CLEAN JOBS CALIFORNIA¹ AMERICA'S CLEAN ENERGY POWERHOUSE IN THE WAKE OF COVID-19

Clean energy is a core part of California's economy. In 2019, more than a half-million Californians—including electricians, HVAC technicians, solar and wind installers and electric vehicle assemblers-worked across a wide swath of sectors, from construction and manufacturing to energy and finance. But after years of consistent growth, California's clean economy faces its toughest challenge in 2020 as it reels from the devastating effects of the global COVID-19 pandemic and subsequent economic shut-down.

After a fifth straight year of job growth since E2 (Environmental Entrepreneurs) began tracking U.S. clean energy employment, California's clean energy economy is facing a torrent of job losses and work freezes so significant it could set the industry back years. What had been one of the nation's fastest-growing job sectors over the last five years is now one of the fastest-shrinking in the wake of COVID-19-related shutdowns disrupting supply chains and building energy efficiency projects, halting new developments and emptying project pipelines, and slowing investments while wrecking financial outlooks.

Totaling 537,000 jobs at the end of 2019, California has lost 20% of its clean energy jobs since. More than 620,000 workers across the U.S. clean energy economy, including nearly 110,000 in California, have filed for unemployment since Marchreversing the industry's entire job growth since before 2016.

E2's Clean Jobs California 2020 details the sheer size of this important employment sector, the troubles it is currently facing due to COVID-19 and how focusing recovery policies on clean energy can get the Golden State's economy humming again-quickly and for the long run.

Clean Energy—an Economic Engine of Recovery

As state lawmakers and regulators look toward economic recovery, this report shows how clean energy is a major part of the Californian economy, employing workers from coastal cities, to the Central Valley, to the rural deserts and mountains in the east. In fact, about 2 out of every 5 clean energy jobs in California are in regions outside of the San Francisco Bay, Los Angeles, and San Diego metro areas. Small businesses-a backbone of California's economy-employ the vast majority of clean energy workers. Almost 58% of the state's clean energy workers

are employed by a business with fewer than 20 employees. Investing in clean energy will put thousands of Californians back to work quickly while setting the foundation for important job growth and a cleaner, stronger, more resilient and more secure economy in the future.

Tremendous job creation opportunity exists by staying the course on existing clean energy policy rule makings and implementation (e.g. the Advanced **Clean Truck and complementary fleets** rules) while building on, and expediting, the State's proven clean energy policy leadership. State lawmakers should drive investments and advance policies to: jumpstart development of new renewable energy projects; modernize California's electric grid and improve grid resiliency in the face of increasingly catastrophic wildfires; further the state's electric vehicle (EV) charging infrastructure and speed EV adoption; and upgrade the state's building stock through energy efficiency improvements and building electrification.

CLEAN ENERGYJOBS IN PERSPECTIVE

1 IN **6**

CLEAN ENERGY JOBS IN AMERICA IN 2019 WERE LOCATED IN **CALIFORNIA**

3%

OF ALL JOBS STATEWIDE WERE IN 2019

3 IN 10

CALIFORNIAN

110k

CALIFORNIA CLEAN ENERGY WORKERS FOR UNEMPLOYMENT SINCE MARCH

17.6%

OF ALL CLEAN ENERGY WORKERS FILING FOR **UNEMPLOYMENT WERE IN CALIFORNIA**

PRESENTED BY:



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For more information, contact E2 Western States Advocate Andv Wunder at awunder@e2.org

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

E2ES: 20-06-A

COVID-19 & THE CURRENT SITUATION

Entering 2020, California's clean energy economy had grown for five straight years since this annual report was first released, and clean energy jobs now make up 3 percent of the state's entire workforce.

The economic shutdown from the COVID-19 pandemic has upended the sector's progress both at home and nationwide delivering over 600,000 job losses across every state and every clean energy subsector, with forecasts indicating tougher times ahead. What had been one California's—and the nation's—economic success stories over the last decade lost hundreds of thousands of jobs in mere months. One out of every five clean energy workers in California employed in January had lost their job by the end of May.

Impact On Clean Jobs

Clean energy businesses and workers have suffered devastating job losses since the COVID-19 crisis began and the road to recovery is long.



Share of National Clean Energy Jobs Pre-COVID19



Share of National Clean Energy Job Losses Post-COVID19



Clean Job Unemployment Claims Skyrocket

Almost 110,000 California clean energy workers have filed for unemployment in the aftermath of the COVID-19 outbreak and subsequent economic meltdown, according to our analysis of unemployment data since March 2020.

