

# CLEAN JOBS OREGON<sup>1</sup>

## READY TO DRIVE RECOVERY AND GROWTH IN 2021

As Oregon looks to regain its economic footing from the impacts of the COVID-19 global pandemic, the state's clean energy economy holds powerful promise—with a strong track record of success—for statewide job growth now and for years to come.

Nurtured by smart clean energy policy over the past decade, including the Renewable Portfolio Standard, Clean Fuels Program and Coal to Clean, Oregon's clean energy economy has fueled private sector job growth throughout the state. Heading into 2020, Oregon's clean energy economy had firmly established itself as the powerhouse of the state's energy sector and was only gaining steam. At the beginning of 2020, nearly 57,000 Oregonians worked in clean energy, representing 58% of all energy sector jobs and almost 3% of the statewide workforce. In fact, the clean energy economy was outpacing Oregon's economy-wide job growth by over 60% and contributing to the local economy in every county and every state senate district. Companies surveyed across Oregon anticipated even more robust growth, projecting to add about 2,800 clean energy jobs in 2020.

All that changed with the COVID-19 global pandemic and the economic recession it precipitated. Oregon's clean energy economy has been hammered since the pandemic's arrival in March, with over 6,000 of Oregon's clean energy workers—10% of the state's clean energy workforce pre-COVID—out of

work at the beginning of 2021.

This report details the size, scope, and diversity of this core sector of Oregon's economy, the challenges it continues to face due to the pandemic, and the promise that strategic policy action and targeted stimulus investments in clean energy hold to drive a strong and durable recovery for Oregon's economy. Complementing this report is E2's recent *Clean Jobs, Better Jobs* report that shows wages and benefits in clean energy compare favorably to other industries; in fact, Oregon's clean energy economy pays nearly 21% more than the state's economy-wide median wage. Taken together, these reports demonstrate that—by leveraging clean energy's job creation potential—Oregon policymakers can help stimulate an economic recovery, make progress towards achieving Oregon's climate goals and create jobs that come with pay and benefits that are better than many of the jobs that have been lost.

Federal policies from the Biden administration and Congress are crucial for economic recovery across the nation and in Oregon. However, Oregon policymakers have a critical role to play in facilitating recovery in the state's clean energy sector to recuperate its recent job losses and position it for continued growth in the years to come. To help realize clean energy's job creation potential in Oregon, state lawmakers should stay the course and ensure strong implementation of existing clean energy policies and regulations, including Gov. Kate Brown's March 2020 Executive Order on Climate Action (EO 20-04). And by adopting additional policies in 2021 that will drive investment and job growth in the clean energy economy—such as a 100% clean electricity bill and a zero-emission truck standard called the Advanced Clean Trucks Rule—state officials can leverage Oregon's clean energy economy as an engine for growth, both now and into the future.

## OREGON CLEAN ENERGY JOBS PAY 21% MORE THAN STATEWIDE MEDIAN

### KEY FINDINGS

#### Q4 2019

**56,600**

CLEAN ENERGY JOBS ACROSS OREGON

**2.9%**

OF ALL OREGON JOBS ARE IN CLEAN ENERGY

**3 in 10**

OREGON CONSTRUCTION WORKERS ARE EMPLOYED IN CLEAN ENERGY

**6,000**

OREGON CLEAN ENERGY WORKERS REMAIN UNEMPLOYED

#### SINCE COVID-19

**4 in 10**

ONLY 4 OUT OF 10 CLEAN ENERGY WORKERS UNEMPLOYED BY THE CRISIS HAVE RETURNED TO WORK

**10%**

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

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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>.

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## COVID-19 & THE CURRENT SITUATION IN 2021

Coming into 2020, Oregon's clean energy economy was looking forward to another record-breaking year, with clean energy employers projecting to add around 2,800 jobs in Oregon in 2020 (a 5% increase year-over-year). In fact, this rate of growth would have been 50% greater than the state's overall employment growth rate since 2017 (3%).

