	20.1%
Clean Vehicles	630	18.8%
Storage & Grid	708	19.5%
Clean Fuels*	482	13.9%

* Job losses in the clean fuels sector include woody biomass and corn ethanol, which are not included in clean energy employment data throughout the rest of this report.

Regions Hardest Hit

Metro	Jobs Lost	Percent of Workforce
Seattle	12,919	6.7%

County	Jobs Lost	Percent of Workforce
King	6,056	16.1%
Snohomish	1,369	17.3%
Pierce	1,027	14.3%
Clark	566	10.7%
Spokane	530	10.5%

States Hardest Hit

State	Total Losses	Percent of Clean Energy Workforce
California	76,638	13.9%
Georgia	26,540	30.7%
Florida	24,000	14.3%
Michigan	22,671	17.0%
Texas	20,765	8.4%
North Carolina	18,340	16.0%
Pennsylvania	17,340	17.9%
Washington	17,124	19.2%
Ohio	14,774	12.7%
New York	14,329	8.1%

BUILDING BACK A CASE FOR OPTIMISM

Despite recent job losses, there's reason for optimism. This is an industry with a record of growth that cannot be ignored. As history shows, clean energy is a proven catalyst for quick job growth in the aftermath of economic crisis, with clean energy employment growing from a few hundred thousand workers in 2008-2009 to nearly 3.4 million nationwide in 2019.

In fact, no part of the 2009 American Recovery and Reinvestment Act (ARRA) was more successful than the \$90 billion in federal investments in clean energy. In the years following ARRA, nearly 1 million clean energy jobs were created. Hundreds of new made-in-America businesses—game-changing companies such as Tesla which employed 45,000 workers before the COVID-19 pandemic—got their start with ARRA-era Department of Energy loans that were repaid in full. Businesses developed more than 100,000 wind, solar and other clean energy projects, bringing new investments and jobs to states like Washington, which, in tandem with smart policy that helped create markets to facilitate additional investment, helped propel the state to become a regional leader in renewable energy and storage technologies over the following decade.

A similar federal clean energy stimulus investment can play a critical role in Washington state's economic recovery. According to the recent report *Build Back Better, Faster* from E2 and E4Thefuture, a federal stimulus package targeting energy efficiency, renewables, and grid modernization would create over 15,500 jobs every year for at least five years while generating \$6.4 billion in additional economic activity in Washington state. As demonstrated by another recent report from Low Carbon Prosperity Institute and Climate XChange, these investments could simultaneously bolster community health and set a course towards achieving ambitious climate goals that provide a net benefit to Washingtonians.⁵



If Congress directs
\$99.2 BILLION
 in federal stimulus, policy
 initiatives, and other
 investments nationwide

=



Washington's
 workforce grows by
15,585
 jobs for at least five years
 (a total of 78,000 job-years)

+



Washington's
 economy generates
\$6.4 Billion
 in economic activity (GDP)
 over the next five years

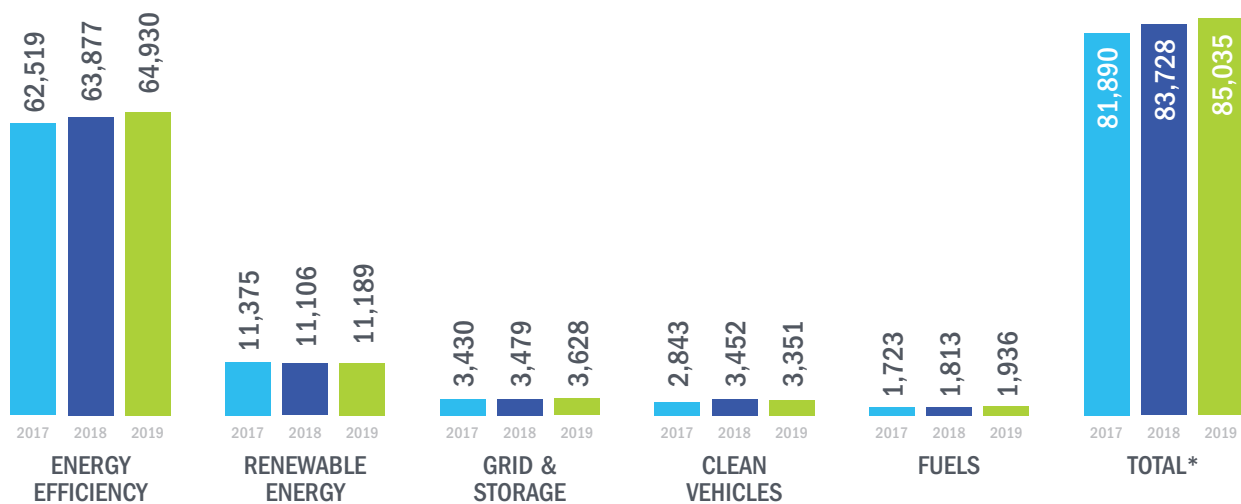
CLEAN JOBS WASHINGTON 2020 YEAR IN REVIEW