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.

A closer look at California's unemployment claims through May:

BY INDUSTRY

Renewable Energy	29,349 jobs lost (-19.1% of sector's workforce)	
Energy Efficiency:	65,369 jobs lost (-20.2%)	
Clean Vehicles:	8,688 jobs lost (-21.4%)	
Storage & Grid:	4,963 jobs lost (-20.7%)	
Clean Fuels:	1,343 jobs lost (-15.3%)	

BY SELECT COUNTY

Los Angeles County:	18,667 jobs lost (-19.6% of county's clean energy workforce)
San Diego County:	6,704 jobs lost (-12.8%)
Alameda County:	5,718 jobs lost (-11.9%)
Riverside County:	4,081 jobs lost (-16.4%)
Kern County:	2,854 jobs lost (-35.2%)
Fresno County:	2,715 jobs lost (-32.0%)

CLEAN JOBS CALIFORNIA 2020: YEAR-IN-REVIEW

California's clean energy economy added over 7,000 jobs in 2019, driven by growth in electric vehicles, hydrogen and fuel-cell vehicles, energy storage, wind energy, grid modernization, and energy efficiency. The industry saw growth in 19 of 21 subsectors, including eight subsectors with more than 5% growth.

Totaling nearly 537,000 workers at the end of 2019, California's clean energy workforce is driven primarily by small businesses ranging across the supply chain from agriculture to manufacturing.



INDUSTRY BREAKDOWN: Q4 2019



CLEAN JOBS BY VALUE CHAIN



BIGGEST GROWTH SECTORS: 2018–2019

16.2% OTHER ETHANOL/ NON-WOODY BIOMASS (FUELS) **10.4%** HYDROGEN & FUEL-CELL VEHICLES

8.4% WIND ENERGY 8.2% ADVANCED MATERIALS (ENERGY EFFICIENCY) **7.5%** GRID MODERNIZATION 5.6% ELECTRIC VEHICLES

SMALL BUSINESSES FUEL SUCCESS



1 OUT OF EVERY 4 CLEAN ENERGY WORKERS IS EMPLOYED BY BUSINESSES WITH FEWER THAN 5 EMPLOYEES

CLEAN ENERGY WORKERS BY BUSINESS SIZE:

1-4 EMPLOYEES: 26.5% 5-19 EMPLOYEES: 31.0% 20-99 EMPLOYEES: 30.5% 100-499 EMPLOYEES: 10.1% 500+ EMPLOYEES: 2.0%

IMPACT BEYOND THE BIG CITIES

10,830 rural Californians were employed in clean energy



About **2 out of every 5 clean energy jobs** in California were in regions outside of the San Francisco Bay, Los Angeles, and San Diego metro areas

19.5%

of California's renewable generation workers were employed in metros areas with a **population under 1 million**

CLEAN JOBS CALIFORNIA 2020: ECONOMYWIDE VIEW

Viewed economywide, California's clean energy workforce is a vital element of the state's economic health. Clean energy accounted for 75% of the energy economy's job growth in 2019, expanding to 56% of the energy sector's total employment.

While solar energy employment dipped for the second consecutive year—attributable in part to the Trump Administration's tariffs on solar equipment that delayed many large-scale projects—the overall clean energy sector still added jobs four times faster than fossil fuels in 2019. Not counting solar energy's losses, the rest of the clean economy added jobs 52% faster than the state's economy overall.

CALIFORNIA'S CLEAN ECONOMY

56% of all energy sector jobs in California were in clean energy industries (6X more than fossil fuels)²



- Clean Energy Economy: 536,919 (+7,277 jobs)
- Fossil Fuels: 90,477 (+1,462 jobs)
- Motor Vehicles: 180,450 (+1,960 jobs)
- Trad. Transmission & Distribution Employment: 128,183 (-1,225 jobs)
- Nuclear: 4,347 (-133 jobs)
- Other: 16,041 (+348 jobs)