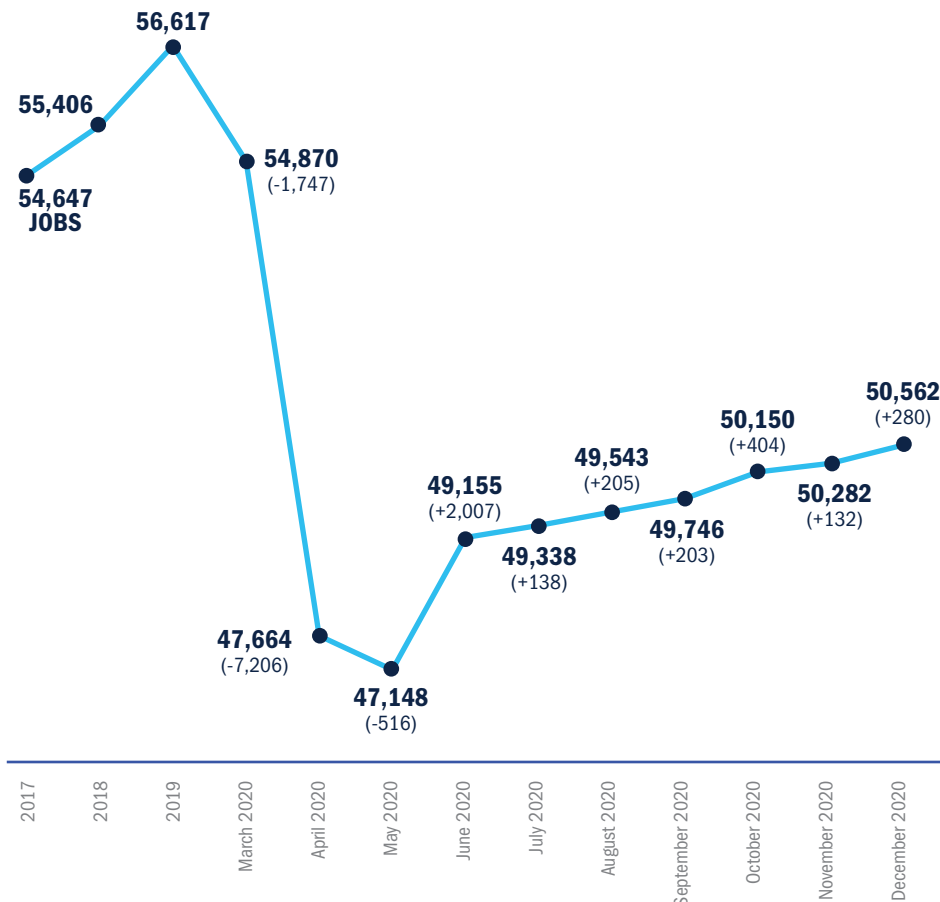
But like most sectors, the national clean energy sector was hit by the COVID-19 outbreak, and Oregon's clean energy sector was no exception. Energy efficiency workers lost their jobs after being shut out of homes and buildings to prevent the spread of the coronavirus. Solar and wind turbine companies furloughed workers after panels and parts were stranded in shut-down factories. Factory workers were let go as assembly lines for Energy Star appliances and electric and hybrid vehicles went dark.

### Years of Job Growth

While recent months have brought some jobs back, Oregon's clean energy industry enters 2021 still reeling, with more than 6,000 former employees still out of work since the COVID-19 pandemic began in March, according to E2's latest monthly analysis of unemployment data. At the current rate of recovery over the final six months of 2020, it would take more than two years for Oregon to reach its pre-COVID clean energy employment levels.

These job losses represent a 10% loss in the statewide clean energy workforce since last year and more than three times the sector's entire job growth over the last two years. Clean energy-focused stimulus and strategic policy direction can put these Oregonians back to work today while building on the sector's strong foundation to drive additional job growth for the years to come.

### IMPACT ON CLEAN JOBS 2017–DECEMBER 2020



JOB GROWTH 2017-2019:  
**+1,970 JOBS**  
**(+3.6%)**

PRE-COVID-19 PROJECTED  
JOB GROWTH 2020:  
**+2,831 JOBS**  
**(+5.0%)<sup>2</sup>**

JOBS LOST SINCE COVID-19:  
**-6,055 JOBS**  
**(-10.4%)**

## A CLOSER LOOK CLEAN ENERGY UNEMPLOYMENT CLAIMS THROUGH DECEMBER 2020

### By Sector

Sector	Jobs Lost	Percent of Pre-Covid Workforce
Renewable Energy	724	7.9%
Energy Efficiency	4,577	10.7%
Clean Vehicles	226	9.1%
Storage & Grid	304	10.6%
Clean Fuels*	223	7.1%

\* 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
Portland	5,737	16.1%

County	Jobs Lost	Percent of Workforce
Multnomah	1,368	8.0%
Washington	1,358	10.4%
Clackamas	391	7.5%
Lane	364	10.3%

### States Hardest Hit

State	Total Losses	Percent of Clean Energy Workforce
California	71,615	13.0%
Georgia	26,155	30.3%
Florida	22,814	13.6%
Michigan	21,946	16.5%
Texas	18,622	7.6%
North Carolina	17,044	14.9%
Pennsylvania	16,735	17.2%
Washington	16,580	18.6%
Ohio	14,116	12.2%
New York	11,185	7.2%
<b>Oregon</b>	<b>6,005</b>	<b>10.0%</b>

## BUILDING BACK A CASE FOR OPTIMISM

Despite the impact to the national clean energy industry from COVID-19, there's reason for optimism. This is an industry with a track record that cannot be ignored. And as history shows, it is a proven catalyst for quick job growth in the aftermath of the economic crisis, growing from a few hundred thousand workers in 2008-2009 at the onset of The Great Recession 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 nationwide. 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 created more than 100,000 wind, solar and other clean energy projects, bringing new investments and jobs to states like Oregon, which, in tandem with smart policy that created markets to facilitate additional investment, helped propel the state to become a regional player in renewable energy over the following decade.