In 2019, Washington's clean energy economy added over 1,300 jobs, swelling to over 85,000 workers throughout the state, driven primarily by growth in energy efficiency, grid modernization, energy storage, and clean fuels.

The state saw employment growth in 18 of 22 subtechnologies, and four of the five clean energy industry sectors. Clean energy employed blue- and white-collar Washingtonians, with significant employment in construction (64%) and by small businesses (70%). More than 10% of clean energy workers in 2019 were part of a union.

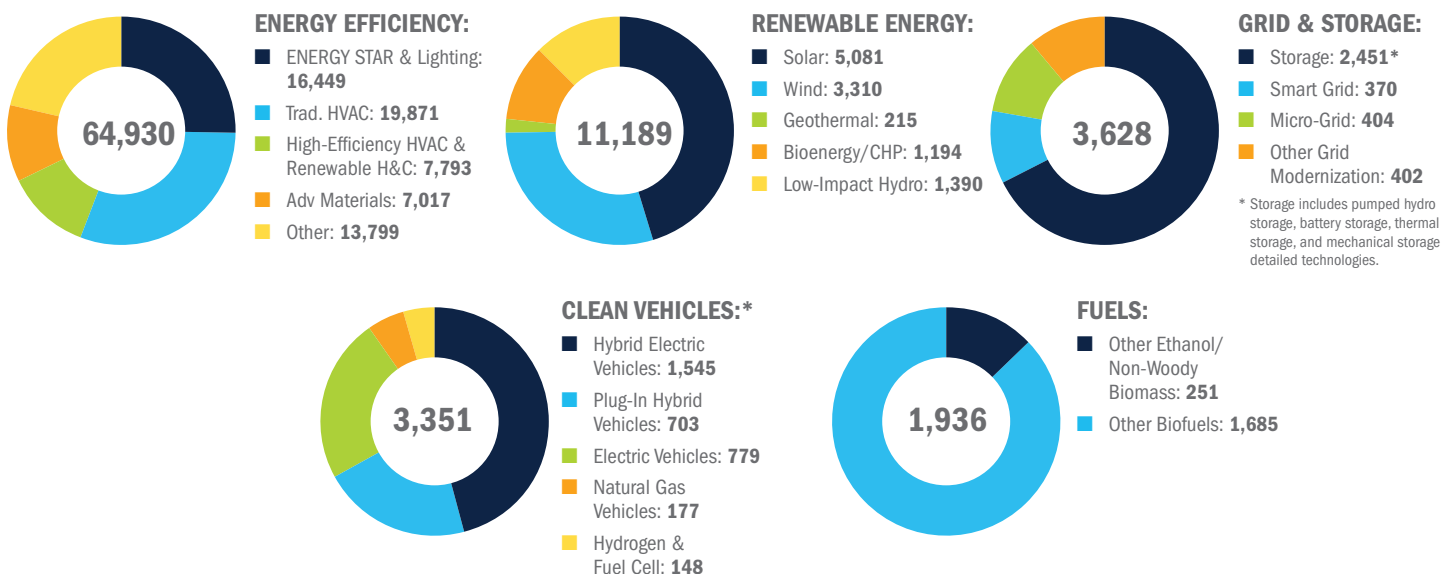
Viewed economy-wide, clean energy jobs accounted for more than one out of every 50 workers in the state and 55% of jobs across the entire energy sector in 2019. Clean energy businesses employed nearly 11 times more workers than the fossil fuel industry statewide at the end of 2019.

