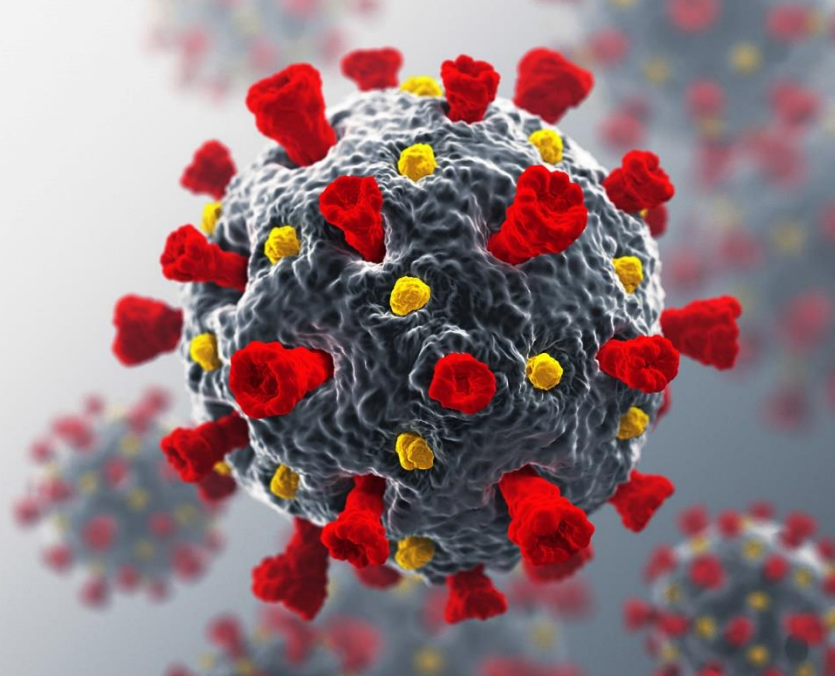


To: E2, E4TheFuture, and ACORE  
From: Philip Jordan  
Vice-President, BW Research Partnership  
Date: September 11, 2020

#### MEMORANDUM

Clean Energy Employment Initial Impacts from  
the COVID-19 Economic Crisis, July 2020,  
Revised



## INTRODUCTION

BW Research finds that the U.S. clean energy sector added 10,400 jobs in July, leaving over half a million (503,900) clean energy workers out of work despite nationwide re-openings. There remains a nearly 15 percent decline over pre-COVID-19 employment levels.

Unfortunately for the clean energy sector, June's job growth was short-lived. Concerns mentioned in previous jobs reports, such as high continued unemployment, casual or paused re-openings, and the exhaustion of many programs from earlier stimulus, were realized in this month's stagnant jobs report.

The August 7 jobs report, which showed that the U.S. economy created 1.5 million new jobs over the previous month, covers the first two weeks of July. These new jobs primarily fall in industries unrelated to clean energy, such as government, food and accommodation, and education and health services. While the recent jobs report has some positive news for the economy, it also contains some alarming trends.

Initial weekly unemployment claims continue at an historic pace. The most recent week's claims data, released on August 6, showed a slight decline in initial jobless claims, but is still at a level more than 50 percent higher than any week in our history prior to March. At the same time, the long-term unemployment rate – defined as 27 weeks of consecutive unemployment – has risen sharply since March to 1.5 million, representing more than 9 percent of the 16.3 million currently unemployed overall. Also alarming is the rise in permanent unemployment over the same period, which was a tiny fraction of the initial job losses in the Spring but now represents 2.9 million job losses, or nearly 18 percent of the total unemployed.<sup>1</sup>

The economy is currently reacting to viral resurgence as well as the drag from extended unemployment and related economic losses. Consumer confidence, while up from its lows in April and May, dropped six points in July. The continued viral spread, reversal of travel advisories and reopening plans, and the exhaustion of many of programs from earlier stimulus have added to this volatility.