A similar federal clean energy stimulus investment can play a critical role in Oregon's economic recovery today. 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 nearly 12,000 jobs every year for at least five years while generating close to a billion dollars annually in additional economic activity in Oregon. While impressive, these figures are only the beginning of what's possible for clean energy investment and job growth in Oregon. With effective implementation of Gov. Brown's Executive Order on Climate Action and adoption of additional state-level policies like 100% clean electricity and the Advanced Clean Trucks rule, state policymakers can prime Oregon for continued growth of the clean energy sector for years to come.



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



Oregon's  
 workforce grows by  
**11,991 jobs**  
 for at least five years



Oregon's  
 economy generates  
**\$4.7 Billion**  
 in economic activity (GDP)  
 over the next five years

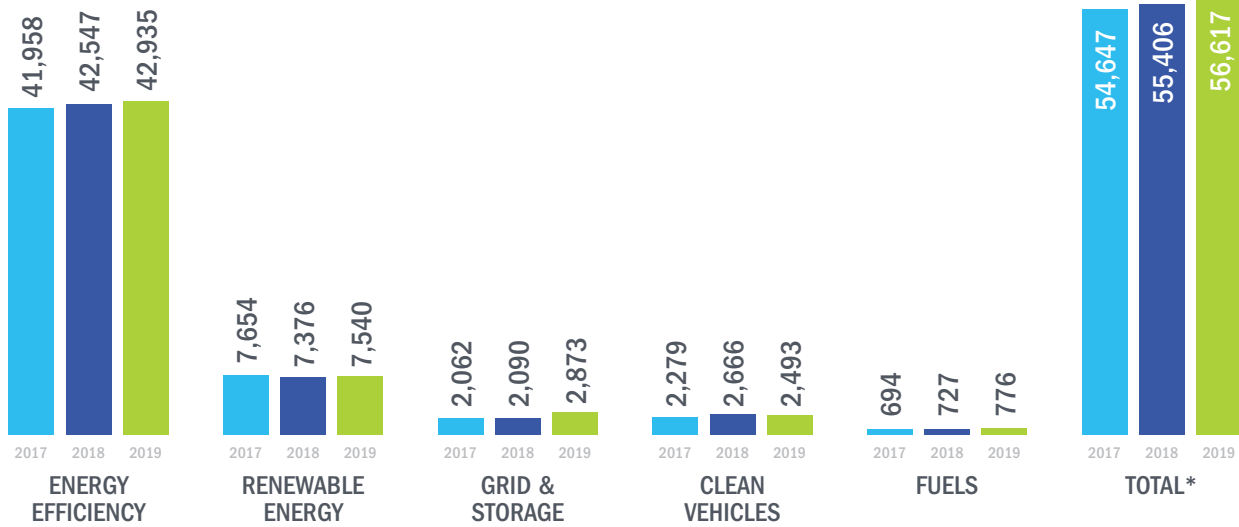
# CLEAN JOBS OREGON PRE-COVID 2019 YEAR IN REVIEW

In 2019, Oregon's clean energy economy added over 1,200 jobs, reaching 56,600 workers statewide to remain ranked 22nd in total clean energy jobs among all 50 states and the District of Columbia.

The state saw growth in 17 of 21 subsectors, including over 5% growth in nine, with the largest growth-rates coming from other grid modernization (300%), other ethanol and non-woody biomass clean fuels (32%), bioenergy/combined heat and power (24%), low-impact hydropower (22%), and geothermal energy (19%). Total job growth was driven mostly by the grid and storage, energy efficiency, and renewable generation sectors.