STATEWIDE CLEAN ENERGY EMPLOYMENT 2017-2019



*While E2's clean energy job reports go back to 2014, due to recent methodology changes, we are unable to confidently provide comparable growth numbers before 2017.

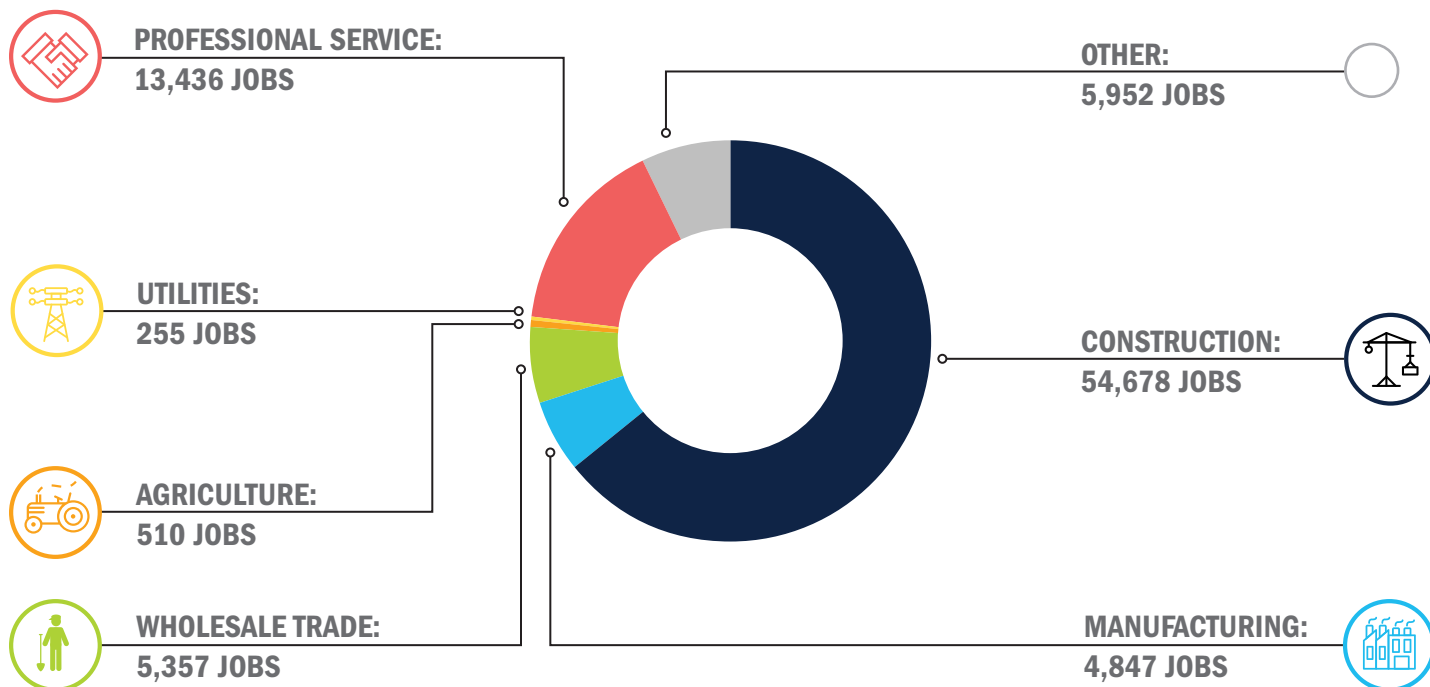
INDUSTRY BREAKDOWN Q4 2019



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

* Not included are 4,450 additional employees who work making gas-powered vehicles more fuel-efficient.

CLEAN JOBS BY VALUE CHAIN



CLEAN JOBS BY BUSINESS SIZE Q4 2019

MORE THAN 69% OF CLEAN ENERGY WORKERS

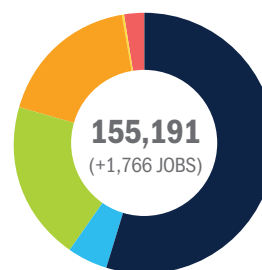
IN WASHINGTON WERE EMPLOYED BY BUSINESSES
WITH FEWER THAN 20 EMPLOYEES

CLEAN ENERGY WORKERS BY BUSINESS SIZE:

- 1-4 EMPLOYEES: 41.9%**
- 5-19 EMPLOYEES: 27.3%**
- 20-99 EMPLOYEES: 26.9%**
- 100-499 EMPLOYEES: 2.5%**
- 500+ EMPLOYEES: 1.4%**

WASHINGTON ENERGY ECONOMY WORKFORCE BREAKDOWN Q4 2019

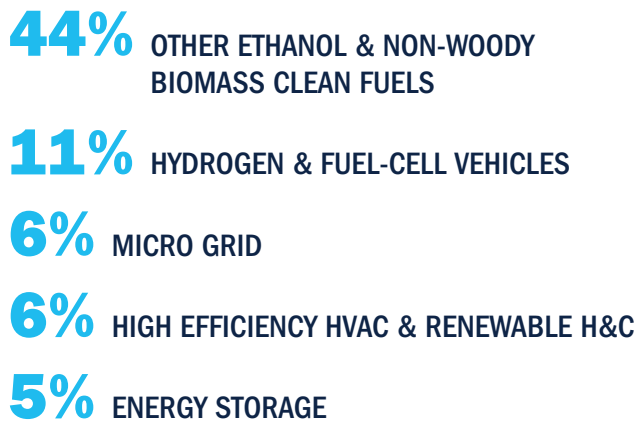
55% OF ALL ENERGY SECTOR JOBS
IN WASHINGTON WERE IN CLEAN ENERGY
INDUSTRIES (OVER 11X MORE THAN
FOSSIL FUELS)⁶



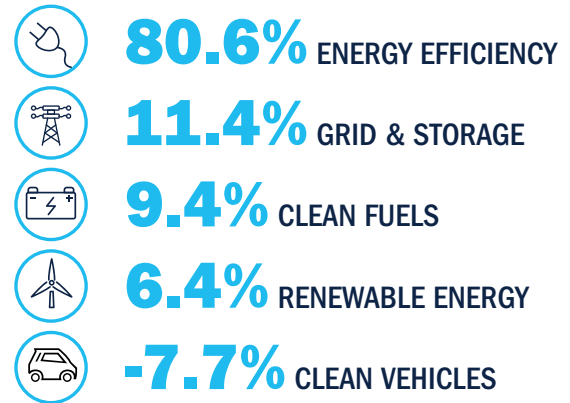
- Clean Energy Economy: 85,035 (+1,307 jobs)
- Fossil Fuels: 7,651 (+347)
- Motor Vehicles: 30,991 (+735)
- Trad. Transmission & Distribution Employment: 27,555 (-631)
- Nuclear: 262 (-8)
- Other*: 3,697 (+16)

* Includes other energy subsectors such as corn ethanol, woody biomass, large hydropower, and others

FASTEST GROWING TECHNOLOGIES 2018–2019

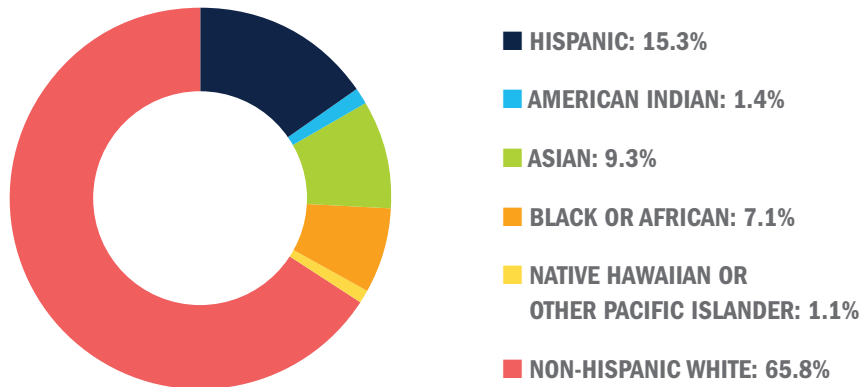


SECTOR SHARE OF JOB GROWTH 2018–2019



CLEAN JOBS BY DEMOGRAPHICS Q4 2019

More than **1 in 3** clean energy workers in Washington were of non-white or Hispanic ethnicity in 2019*



*7.9% of workers identified as two or more races

UNION WORKERS IN CLEAN ENERGY Q4 2019

Washington state had the second-highest unionization rate of its clean energy workforce in 2019, trailing only New York.