3-YEAR GROWTH TRENDS



SHARE OF TOTAL COUNTY EMPLOYMENT

Clean Energy Jobs per 1,000 workers MODO <5 5-10 TRINITY SHASTA LASSEN HUMBOLD 10-15 ТЕНАМА 15-20 PLUMAS AENDOCINO GLENN BUTTE SIERRA 20-25 COLUSA 14 15 25-30 SACRAMENTO 30-35 2 3 STOCKTON Δ 35+ TUOLUMNE SANTA ROSA Source: United States Bureau of Labor Statistics (BLS) 2019 Q2 employment, all ownerships 13 MARIPOSA SAN FRANCISCO MERCED OAKLAND MADERA SAN JOSE FRESNO MODESTO ERESN ΙΝΥΟ TULARE NTEREY KINGS COUNTIES 1 ALAMEDA **BAKERSEIFI D** 2 ALPINE KERN 3 AMADOR SAN BERNARDING 4 CALAVERAS S A N T A B A R B A R A **5 CONTRA COSTA** LOS ANGELES 6 MARIN 7 ORANGE COUNTY OXNARD • RIVERSIDE 8 SACRAMENTO LOS ANGELES 9 SAN JOAQUIN LONG BEACH 10 SAN MATEO 11 SANTA CLARA SANTA ANA IMPERIAL 12 SOLANO OCEANSIDE 13 STANISI AUS 14 SUTTER SAN DIEGO 15 YUBA

3% of all jobs in California were in clean energy industries³

CLEAN ENERGY: DRIVING CONSTRUCTION IN CALIFORNIA

272,000 workers in California were employed in construction work across the clean energy sector—installing new renewable energy systems, making buildings and schools more energy efficient, modernizing the electric grid, and more.

3 IN 10 CALIFORNIAN CONSTRUCTION WORKERS WERE EMPLOYED IN CLEAN ENERGY

CLEAN JOBS CALIFORNIA 2020: CLEAN ECONOMY COMPARISONS

California's policy leadership has made the state a national center for clean energy innovation and employment. In 2019, California continued to overshadow other states' clean energy economies, accounting for over 16% of all U.S. clean energy jobs and accounting for a greater share of overall state employment than the other top five states.

Notably, the state ranks first across many clean energy categories, and preforms well in all (fifth in wind energy jobs is the lowest individual ranking). This sector-by-sector consistency has helped California spread out the industry's jobs and opportunities across the entire clean energy ecosystem-allowing the state to widen its employment lead significantly as other states still work on scaling up many clean energy industries that have already matured in California.

AMERICA'S CLEAN ENERGY POWERHOUSE

THE GOLDEN STATE'S CLEAN ENERGY ECONOMY REMAINED THE NATION'S UNRIVALED BEHEMOTH IN 2019.



WERE BASED IN CALIFORNIA IN 2019.

NEARLY 1 IN EVERY 6 U.S. CLEAN ENERGY JOBS

JOBS

SOLAR JOBS

JOBS

Rest of U.S.: 225,741

Rest of U.S.: 123,623

6

AMERICA'S 3.4 MILLION-STRONG CLEAN ENERGY WORKFORCE ACROSS THE STATES: Q4 2019



California: 536,919 jobs Texas: 241,289 jobs Florida: 166,032 jobs New York: 159,337 jobs Michigan: 125,365 jobs

States Ranked 6-10: 572,254 jobs States Ranked 11-25: 1,037,561 jobs Bottom 25 States*: 516,663 jobs *Includes the District of Columbia

NO. 1 ACROSS THE BOARD

California ranked 1st in total jobs in the five main clean energy sectors—energy efficiency, renewable generation, storage and grid, clean vehicles and clean fuels. Among the 21 sub-technology sectors, the state ranks no lower than 5th, while ranking 1st in 12, including:



SECTOR/SUBSECTOR	NEXT CLOSEST STATE (JOBS DIFFERENCE)
Total Energy Efficiency	Texas (154,131)
Solar Energy	Massachusetts (107,927)
Total Renewable Generation	Texas (103,654)
Electric Vehicles	Maine (18,391)
Total Clean Vehicles	Michigan (16,554)
Clean Storage	Nevada (8,634)
Bioenergy/CHP	Florida (2,074)
Geothermal	Florida (1,601)

POLICIES MATTER

Clean Energy Investments—a Recipe for Recovery

Over the past 20 years, California's climate leadership has created markets and driven significant investment and job growth across the state, shepherding California's rise as a clean energy powerhouse. This policy leadership is more critical than ever. As the immediate impact of COVID-19 wanes and long-term effects grow, state policymakers looking to stimulate an economic recovery should leverage the proven job creation potential of clean energy.