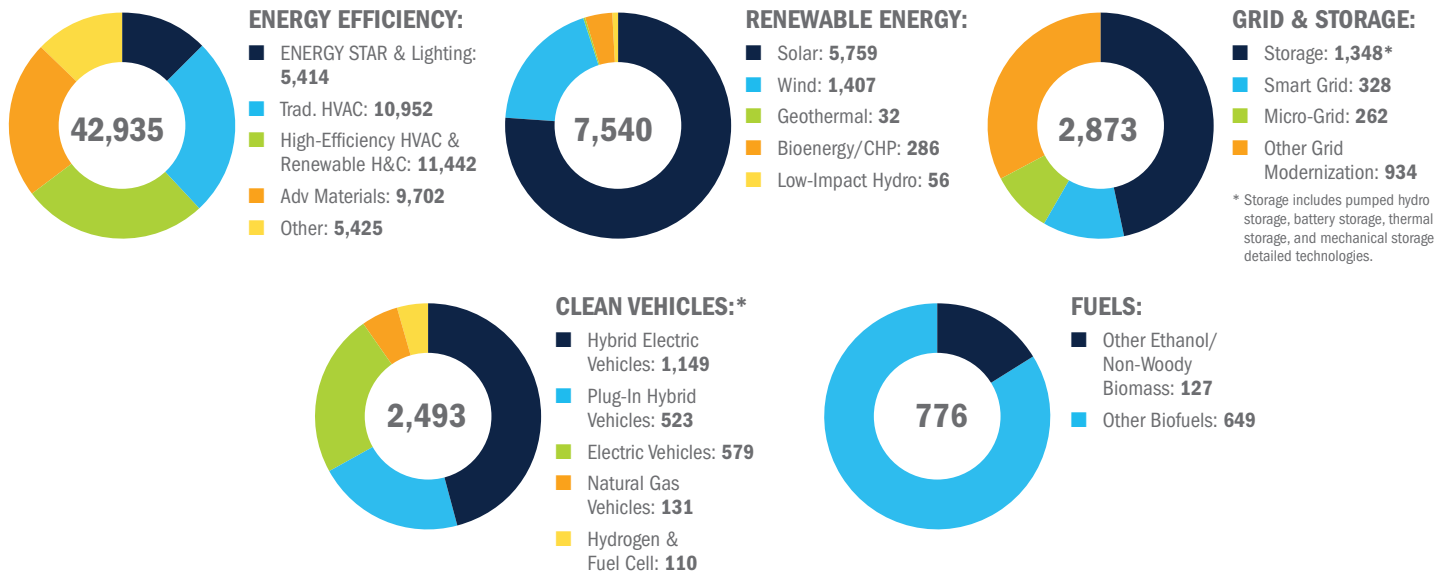
Viewed statewide, Oregon's clean energy economy was a core employment sector across the state in 2019. Clean energy jobs accounted for nearly three out of every 100 workers in the state—the ninth highest rate nationwide—and 58% of all energy sector jobs in 2019. Compared to fossil fuels companies, clean energy businesses employed 35 times more workers in the state 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.

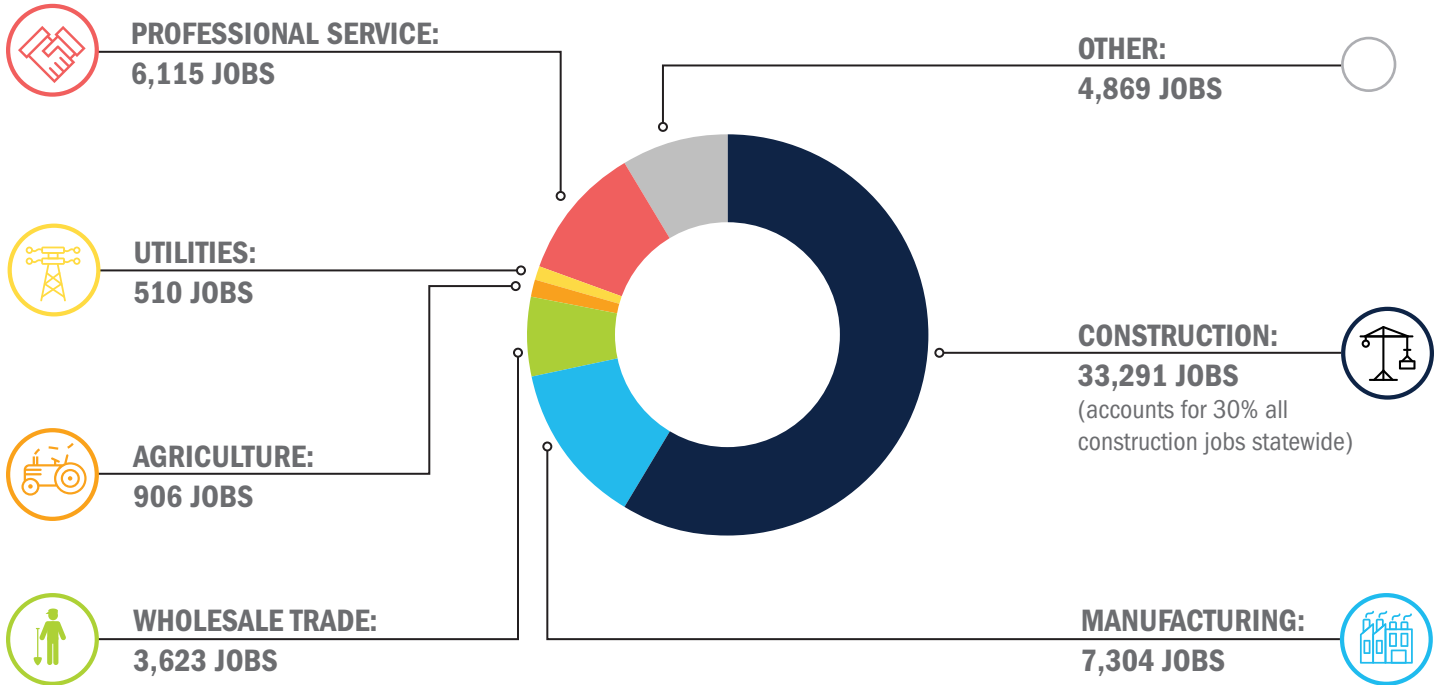
## INDUSTRY BREAKDOWN Q4 2019



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

\* Not included are 4,384 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 80% OF CLEAN ENERGY WORKERS