This report shows no state nor clean energy sector as a significant job loser or gainer. However, impacts of this pandemic are not being felt evenly throughout worker demographics. Black and Hispanic workers

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<sup>1</sup> BLS Employment Situation Summary, Aug 7. <https://www.bls.gov/news.release/empsit.nr0.htm>.

continue to feel disproportionately high levels of unemployment, and while white workers have seen slight job growth over the past month, Black workers saw no change.<sup>2</sup>

## IMPACTS

Several recent analyses suggest that unemployment claims economy-wide do not represent the entirety of job losses, as many workers who are furloughed temporarily or are beneficiaries of the Paycheck Protection Program are not seeking other employment and therefore do not qualify for benefits. The data also do not include workers who had their hours slashed and are now significantly underemployed.

The July unemployment data shows job growth was no more than 0.4% for each of the clean energy sectors:

- Energy efficiency, the largest clean energy sector, experienced a 0.4 percent gain in employment, with the addition of approximately 6,800 jobs. The energy efficiency sector continues to suffer from 353,100 job losses impacting a full 15 percent of its workforce. For more information on state level energy efficiency impacts, see Appendix E: State Energy Efficiency Job Growth in July 2020.
- Renewable electric power generation saw a 0.4 percent rise in employment, with about 1,900 jobs regained in July. A total of 80,500 renewable electric power generation workers (14 percent of the sector's workforce) remain unemployed due to the pandemic.
- Clean fuels and clean transmission, distribution, and storage saw similarly small rebounds in July, gaining 300 and 400 jobs, respectively. The complete impact of the pandemic on clean fuels and clean transmission, distribution, and storage totals 10,600 and 22,400 lost jobs from their respective, pre-pandemic employment levels. Clean fuels jobs have dropped more than 10 percent since March, while clean transmission, distribution, and storage jobs have dropped more than 15 percent thus far.
- Clean vehicles added back 0.4 percent of its workforce, or about 900 jobs in July. The clean vehicles sector continues to experience a 14 percent decline in jobs over its pre-COVID-19 employment levels. This translates to 37,300 ongoing job losses.

California had the largest increase in July, with 0.5 percent of its clean energy workforce or 2,300 jobs returning in July. Massachusetts, Texas, Illinois, New York, and North Carolina all gained more than 500 clean energy jobs each in July. Wyoming, Alaska, South Dakota, West Virginia, Montana, North Dakota, Idaho, and Maine saw the smallest growth, all with less than 30 jobs gained over the past month. For growth by state, see Appendix A: State Clean Energy Job Growth in July 2020.

Counties that have lost more than 5,000 clean energy jobs since the beginning of March include Los Angeles County, CA; King County, WA; San Diego County, CA; Harris County, TX; and Orange County, CA. The counties that suffered hardest as a percent of their workforce are Kern County, CA; Fulton County, GA; DeKalb County, GA; Fresno County, CA; and Dakota County, MN. For losses by county, see Appendix C: Cumulative County Clean Energy Job Losses.

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<sup>2</sup> BLS Employment Situation Summary, Aug 7. <https://www.bls.gov/news.release/empsit.nr0.htm>.

The MSAs that have lost the most clean energy jobs are among the largest economic hubs in the US: Los Angeles-Long Beach-Santa Ana, CA MSA; New York-Northern New Jersey-Long Island, NY-NJ-PA MSA; Chicago-Naperville-Joliet, IL-IN-WI MSA; and San Francisco-Oakland-Fremont, CA MSA. MSAs that have been hit hard as a percentage of their workforce include Cleveland-Elyria-Mentor, OH MSA; Las Vegas-Paradise, NV MSA; Pittsburgh, PA MSA; and New Orleans-Metairie-Kenner, LA MSA. For losses by MSA, see Appendix D: Cumulative MSA Clean Energy Job Losses.

## METHODOLOGY

BLS employment reports for June and July, as well as the DOL unemployment weekly summaries, were used to calculate the labor impacts for the month. This month's data was updated due to revisions in the underlying BLS Employment Situation report and DOL weekly unemployment insurance claims source data. Please see prior months' memoranda for a more complete explanation of the methodology.