With a unionization rate of 10.5% for all clean energy workers, Washington was one of only three states where more than 10% of its clean energy workforce was unionized. While this rate of private unionization is significantly higher than the national average of 6%, and E2's *Clean Jobs, Better Jobs* demonstrates this sector as a whole pays better than the state median wage, policymakers and employers must continue to ensure this industry creates sustainable, family-supporting employment.

1	New York	13.3%
2	Washington	10.5%
3	Nebraska	10.1%
4	California	9.9%
5	Pennsylvania	9.4%
6	Michigan	9.2%
7	Minnesota	9.2%
8	Illinois	9.1%
9	Oregon	9.0%
10	Nevada	9.0%
	National Average	7.9%

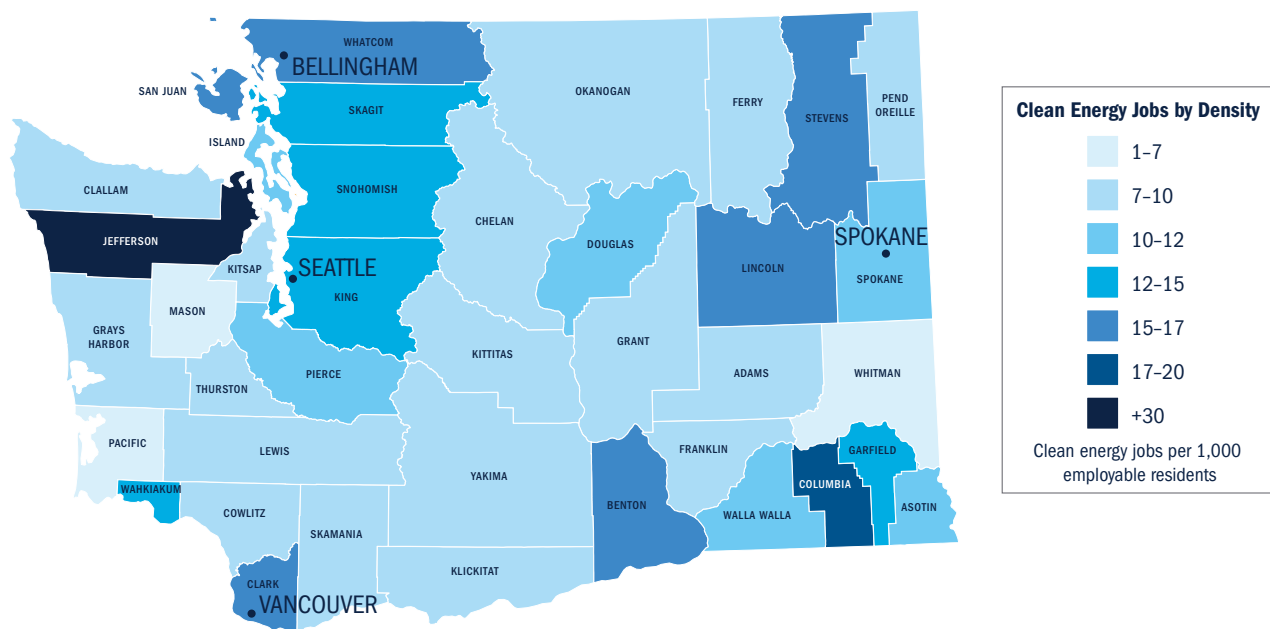


CLEAN JOBS WASHINGTON 2020 GEOGRAPHIC DRILLDOWN

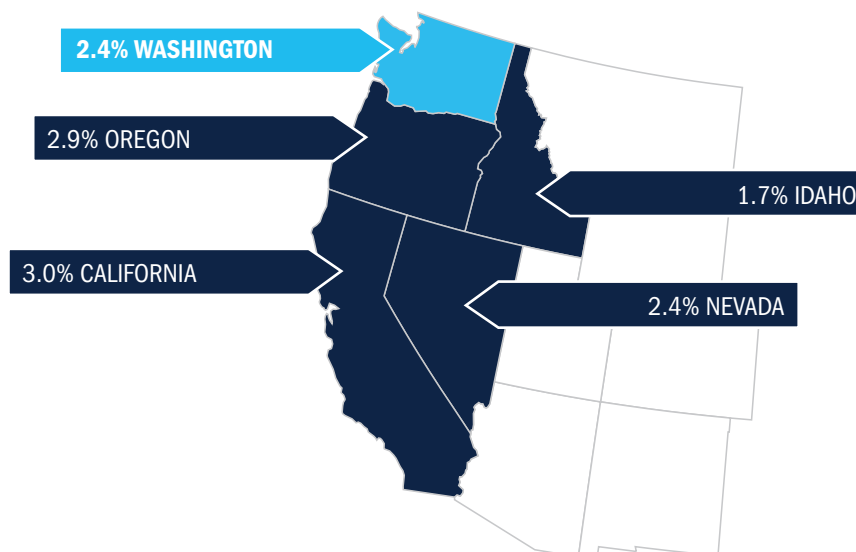
Clean energy businesses employed workers in all 39 counties and in 140 of the state's 147 state legislative districts in 2019. Seattle was home to 57% of Washington state's clean energy jobs, while rural areas accounted for 9.6%. The county with the highest density of clean energy jobs was Jefferson County, with more than 30 clean energy jobs per 1,000 overall jobs.

About 2.4% of all jobs in Washington were in clean energy industries at the end of 2019, and clean energy employed 11 times more Washingtonians than the state's fossil fuel sector. However, this share of total statewide employment is below Washington's West Coast neighbors. Looking at clean energy job density in Oregon and California—states that have led in providing policy direction and market structures to nurture job growth and investment—it is clear that Washington policymakers have the opportunity to facilitate further clean energy growth that can add tens of thousands of new clean energy jobs in the coming years.

SHARE OF TOTAL COUNTY EMPLOYMENT Q4 2019



SHARE OF TOTAL STATEWIDE EMPLOYMENT Q4 2019



Clean Energy Jobs by Metro Areas⁷