Clean energy has a proven track record as a catalyst for quick job growth in the aftermath of economic meltdown. This is a sector that is key to a stronger, more resilient economy and one that will provide tremendous, multifaceted, returns on investment for taxpayers. For example, after the Great Recession, 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 across America and hundreds of new madein-America businesses-game-changing companies such as Tesla, which employed 45.000 workers before the COVID-19 crisisgot their start. And along the way, consumers and businesses saved billions of dollars, our environment benefitted, and our nation became more energy secure.

By strategically directing federal stimulus dollars, prioritizing state dollars, advancing a state recovery bond grounded in green bond principles, and fast-tracking policy that leverages private sector investment without budget implications, state policymakers can quickly repower our economy—and in ways that make it cleaner, more resilient and better positioned for continued growth.

Zero-Carbon Transportation:

- // Advance a statewide EV charging network by executing shovel-ready projects across the state. An immediate first step should be the approval of all charging infrastructure investments currently awaiting CPUC review.
- // Expand EV adoption incentives for light, medium, and heavy-duty vehicles through the Hybrid and Zero-Emission Truck, Bus Voucher Incentive Project (HVIP) and Clean Vehicle Rebate Program (CVRP), which will drive demand in a sector populated by Californian companies, including robust in-state manufacturing.

Renewable Energy and 21st Century Grid

- // Jumpstart development of new renewable energy projects by setting a lower greenhouse gas planning target in the CPUC's integrated resource planning (IRP) proceeding and facilitating coordinated procurement among the state's growing number of load-serving entities.
- // Improve air quality in low income communities and position California's offshore wind industry for growth by building a subsea transmission cable from the Los Angeles Basin to Diablo Canyon to resolve current regional transmission constraints, reduce dependency on dirty natural gas peaker plants, and minimize threats of grid induced wildfire, while providing transmission capacity to connect Southern California with potential future offshore wind development.

- // Invest in grid modernization and resilience by fast-tracking investments in system hardening by our state's investor-owned and publicly-owned utilities while supporting cost recovery as an essential part of the state's clean energy transition.
- // Accelerate Western grid integration by building on the Energy Imbalance Market to increase the demand for and accelerate the export of Californiaproduced renewable energy, while reducing electricity system costs, improving reliability, and cutting emissions.

Resilient, Clean, and Affordable Buildings

- // Invest in the Low-Income Weatherization Program (LIWP) to provide low-income households with solar energy and energy efficiency upgrades to slash emissions and utility bills.
- // Upgrade the State's residential, commercial, and institutional building stock via energy efficiency and building electrification improvements by scaling up and expanding programs like the Building Initiative for Low-Emissions Development (BUILD) and Technology and Equipment for Clean Heating (TECH) programs, utility customer-funded energy efficiency and electrification programs, as well as the California Clean Energy Jobs Act (Prop 39).

CLEAN JOBS CALIFORNIA 2020: GEOGRAPHIC DRILLDOWN

Clean Energy Jobs by Municipalities: Metro Areas

Metro	Clean Energy Jobs	Renewable Energy Generation Jobs	Energy Efficiency Jobs
Los Angeles	146,394	35,116	95,604
San Francisco-Oakland	122,813	34,549	60,873
San Diego	58,094	16,661	35,594
Riverside-San Bernardino	38,440	10,221	24,249
San Jose-Santa Clara	32,643	9,420	19,942
Sacramento	32,208	9,191	19,776
Santa Rosa-Petaluma	11,301	3,647	6,576
San Luis Obispo-Paso Robles	11,050	4,102	5,968
Fresno	9,765	2,419	6,311
Oxnard-Ventura	9,407	2,136	6,252
Santa Barbara-Santa Maria-Goleta	8,094	1,839	5,373
Bakersfield	8,078	2,305	4,960

Metro	Clean Energy Jobs	Renewable Energy Generation Jobs	Energy Efficiency Jobs
Stockton	6,025	1,577	3,822
Modesto	4,396	970	2,943
Salinas	4,300	932	2,893
Santa Cruz-Watsonville	3,774	770	2,637
Chico	3,325	892	2,056
Visalia-Porterville	3,055	776	1,958
Vallejo-Fairfield	2,870	586	1,963
Redding	2,532	523	1,725
Napa	2,187	454	1,489
Merced	1,295	303	852
Yuba City	1,201	270	799
El Centro	1,159	286	750
Madera	1,044	229	700
Hanford-Corcoran	640	157	415