## ABOUT BW RESEARCH

BW Research is a full-service applied research firm that is focused on supporting our clients with economic & workforce research, customer & community research, as well as strategic planning and evaluation services. For more information and analysis on economic impacts related to COVID-19, please visit: <http://bwresearch.com/covid>

## APPENDIX A: STATE CLEAN ENERGY JOB GROWTH IN JULY 2020 (REVISED)

State	CE Job Growth	Percent Growth	State	CE Job Growth	Percent Growth
Alabama	80	0.2%	Montana	23	0.2%
Alaska	17	0.4%	Nebraska	38	0.2%
Arizona	159	0.3%	Nevada	51	0.2%
Arkansas	52	0.3%	New Hampshire	34	0.2%
California	2,346	0.5%	New Jersey	160	0.3%
Colorado	333	0.6%	New Mexico	62	0.6%
Connecticut	131	0.3%	New York	549	0.4%
Delaware	43	0.4%	North Carolina	539	0.6%
District of Columbia	57	0.5%	North Dakota	26	0.3%
Florida	397	0.3%	Ohio	286	0.3%
Georgia	121	0.2%	Oklahoma	36	0.2%
Hawaii	55	0.5%	Oregon	183	0.4%
Idaho	26	0.2%	Pennsylvania	256	0.3%
Illinois	565	0.5%	Rhode Island	48	0.4%
Indiana	217	0.3%	South Carolina	80	0.2%
Iowa	57	0.2%	South Dakota	19	0.2%
Kansas	82	0.4%	Tennessee	185	0.2%
Kentucky	30	0.1%	Texas	608	0.3%
Louisiana	67	0.3%	Utah	63	0.2%
Maine	26	0.2%	Vermont	51	0.3%
Maryland	188	0.3%	Virginia	279	0.3%
Massachusetts	620	0.7%	Washington	226	0.3%
Michigan	437	0.4%	West Virginia	22	0.3%
Minnesota	135	0.3%	Wisconsin	141	0.2%
Mississippi	42	0.2%	Wyoming	16	0.2%
Missouri	111	0.2%	<b>US TOTAL</b>	<b>10,373</b>	<b>0.4%</b>

APPENDIX B: CUMULATIVE STATE CLEAN ENERGY JOB LOSSES SINCE PRE-COVID  
(REVISED)

State	CE Jobs Lost	Percent Decline	State	CE Jobs Lost	Percent Decline
Alabama	7,836	17.3%	Montana	1,631	14.8%
Alaska	1,309	21.4%	Nebraska	2,755	12.5%
Arizona	7,678	12.3%	Nevada	4,192	12.3%
Arkansas	2,674	12.4%	New Hampshire	1,437	8.3%
California	87,535	15.9%	New Jersey	9,717	16.9%
Colorado	5,732	8.5%	New Mexico	2,062	16.4%
Connecticut	5,533	12.5%	New York	16,859	10.3%
Delaware	2,012	14.2%	North Carolina	20,841	18.2%
District of Columbia	2,563	16.5%	North Dakota	1,517	15.2%
Florida	26,246	15.7%	Ohio	16,297	14.0%
Georgia	27,232	31.5%	Oklahoma	4,518	19.0%
Hawaii	3,746	25.0%	Oregon	7,278	12.0%
Idaho	1,540	11.0%	Pennsylvania	18,689	19.2%
Illinois	12,158	9.4%	Rhode Island	3,307	20.2%
Indiana	12,272	13.7%	South Carolina	8,027	14.0%
Iowa	4,390	12.0%	South Dakota	691	5.5%
Kansas	2,946	11.1%	Tennessee	8,166	9.5%
Kentucky	11,197	28.6%	Texas	24,239	9.8%
Louisiana	7,643	23.9%	Utah	2,969	6.7%
Maine	1,872	13.7%	Vermont	2,206	12.1%
Maryland	10,304	12.1%	Virginia	11,824	11.9%
Massachusetts	15,279	13.4%	Washington	18,287	20.5%
Michigan	24,222	18.2%	West Virginia	1,516	14.5%
Minnesota	9,933	15.4%	Wisconsin	8,833	11.2%
Mississippi	3,577	16.1%	Wyoming	867	9.8%
Missouri	7,740	13.1%	<b>US TOTAL</b>	<b>503,897</b>	<b>14.5%</b>