Metro	Clean Energy Jobs*	Renewable Energy Generation Jobs	Energy Efficiency Jobs
Seattle-Tacoma-Bellevue	48,345	7,053	36,307
Spokane	6,038	611	4,772
Portland-Vancouver-Beaverton	5,580	609	4,371
Bellingham	3,638	681	2,600
Olympia	2,837	292	2,238
Bremerton-Silverdale	2,756	276	2,181

Metro	Clean Energy Jobs*	Renewable Energy Generation Jobs	Energy Efficiency Jobs
Kennewick-Richland-Pasco	2,086	212	1,647
Yakima	1,976	227	1,537
Mount Vernon-Anacortes,	1,288	133	1,016
Wenatchee	1,214	123	960
Longview	922	97	725
Lewiston	173	16	138

Note: More than 8,000 additional clean energy jobs are located in Washington's rural areas and not included in a metropolitan statistical area.

Clean Energy Jobs by Counties

County	Clean Energy Jobs*	Renewable Energy Generation Jobs	Energy Efficiency Jobs
King	37,470	4,832	29,675
Snohomish	7,877	1,119	6,109
Pierce	7,114	601	5,626
Clark	5,255	469	4,309
Spokane	4,973	558	3,855
Benton	3,155	369	2,464
Whatcom	3,004	857	1,907
Yakima	2,077	139	1,287
Thurston	1,944	173	1,542
Kitsap	1,677	134	1,395
Skagit	1,555	440	922
Grant	822	29	503
Chelan	812	42	563
Cowlitz	687	62	535
Franklin	642	33	471
Walla Walla	613	237	263
Jefferson	590	402	174
Lewis	449	18	344
Clallam	366	23	303

County	Clean Energy Jobs*	Renewable Energy Generation Jobs	Energy Efficiency Jobs
Grays Harbor	363	21	300
Island	360	79	253
Stevens	332	141	157
Kittitas	315	31	227
Douglas	303	59	168
Okanogan	279	19	146
San Juan	202	10	181
Whitman	200	15	159
Mason	194	8	163
Adams	192	129	35
Asotin	150	10	126
Klickitat	118	18	66
Lincoln	88	11	68
Pacific	69	5	55
Pend Oreille	64	4	55
Columbia	51	28	10
Skamania	32	1	28
Ferry	26	1	22
Garfield	17	12	3
Wahkiakum	15	1	13

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

Clean Energy Jobs by District

Data shows that distribution of clean energy jobs in Washington crosses all political boundaries, with clean energy jobs in every congressional district and most state legislative districts.