Clean Energy Jobs by Municipalities: Counties

County	Total Clean Energy Jobs	Renewable Energy Generation Jobs	Energy Efficiency Jobs
Alameda	47,954	9,977	17,456
Alpine	7	3	3
Amador	180	39	120
Butte	2,037	757	1,084
Calaveras	229	32	181
Colusa	91	14	34
Contra Costa	16,042	5,912	8,996
Del Norte	83	13	62
El Dorado	1,474	159	1,143
Fresno	8,360	1,999	5,219
Glenn	113	18	62
Humboldt	893	190	616
Imperial	918	306	462
Inyo	225	152	61
Kern	7,960	2,539	4,282
Kings	410	63	267
Lake	360	179	156
Lassen	103	20	55
Los Angeles	94,687	15,795	67,577
Madera	794	116	554
Marin	4,393	1,406	2,666

County	Total Clean Energy Jobs	Renewable Energy Generation Jobs	Energy Efficiency Jobs
Mariposa	73	22	48
Mendocino	506	84	350
Merced	1,070	251	597
Modoc	42	12	22
Mono	112	14	94
Monterey	3,216	733	1,843
Napa	1,483	170	1,160
Nevada	1,045	216	742
Orange	56,771	11,036	38,515
Placer	6,631	2,367	3,830
Plumas	129	22	96
Riverside	24,726	7,373	14,637
Sacramento	18,857	5,232	12,104
San Benito	383	24	314
San Bernardino	14,368	2,097	9,826
San Diego	52,017	14,788	32,776
San Francisco	37,893	16,963	19,229
San Joaquin	5,191	1,297	3,148
San Luis Obispo	7,294	4,737	2,229
San Mateo	12,996	2,555	9,148
Santa Barbara	4,616	606	3,422

Clean Energy Jobs by Municipalities: Counties continued

County	Total Clean Energy Jobs	Renewable Energy Generation Jobs	Energy Efficiency Jobs
Santa Clara	51,714	18,651	29,634
Santa Cruz	2,385	539	1,462
Shasta	1,407	260	972
Sierra	14	6	8
Siskiyou	247	83	129
Solano	2,989	211	2,165
Sonoma	8,175	3,521	4,085
Stanislaus	3,839	592	2,673

County	Total Clean Energy Jobs	Renewable Energy Generation Jobs	Energy Efficiency Jobs
Sutter	521	47	339
Tehama	247	54	127
Trinity	29	11	14
Tulare	2,576	506	1,675
Tuolumne	301	51	208
Ventura	8,665	1,618	5,875
Yolo	7,681	6,047	1,281
Yuba	226	19	174

Clean Energy Jobs by District

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

U.S. Congressional District

District	Total Clean	Renewable Energy Generation	Energy Efficiency Jobs
1 (Pop Lo Molfo)	12 020	2 2012	Q 252
2 (Rep. La Malla)	12,930	3,284 5,670	0,202
	19,857	5,070	12,170
3 (Rep. Garamendi)	10,607	2,912	6,612
4 (Rep. McClintock)	12,505	3,515	7,724
5 (Rep. Thompson)	7,170	1,950	4,485
6 (Rep. Matsui)	9,943	2,599	6,310
7 (Rep. Bera)	5,577	1,481	3,519
8 (Rep. Cook)	6,828	1,697	4,407
9 (Rep. McNerney)	7,455	2,000	4,687
10 (Rep. Harder)	6,005	1,600	3,784
11 (Rep. DeSaulnier)	19,074	6,054	11,186
12 (Rep. Pelosi)	35,575	12,684	19,661
13 (Rep. Lee)	15,098	4,869	8,779
14 (Rep. Speier)	10,438	2,544	6,722
15 (Rep. Swalwell)	10,593	3,433	6,151
16 (Rep. Costa)	7,975	2,136	5,016
17 (Rep. Khanna)	34,824	5,092	10,673
18 (Rep. Eshoo)	10,393	2,583	6,764
19 (Rep. Lofgren)	4,583	1,097	2,994
20 (Rep. Panetta)	5,367	1,247	3,539
21 (Rep. Cox)	6,067	1,490	3,932
22 (Rep. Nunes)	4,170	1,037	2,691
23 (Rep. McCarthy)	6,517	2,174	3,731
24 (Rep. Carbajal)	18,603	5,389	11,352
25 (Rep. Garcia)	6,782	1,396	4,627
26 (Rep. Brownley)	5,202	1,181	3,460
27 (Rep. Chu)	10,696	2,036	7,440