## APPENDIX C: CUMULATIVE COUNTY CLEAN ENERGY JOB LOSSES (REVISED)

<b>State</b>	<b>County</b>	<b>CE Jobs Lost</b>	<b>% Decline</b>
California	Los Angeles County	14,876	15.6%
Washington	King County	6,526	17.3%
California	San Diego County	5,248	10.0%
Texas	Harris County	5,163	8.8%
California	Orange County	5,023	8.8%
Michigan	Oakland County	4,999	16.3%
Illinois	Cook County	4,865	8.6%
Michigan	Wayne County	4,819	24.0%
California	Alameda County	4,465	9.3%
California	Santa Clara County	4,186	8.1%
Georgia	Fulton County	3,945	28.0%
Arizona	Maricopa County	3,904	8.0%
Massachusetts	Middlesex County	3,720	9.7%
California	Riverside County	3,224	13.0%
New York	New York County	3,182	6.7%
Minnesota	Hennepin County	3,068	12.3%
California	San Francisco County	2,787	7.3%
Texas	Dallas County	2,754	7.4%
North Carolina	Mecklenburg County	2,682	13.1%
Massachusetts	Suffolk County	2,639	10.9%
Michigan	Macomb County	2,622	20.6%
California	Kern County	2,372	29.3%
Ohio	Cuyahoga County	2,335	16.5%
Florida	Palm Beach County	2,278	12.7%
Kentucky	Jefferson County	2,258	22.7%
California	Fresno County	2,237	26.4%
California	Sacramento County	2,184	11.5%
North Carolina	Wake County	2,137	12.1%
Florida	Miami-Dade County	2,048	10.7%
Indiana	Marion County	2,043	12.2%
Pennsylvania	Allegheny County	2,010	15.9%
Pennsylvania	Philadelphia County	1,853	19.6%
Georgia	Cobb County	1,844	23.7%
Missouri	Jackson County	1,834	18.5%
Florida	Broward County	1,829	12.1%
Georgia	Gwinnett County	1,807	24.3%
Florida	Hillsborough County	1,797	12.1%
Wisconsin	Dane County	1,788	18.1%
Massachusetts	Essex County	1,786	12.7%
Utah	Utah County	1,770	14.3%

Rhode Island	Providence County	1,751	18.4%
Oregon	Multnomah County	1,747	10.2%
California	San Bernardino County	1,742	12.0%
Hawaii	Honolulu County	1,691	15.9%
Florida	Orange County	1,682	11.6%
Nevada	Clark County	1,677	10.5%
Oregon	Washington County	1,637	12.5%
Wisconsin	Waukesha County	1,600	17.9%
California	Contra Costa County	1,579	9.8%
Michigan	Kent County	1,515	14.7%
Washington	Snohomish County	1,473	18.6%
Virginia	Fairfax County	1,457	7.2%
Connecticut	Hartford County	1,400	10.3%
Wisconsin	Milwaukee County	1,391	11.2%
Florida	Duval County	1,382	13.0%
Maryland	Baltimore County	1,360	10.4%
Massachusetts	Norfolk County	1,353	10.9%
Georgia	DeKalb County	1,351	27.4%
Missouri	St. Louis County	1,323	10.1%
Massachusetts	Worcester County	1,289	13.5%
Ohio	Franklin County	1,255	9.3%
Texas	Tarrant County	1,219	7.4%
Delaware	New Castle County	1,216	12.6%
Connecticut	Fairfield County	1,194	10.3%
Maryland	Prince George's County	1,190	10.4%
Maryland	Montgomery County	1,188	8.1%
Pennsylvania	Montgomery County	1,169	12.9%
Ohio	Hamilton County	1,145	10.0%
Tennessee	Shelby County	1,113	10.1%
Washington	Pierce County	1,108	15.4%
Texas	Bexar County	1,107	7.1%
Pennsylvania	Lehigh County	1,102	14.3%
New York	Suffolk County	1,085	7.4%
California	San Joaquin County	1,082	20.3%
California	Sonoma County	1,049	12.7%
Texas	Travis County	1,047	5.7%
New York	Onondaga County	1,009	25.8%
Florida	Pinellas County	996	11.8%
California	Ventura County	991	11.2%
Minnesota	Ramsey County	972	16.1%
Massachusetts	Plymouth County	965	15.0%
Minnesota	Dakota County	960	26.2%
Connecticut	New Haven County	951	10.8%