U.S. Congressional District

District	Total Clean Energy Jobs	Renewable Energy Generation Jobs	Energy Efficiency Jobs
1 (Rep. DelBene)	15,974	2,406	11,929
2 (Rep. Larsen)	6,963	904	5,327
3 (Rep. Herrera Beutler)	7,726	830	6,063
4 (Rep. Newhouse)	5,821	627	4,567
5 (Rep. McMorris Rodgers)	7,209	733	5,695

District	Total Clean Energy Jobs	Renewable Energy Generation Jobs	Energy Efficiency Jobs
6 (Rep. Kilmer)	8,909	907	7,036
7 (Rep. Jayapal)	16,119	2,301	12,151
8 (Rep. Schrier)	8,204	1,030	6,308
9 (Rep. Smith)	4,652	1,086	3,135
10 (Rep. Strickland)	3,458	365	2,720

State Senate

District	Total Clean Energy Jobs
1 (Sen. Stanford)	3,891
2 (Sen. McCune)	2,080
3 (Sen. Billig)	3,882
4 (Sen. Padden)	1,397
5 Undecided	3,138
6 (Sen. Holy)	579
7 (Sen. Short)	1,054
8 (Sen. Brown)	1,731
9 (Sen. Schoesler)	1,402
10 Undecided	3,672
11 (Sen. Hasegawa)	5,528
12 (Sen. Hawkins)	1,474
13 (Sen. Warnick)	1,292
14 (Sen. King)	2,053
15 (Sen. Honeyford)	146
16 (Sen. Dozier)	237
17 (Sen. Wilson)	2,981

District	Total Clean Energy Jobs
18 (Sen. Rivers)	878
19 (Sen. Wilson)	1,913
20 (Sen. Braun)	1,697
21 (Sen. Lias)	1,887
22 (Sen. Hunt)	708
23 (Sen. Rolfes)	2,456
24 (Sen. Van De Wege)	1,274
25 (Sen. Gildon)	1,699
26 (Sen. Randall)	1,256
27 (Sen. Darneille)	2,121
28 Undecided	1,096
29 (Sen. Conway)	479
30 (Sen. Wilson)	1,896
31 (Sen. Fortunato)	133
32 (Sen. Salomon)	908
33 (Sen. Keiser)	519
34 (Sen. Nguyen)	999

District	Total Clean Energy Jobs
35 (Sen. Sheldon)	612
36 (Sen. Carlyle)	6,585
37 (Sen. Saldaña)	2,861
38 (Sen. Robinson)	1,751
39 (Sen. Wagoner)	1,361
40 (Sen. Lovelett)	3,285
41 (Sen. Wellman)	4,519
42 (Sen. Ericksen)	900
43 (Sen. Pedersen)	1,633
44 (Sen. Hobbs)	-
45 (Sen. Dhingra)	1,947
46 (Sen. Frockt)	365
47 (Sen. Das)	-
48 (Sen. Kuderer)	-
49 (Sen. Cleveland)	761

State House of Representatives

District	Total Clean Energy Jobs
1 (Reps. Duerr and Kloba)	3,881
2 (Reps. Barkis and Wilcox)	2,075
3 (Reps. Riccelli and Ormsby)	3,887
4 (Reps. Chase and McCaslin)	1,398
5 (Reps. Ramos and Callan)	3,134
6 (Reps. Volz and Graham)	579
7 (Reps. Maycumber and Kretz)	1,056
8 (Reps. Klippert and Boehnke)	1,733
9 (Reps. Dye and Schmick)	1,402
10 Both Undecided	3,709
11 (Reps. Hackney and Bergquist)	5,638
12 (Reps. Goehner and Steele)	1,475
13 (Reps. Dent and Ybarra)	1,293
14 (Reps. Corry and Mosbrucker)	2,075
15 (Reps. Chandler and Dufault)	146
16 (Reps. Klicker and Rude)	237
17 (Reps. Harris and Undecided)	3,021

District	Total Clean Energy Jobs
18 (Reps. Vick and Hoff)	879
19 (Reps. Walsh and McEntire)	1,914
20 (Reps. Abbarno and Orcutt)	1,706
21 (Reps. Peterson and Ortiz-Self)	1,883
22 (Reps. Dolan and Bateman)	709
23 (Reps. Simmons and Hansen)	2,459
24 (Reps. Chapman and Tharinger)	1,275
25 (Reps. Chambers and Jacobsen)	1,695
26 (Reps. Young and Caldier)	1,253
27 (Reps. Jinkins and Fey)	2,117
28 (Reps. Leavitt and Bronoske)	1,094
29 (Reps. Morgan and Kirby)	-
30 (Reps. Taylor and Johnson)	1,890
31 (Reps. Stokesbary and Robertson)	132
32 (Reps. Ryu and Davis)	905
33 (Reps. Orwall and Gregerson)	533