District	Total Clean	Renewable Energy Generation	Energy Efficiency Jobs
29 (Dop Schiff)	10 207	2 0 7 9	0 002
20 (Rep. Scilli)	2 951	2,910	0,003
29 (Rep. Caluellas)	3,001	1.005	2,477
30 (Rep. Sherman)	8,447	1,820	0,089
31 (Rep. Aguilar)	3,895	1,024	2,407
32 (Rep. Napolitano)	6,159	1,678	3,850
33 (Rep. Lieu)	17,202	4,109	11,248
34 (Rep. Gomez)	7,819	1,750	5,214
35 (Rep. lorres)	7,486	1,605	5,063
36 (Rep. Ruiz)	9,769	3,324	5,533
37 (Rep. Bass)	5,854	1,375	3,849
38 (Rep. Sánchez)	6,844	1,923	4,227
39 (Rep. Cisneros)	10,790	2,504	7,119
40 (Rep. Roybal-Allard)	4,776	1,549	2,772
41 (Rep. Takano)	9,898	3,136	5,810
42 (Rep. Calvert)	6,035	1,874	3,575
43 (Rep. Waters)	5,715	1,697	3,452
44 (Rep. Barragan)	2,714	651	1,772
45 (Rep. Porter)	22,008	6,099	13,671
46 (Rep. Correa)	4,552	1,225	2,858
47 (Rep. Lowenthal)	7,184	1,556	4,836
48 (Rep. Rouda)	8,698	2,356	5,449
49 (Rep. Levin)	18,594	4,973	11,701
50 (Vacant)	7,143	1,662	4,708
51 (Rep. Vargas)	8,157	1,688	5,558
52 (Rep. Peters)	17,551	5,636	10,236
53 (Rep. Davis)	2,558	642	1,644

Clean Energy Jobs by District: State Senate

District	Total Clean Energy Jobs
1 (Sen. Dahle)	20,251
2 (Sen. McGuire)	16,976
3 (Sen. Dodd)	20,317
4 (Sen. Nielsen)	8,649
5 (Sen. Galgiani)	9,122
6 (Sen. Pan)	10,411
7 (Sen. Glazer)	12,385
8 (Sen. Borgeas)	12,315
9 (Sen. Skinner)	20,745
10 (Sen. Wieckowski)	42,541
11 (Sen. Wiener)	37,733
12 (Sen. Caballero)	6,355
13 (Sen. Hill)	14,707
14 (Sen. Hurtado)	9,327

District	Total Clean Energy Jobs
15 (Sen. Beall)	8,986
16 (Sen. Grove)	7,093
17 (Sen. Monning)	18,277
18 (Sen. Hertzberg)	12,748
19 (Sen. Jackson)	11,950
20 (Sen. Leyva)	10,877
21 (Sen. Wilk)	5,891
22 (Sen. Rubio)	9,548
23 (Sen. Morrell)	7,707
24 (Rep. Durazo)	13,262
25 (Sen. Portantino)	7,044
26 (Sen. Allen)	17,773
27 (Sen. Stern)	11,366
28 (Sen. Melendez)	11,509

	Total Clean
District	Energy Jobs
29 (Sen. Chang)	11,789
30 (Sen. Mitchell)	8,323
31 (Sen. Roth)	6,887
32 (Sen. Archuleta)	6,458
33 (Sen. Gonzalez)	9,171
34 (Sen. Umberg)	13,964
35 (Sen. Bradford)	6,672
36 (Sen. Bates)	19,451
37 (Sen. Moorlach)	16,116
38 (Sen. Jones)	15,851
39 (Sen. Atkins)	22,230
40 (Sen. Hueso)	4,140

Clean Energy Jobs by District: State Assembly

	Total Clean
District	Energy Jobs
1 (Asm. Dahle)	9,985
2 (Asm. Wood)	7,760
3 (Asm. Gallagher)	3,066
4 (Asm. Aguiar-Curry)	11,614
5 (Asm. Bigelow)	5,357
6 (Asm. Kiley)	10,870
7 (Asm. McCarty)	12,608
8 (Asm. Cooley)	2,000
9 (Asm. Cooper)	1,570
10 (Asm. Levine)	7,985
11 (Asm. Frazier Jr.)	3,141
12 (Asm. Flora)	5,995
13 (Asm. Eggman)	3,003
14 (Asm. Grayson)	12,902
15 (Asm. Wicks)	11,652
16 (Asm. Bauer-Kahan)	4,474
17 (Asm. Chiu)	36,163
18 (Asm. Bonta)	9,456
19 (Asm. Ting)	2,834
20 (Asm. Quirk)	9,333
21 (Asm. Gray)	1,806
22 (Asm. Mullin)	8,217
23 (Asm. Patterson)	8,526
24 (Asm. Berman)	10,543
25 (Asm. Chu)	33,048
26 (Asm. Mathis)	4,624
27 (Asm. Kalra)	2,532