Kansas	Johnson County	919	11.3%
Utah	Salt Lake County	917	5.4%
Illinois	DuPage County	917	6.7%
California	San Mateo County	896	6.8%
Colorado	Denver County	894	6.4%
Oklahoma	Oklahoma County	853	12.7%
North Carolina	Guilford County	844	13.2%
New Jersey	Morris County	839	15.4%
Alabama	Jefferson County	825	11.4%
Massachusetts	Hampden County	810	13.0%
South Carolina	Charleston County	802	13.4%
New York	Nassau County	797	6.5%
Massachusetts	Bristol County	797	14.8%
Louisiana	East Baton Rouge County	786	13.3%
New York	Erie County	776	8.8%
Florida	Lee County	765	12.4%
New York	Queens County	758	6.5%
New Jersey	Bergen County	730	11.3%
Iowa	Polk County	729	9.6%
Indiana	Lake County	724	13.4%
Ohio	Lucas County	723	15.3%
Illinois	Lake County	704	10.9%
New Jersey	Monmouth County	699	12.5%
New Jersey	Essex County	695	17.5%
Idaho	Ada County	693	12.3%
Ohio	Montgomery County	693	13.8%
Tennessee	Davidson County	692	5.8%
Colorado	Jefferson County	674	9.6%
Alabama	Madison County	669	10.6%
California	Stanislaus County	668	17.1%
New Jersey	Middlesex County	659	12.0%
New Mexico	Bernalillo County	654	10.1%
Tennessee	Hamilton County	647	11.7%
Pennsylvania	Lancaster County	644	14.1%
Louisiana	Jefferson County	640	15.0%
New Hampshire	Hillsborough County	637	12.1%
New York	Kings County	632	7.7%
New York	Westchester County	629	7.2%
Arizona	Pima County	628	9.0%
California	Monterey County	618	18.4%
Minnesota	Anoka County	612	17.3%
Washington	Clark County	607	11.4%
Colorado	Adams County	605	11.3%