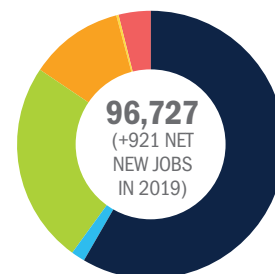
IN OREGON WERE EMPLOYED BY BUSINESSES WITH  
FEWER THAN 20 EMPLOYEES

#### CLEAN ENERGY WORKERS BY BUSINESS SIZE:

- 1-4 EMPLOYEES: 52.1%**
- 5-19 EMPLOYEES: 31.2%**
- 20-99 EMPLOYEES: 9.6%**
- 100-499 EMPLOYEES: 5.3%**
- 500+ EMPLOYEES: 1.8 %**

## OREGON ENERGY ECONOMY WORKFORCE BREAKDOWN Q4 2019

**58% OF ALL ENERGY SECTOR JOBS**  
IN OREGON WERE IN CLEAN ENERGY  
INDUSTRIES (OVER 35X MORE THAN  
FOSSIL FUELS)<sup>3</sup>



- Clean Energy Economy: 56,617 (+1,211 jobs)
- Fossil Fuels: 1,594 (+171)
- Motor Vehicles: 23,636 (-133)
- Trad. Transmission & Distribution Employment: 11,075 (-571)
- Nuclear: 188 (-6)
- Other\*: 3,617 (+259)






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

## FASTEST GROWING TECHNOLOGIES 2019–2020

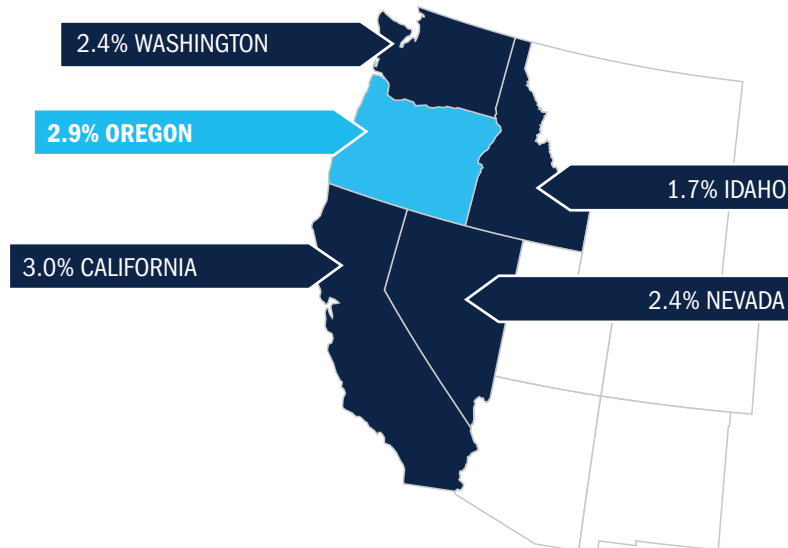
- 300%** OTHER GRID MODERNIZATION
- 33%** OTHER ETHANOL/NON-WOODY BIOMASS\*
- 24%** BIOENERGY/CHP
- 22%** LOW-IMPACT HYDROPOWER
- 19%** GEOTHERMAL

\* Other Ethanol/Non-Woody Biomass Fuel is fuel made from materials other than cornstarch, such as straw, manure, vegetable oil, and animal fats

## SECTOR SHARE OF JOB GROWTH 2019–2020

-  **64.7%** GRID & STORAGE
-  **32.0%** ENERGY EFFICIENCY
-  **13.5%** RENEWABLE GENERATION
-  **4.1%** CLEAN FUELS
-  **-14.3%** CLEAN VEHICLES