	Total Clean
District	Energy Jobs
28 (Asm. Low)	4,679
29 (Asm. Stone)	7,343
30 (Asm. R. Rivas)	2,500
31 (Asm. Arambula)	1,649
32 (Asm. Salas Jr.)	3,204
33 (Asm. Obernolte)	4,350
34 (Asm. Fong)	3,596
35 (Asm. Cunningham)	13,273
36 (Asm. Lackey)	3,643
37 (Asm. Limón)	10,931
38 (Asm. Smith)	7,093
39 (Asm. L. Rivas)	3,921
40 (Asm. Ramos)	4,510
41 (Asm. Holden)	7,549
42 (Asm. Mayes)	8,042
43 (Asm. Friedman)	5,542
44 (Asm. Irwin)	3,314
45 (Asm. Gabriel)	8,464
46 (Asm. Nazarian)	2,951
47 (Asm. Reyes)	1,891
48 (Asm. Rubio)	3,772
49 (Asm. Chau)	2,847
50 (Asm. Bloom)	14,348
51 (Asm. Carrillo)	4,309
52 (Asm. Rodriguez)	6,539
53 (Asm. Santiago)	4,990
54 (Asm. Kamlager)	4,258

	Total Clean
District	Energy Jobs
55 (Asm. Chen)	5,936
56 (Asm. E. Garcia)	1,430
57 (Asm. Calderon)	4,825
58 (Asm. C. Garcia)	1,208
59 (Asm. Jones-Sawyer Jr.)	701
60 (Asm. Cervantes)	2,822
61 (Asm. Medina)	5,173
62 (Asm. Burke)	3,877
63 (Asm. Rendon)	4,475
64 (Asm. Gipson)	3,366
65 (Asm. Quirk-Silva)	5,818
66 (Asm. Muratsuchi)	2,901
67 (Vacant)	4,884
68 (Asm. Choi)	14,447
69 (Asm. Daly)	4,635
70 (Asm. O'Donnell)	3,669
71 (Asm. Voepel)	7,180
72 (Rep Diep)	3,719
73 (Asm. Brough)	5,880
74 (Asm. Petrie-Norris)	8,352
75 (Asm. Waldron)	7,577
76 (Asm. Boerner Horvath)	5,606
77 (Asm. Maienschien)	22,981
78 (Asm. Gloria)	12,315
79 (Asm. Weber)	2,448
80 (Asm. Gonzalez)	118

Methodology

The analysis expands on data from the 2020 U.S. Energy and Employment Report (USEER) produced by the Energy Futures Initiative (EFI) in partnership with the National Association of State Energy Officials (NASEO), using data collected and analyzed by the BW Research Partnership. The USEER analyzes data from the U.S. Bureau of Labor Statistics (BLS) Quarterly Census of Employment and Wages (QCEW) to track employment across many energy production, transmission, and distribution subsectors. In addition, the 2020 USEER relies on a unique supplemental survey of 30,000 business representatives across the United States. Created and conducted by BW Research and approved by the Office of Management and Budget and U.S. Department of Energy (DOE), this survey is used to identify energy-related employment within key subsectors of the broader industries as classified by the BLS and to assign them into their component energy and energy efficiency sectors.

E2 is a partner on the USEER, which was first released by the Department of Energy in 2016. The 2020 USEER was released on March 23, 2020 and is available at <u>www.usenergyjobs.org</u>.

An FAQ is also available here to answer any questions.



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.

E2 releases more than a dozen clean energy employment reports annually—including Clean Jobs America—with state-specific reports covering more than 20 states every year. Clean energy jobs have grown every year since the first national report was released in 2016.

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

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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 Based on the 2019 U.S. Energy and Employment Report individual state snapshot for California, available at http://usenergyjos.org.
- 3 United States Bureau of Labor Statistics (BLS) Q2 employment (2017, 2018, 2019), all ownerships.

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