District	Total Clean Energy Jobs
34 (Reps. Cody and Fitzgibbon)	1,002
35 (Reps. Griffey and MacEwen)	613
36 (Reps. Frame and Berry)	6,656
37 (Reps. Santos and Harris-Talley)	2,868
38 (Reps. Wicks and Sells)	1,747
39 (Reps. Sutherland and Eslick)	1,359
40 (Reps. Lekanoff and Ramel)	3,259
41 (Reps. Senn and Thai)	4,731
42 (Reps. Rule and Shewmake)	901
43 (Reps. Macri and Chopp)	1,649
44 (Reps. Lovick and Berg)	-
45 (Reps. Goodman and Springer)	1,943
46 (Reps. Pollet and Valdez)	365
47 (Reps. Entenman and Sullivan)	-
48 (Reps. Slatter and Walen)	-
49 (Reps. Wylie and Stonier)	761

ENDNOTES

- 1 Unless otherwise stated, all data is from the 2020 U.S. Energy and Employment Report (USEER), March 2020, NASEO and EFI. All employment findings in USEER is based on survey and data analysis collected from Q4 2019 prior to any onset of the COVID-19 crisis. See Pages 201-206 for methodology questions.
- 2 Clean Jobs, Better Jobs. E2, ACORE, BW Research. October 2020. Available at www.e2.org/reports/clean-jobs-better-jobs.
- 3 Clean Energy Employment Initial Impacts from the COVID-19 Economic Crisis, October 2020. BW Research, E2, ACORE, E4TheFuture. Available at www.e2.org/reports/clean-jobs-covid-economic-crisis-october-2020.
- 4 USEER 2019 Employer Survey.
- 5 Building Back Better: Investing in a Resilient Recovery for Washington State. Low Carbon Prosperity Institute, June 2020. Available at <https://www.lowcarbonprosperity.org/project/building-back-better>.
- 6 Based on the 2019 U.S. Energy and Employment Report individual state snapshot for Washington, available at <http://usenergyjobs.org>.
- 7 Based on the metropolitan and nonmetropolitan area definitions used by the Bureau of Labor Statistics' OES survey, see the MSA definitions page available at <https://www.bls.gov/oes/current/oesrcma.htm>.

About E2



[E2 \(Environmental Entrepreneurs\)](#) is a national, nonpartisan group of business leaders, investors, and professionals from every sector of the economy who advocate for smart policies that are good for the economy and good for the environment. E2 members have founded or funded more than 2,500 companies, created more than 600,000 jobs, and manage more than \$100 billion in venture and private equity capital.

For additional insight into E2's Clean Jobs America 2020 or our other annual clean jobs and economic reports, visit e2.org/reports.

About Our Partners:



[The Low Carbon Prosperity Institute](#) (LCPI) was established in 2014 as a project of the Washington Business Alliance's PLAN Washington. Our goal is to guide Washington to a double win—achieve greenhouse gas reduction commitments and build a thriving shared economy. LCPI provides system design based on data and science working collaboratively with others and informing policies to make our goals come to life.



[The CleanTech Alliance](#) represents over 1,100 member organizations spanning ten U.S. states and three Canadian provinces. The Alliance facilitates the generation and growth of clean tech companies and jobs through a variety of educational programs, research, programs, and services. CleanTech Alliance members come from all facets of the clean technology industry sector. A diverse membership allows the CleanTech Alliance to drive impact for our members and create business connections that make a difference.



[Renewable Northwest](#) is a nonprofit advocacy organization that promotes the rapid decarbonization of the electric grid in Oregon, Washington, Idaho, and Montana. Our work is deeply informed by our members, a unique combination of environmental nonprofits, renewable energy companies, and consumer advocates. It is our collective goal to speed the region's efforts to decarbonize our electric grid while maintaining system reliability and affordable rates for customers.

THANKS TO SUPPORT FROM:

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