## SHARE OF TOTAL STATEWIDE EMPLOYMENT Q4 2019



CLEAN ENERGY JOBS

**56,617**

STATEWIDE EMPLOYMENT

**1,977,490**

SHARE OF STATEWIDE EMPLOYMENT

**2.86%**

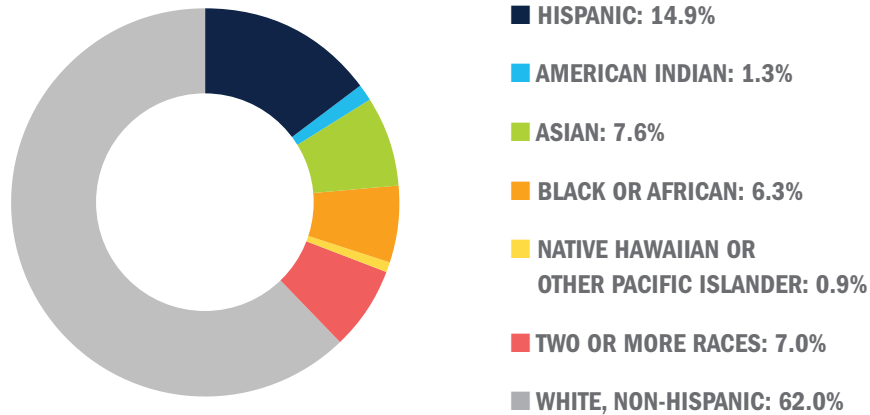
## TOP U.S. STATES BY CLEAN ENERGY JOBS PER CAPITA

State	Clean Energy Jobs	Statewide Employment	Share of Statewide Employment
Vermont	16,635	314,687	5.29%
Rhode Island	16,429	494,834	3.32%
Massachusetts	122,477	3,695,164	3.31%
Maryland	84,549	2,736,593	3.09%
Delaware	13,943	458,463	3.04%
California	536,919	17,716,329	3.03%
Wyoming	8,721	287,910	3.03%
Utah	44,005	1,521,072	2.89%
<b>Oregon</b>	<b>56,617</b>	<b>1,977,490</b>	<b>2.86%</b>
Michigan	125,365	4,419,704	2.84%

# CLEAN JOBS OREGON DEMOGRAPHIC BREAKDOWN

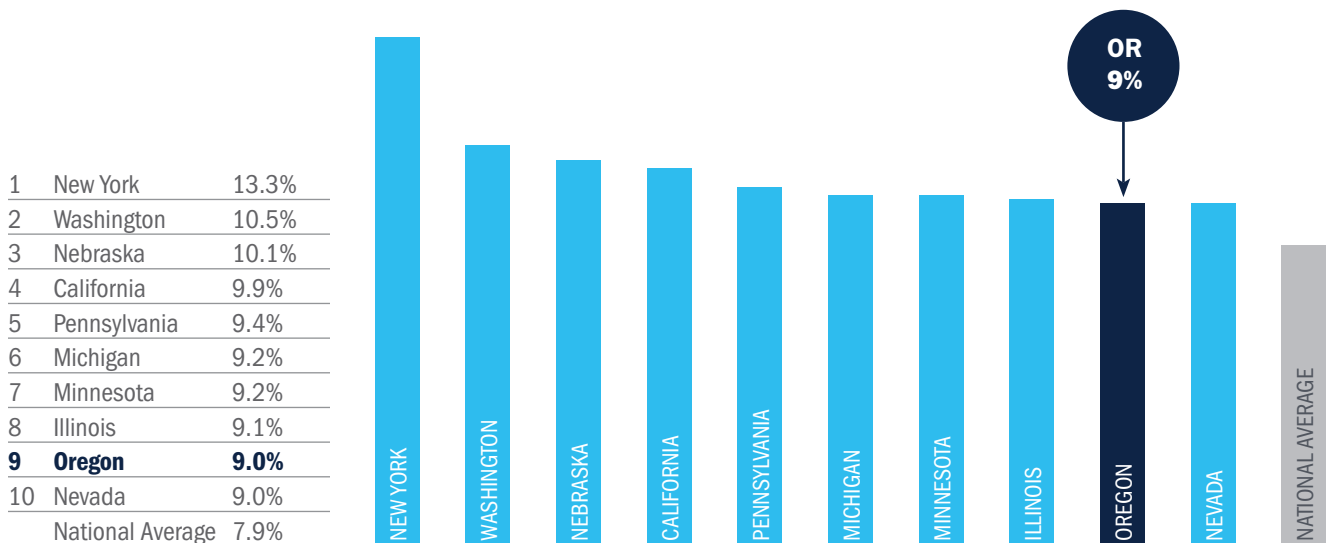
## CLEAN JOBS BY DEMOGRAPHICS Q4 2019

Nearly 4 in 10 clean energy workers in Oregon were of non-white or Hispanic ethnicity in 2019



## UNION WORKERS IN CLEAN ENERGY Q4 2019

Oregon had the ninth-highest unionization rate of its clean energy workforce in 2019, trailing only Washington and California in the Western U.S. While E2's Clean Jobs, Better Jobs report also shows clean energy pays nearly 21% better than the state economy-wide median wage, policymakers and employers must continue to work to ensure that clean energy provides sustainable, family-wage jobs for Oregonians.



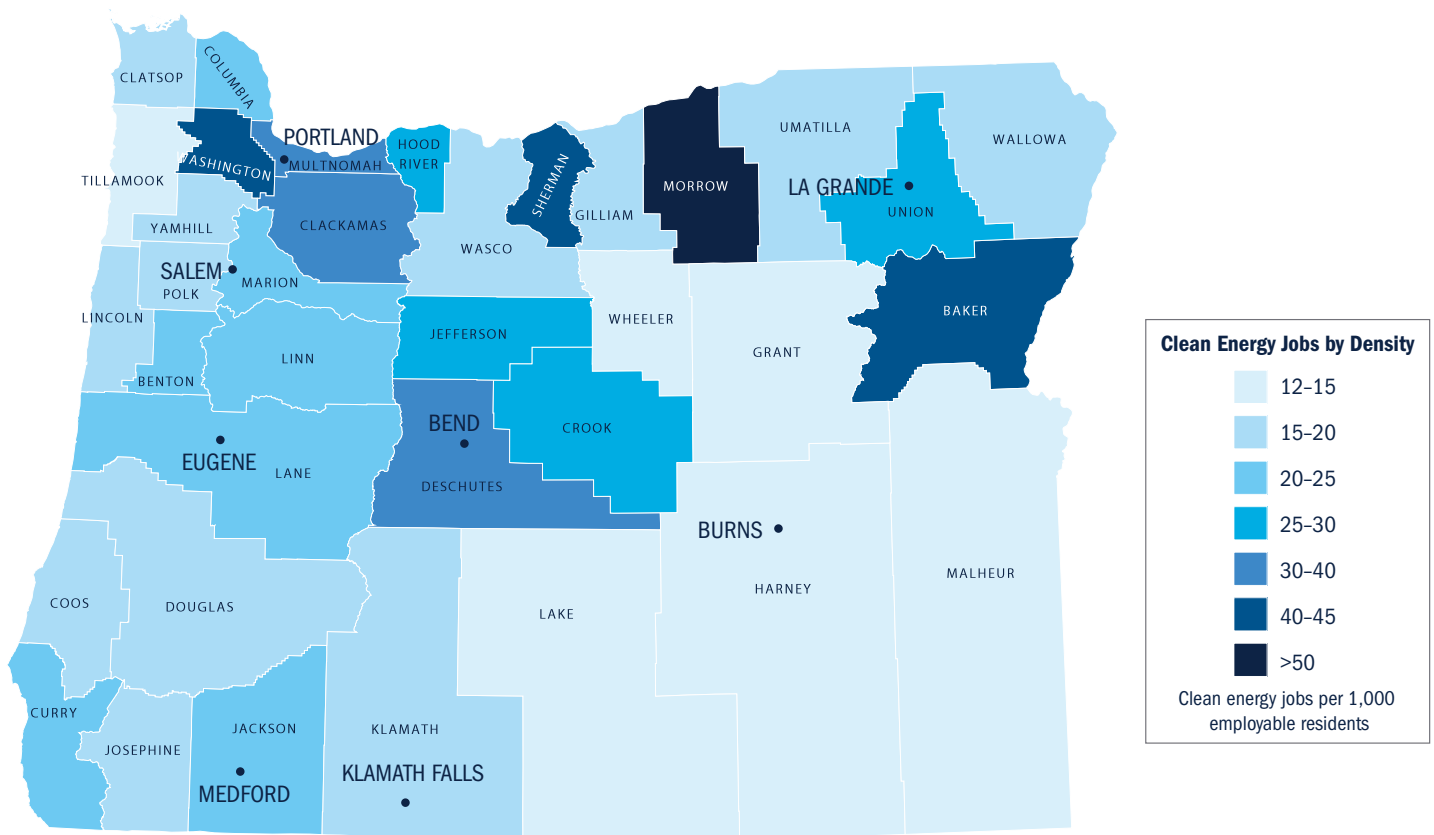
## CLEAN JOBS OREGON GEOGRAPHIC DRILLDOWN

Nationally, Oregon has the 25th largest economy-wide workforce among all 50 states and the District of Columbia, but ranks 22nd in total clean energy jobs.

Clean energy employed workers in all 36 counties and in all 30 state senate districts in 2019. While 53% of the state's clean energy jobs were in Portland, rural areas often saw greater percentages of its workforce employed in clean energy. For example, Morrow County boasted the highest density of clean energy jobs statewide, with more than 52 clean energy jobs for every 1,000 overall jobs in the county.

The clean energy economy is a core industry and job creator in Oregon, with the sector employing 2.9% of all working Oregonians at the end of 2019, the ninth-highest rate amongst all states and only slightly behind its neighbor to the south. With continued implementation of smart clean energy policy, Oregon is well-positioned to establish itself as a domestic leader in the space and draw outsized levels of clean energy investment and employment.

### SHARE OF TOTAL COUNTY EMPLOYMENT Q4 2019





## Clean Energy Jobs by Metro Areas<sup>4</sup>

Metro	Clean Energy Jobs*	Renewable Energy Generation Jobs	Energy Efficiency Jobs
Bend	2,673	349	2,064
Corvallis	981	131	755
Eugene-Springfield	5,076	591	3,985
Medford	3,387	387	2,665

Metro	Clean Energy Jobs*	Renewable Energy Generation Jobs	Energy Efficiency Jobs
Portland	30,104	4,452	22,125
Salem	3,920	429	3,102
Rural Oregon	10,475	1,201	8,239

## Clean Energy Jobs by Counties

County	Clean Energy Jobs*	Renewable Energy Generation Jobs	Energy Efficiency Jobs
Baker	229	121	96
Benton	936	117	741
Clackamas	5,104	220	4,270
Clatsop	307	11	275
Columbia	282	13	243
Coos	391	51	301
Crook	171	6	97
Curry	158	11	135
Deschutes	3,250	1,029	2,033
Douglas	626	36	519
Gilliam	15	1	3
Grant	33	3	27
Harney	35	1	30
Hood River	365	11	284
Jackson	1,772	119	1,451
Jefferson	196	127	46
Josephine	500	88	340
Klamath	454	26	376
Lake	37	5	27

County	Clean Energy Jobs*	Renewable Energy Generation Jobs	Energy Efficiency Jobs
Lane	3,311	294	2,608
Lincoln	293	10	246
Linn	1,025	60	824
Malheur	152	19	100
Marion	3,699	179	2,989
Morrow	353	237	33
Multnomah	16,863	2,329	12,981
Polk	385	7	280
Sherman	38	15	3
Tillamook	120	6	96
Umatilla	552	12	364
Union	265	24	171
Wallowa	65	3	58
Wasco	259	74	134
Washington	12,955	2,242	9,574
Wheeler	4	0	3
Yamhill	692	15	557
N/A	726	18	620

\* 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 Legislative District

Data shows that distribution of clean energy jobs in Oregon crosses all political boundaries, with clean energy jobs in every congressional and state senate district.

### U.S. Congressional District

District	Total Clean Energy Jobs	Renewable Energy Generation Jobs	Energy Efficiency Jobs
1 (Rep. Bonamici)	17,509	2,854	13,014
2 (Rep. Bentz)	11,404	1,772	8,557
3 (Rep. Blumenauer)	12,148	1,229	9,043
4 (Rep. DeFazio)	10,191	1,123	8,056
5 (Rep. Schrader)	5,364	563	4,265

## State Senate

District	Clean Energy Jobs*	Renewable Energy Generation Jobs	Energy Efficiency Jobs
1 (Sen. Heard)	3,436	380	2,673
2 (Sen. Robinson)	1,643	170	1,289
3 (Sen. Golden)	1,550	192	1,188
4 (Sen. Prozanski)	4,185	485	3,237
5 (Sen. Anderson)	1,375	156	1,067
6 (Sen. Beyer)	1,470	160	1,146
7 (Sen. Manning Jr.)	198	20	156
8 (Sen. Gelser)	1,800	217	1,385
9 (Sen. Girod)	2,745	297	2,142
10 (Sen. Patterson)	2,086	221	1,632
11 (Sen. Courtney)	342	36	268
12 (Sen. Boquist)	1,666	171	1,308
13 (Sen. Thatcher)	2,830	298	2,215
14 (Sen. Lieber)	1,536	149	1,213
15 (Sen. Riley)	5,831	1,899	3,439

District	Clean Energy Jobs*	Renewable Energy Generation Jobs	Energy Efficiency Jobs
16 (Sen. Johnson)	1,590	175	1,238
17 (Sen. Steiner Hayward)	829	80	655
18 (Sen. Burdick)	4,043	413	3,175
19 (Sen. Wagner)	1,660	155	1,317
20 (VACANT)	1,826	181	1,439
21 (Sen. Taylor)	2,630	306	2,033
22 (Sen. Frederick)	2,709	376	2,041
23 (Sen. Dembrow)	826	84	649
24 (Sen. Jama)	397	40	312
25 (Sen. Gorsek)	797	76	631
26 (Sen. Thomsen)	378	45	291
27 (Sen. Knopp)	2,317	308	1,758
28 (Sen. Linthicum)	1,435	166	1,110
29 (Sen. Hansell)	1,710	191	1,329
30 (Sen. Findley)	779	93	600

### 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 USEER 2019 Employer Survey
- 3 Based on the 2019 U.S. Energy and Employment Report individual state snapshot for Oregon, available at <http://usenergyjos.org>
- 4 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/oessrcma.htm>



### PRESENTED BY:

E2 (Environmental Entrepreneurs) 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.



### IN PARTNERSHIP WITH:

Oregon Business for Climate aligns industry leadership to advance urgent, ambitious, equitable and effective climate policies, spurring innovation and opportunity, and helping Oregon re-emerge as a leader in the growing clean economy.