South Carolina	Greenville County	595	8.3%
Maryland	Anne Arundel County	592	7.3%
Colorado	Arapahoe County	586	7.4%
Washington	Spokane County	581	11.5%
Nebraska	Douglas County	564	8.9%
California	Placer County	543	8.2%
Arkansas	Pulaski County	542	12.3%
Pennsylvania	Berks County	533	15.5%
Indiana	Allen County	532	9.9%
Florida	Polk County	517	14.2%
California	Santa Barbara County	511	10.8%
Pennsylvania	York County	509	13.8%
Kansas	Sedgwick County	508	11.2%
Texas	Collin County	508	6.9%
Oregon	Clackamas County	505	9.7%
Oklahoma	Tulsa County	501	8.1%
Virginia	Loudoun County	497	9.5%
Missouri	St. Charles County	495	14.8%
Ohio	Summit County	486	9.4%
Pennsylvania	Bucks County	485	9.3%
Tennessee	Knox County	480	7.8%
New Jersey	Union County	475	15.5%
Ohio	Stark County	474	16.3%
New York	Monroe County	470	8.1%
Nevada	Washoe County	469	7.6%
South Carolina	Richland County	466	11.9%
Pennsylvania	Chester County	464	9.1%
California	Tulare County	439	16.6%
Ohio	Butler County	435	16.5%
Oregon	Lane County	433	12.2%
Virginia	Prince William County	428	11.1%
New Jersey	Mercer County	427	13.7%
Michigan	Washtenaw County	426	11.1%
Colorado	El Paso County	422	7.6%
Texas	Nueces County	406	12.7%
Pennsylvania	Delaware County	399	12.0%
Illinois	Will County	392	8.2%
Illinois	Kane County	391	9.4%
New Jersey	Burlington County	388	12.2%
Florida	Sarasota County	386	10.6%
Texas	El Paso County	383	8.5%
North Carolina	Forsyth County	366	11.1%
Florida	Brevard County	363	7.7%

New Jersey	Ocean County	363	10.9%
Texas	Montgomery County	360	10.3%
Florida	Volusia County	357	12.4%
Utah	Davis County	352	9.1%
Texas	Hidalgo County	338	14.5%
Alabama	Mobile County	336	8.5%
Michigan	Genesee County	335	11.3%
New Jersey	Camden County	334	11.5%
Florida	Collier County	325	9.5%
New York	Richmond County	318	14.2%
Florida	Seminole County	314	6.6%
New York	Bronx County	307	10.0%
Louisiana	Orleans County	295	11.2%
Florida	Manatee County	289	12.0%
California	Solano County	283	9.4%
South Carolina	Horry County	276	12.7%
Texas	Denton County	272	6.6%
Texas	Brazoria County	268	11.5%
Texas	Williamson County	266	8.6%
New Jersey	Hudson County	263	12.1%
New Jersey	Passaic County	259	13.1%
Colorado	Larimer County	253	6.6%
Texas	Fort Bend County	239	7.8%
New York	Orange County	196	8.8%
Florida	Pasco County	191	8.7%
Florida	Marion County	181	9.2%
Texas	Cameron County	162	13.2%
Florida	Lake County	153	8.5%
Texas	Bell County	142	10.1%
Florida	Osceola County	123	10.5%
Arizona	Pinal County	92	12.3%

## APPENDIX D: CUMULATIVE MSA CLEAN ENERGY JOB LOSSES (REVISED)

<b>MSA</b>	<b>CE Jobs Lost</b>	<b>% Decline</b>
Los Angeles-Long Beach-Santa Ana, CA MSA	42,053	28.7%
New York-Northern New Jersey-Long Island, NY-NJ-PA MSA	29,516	19.2%
Chicago-Naperville-Joliet, IL-IN-WI MSA	25,060	24.4%
San Francisco-Oakland-Fremont, CA MSA	22,073	18.0%
Houston-Sugar Land-Baytown, TX MSA	17,591	27.1%
Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	16,032	18.0%
Detroit-Warren-Livonia, MI MSA	13,579	24.5%
Dallas-Fort Worth-Arlington, TX MSA	13,482	23.0%
Miami-Fort Lauderdale-Pompano Beach, FL MSA	13,425	22.0%
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	13,374	27.0%
Seattle-Tacoma-Bellevue, WA MSA	13,357	27.6%
Boston-Cambridge-Quincy, MA-NH MSA	12,964	13.5%
Atlanta-Sandy Springs-Marietta, GA MSA	12,659	23.0%
Phoenix-Mesa-Scottsdale, AZ MSA	12,400	26.1%
San Diego-Carlsbad-San Marcos, CA MSA	12,133	20.9%
Riverside-San Bernardino-Ontario, CA MSA	10,055	26.2%
Cleveland-Elyria-Mentor, OH MSA	8,591	38.4%
Sacramento-Arden-Arcade-Roseville, CA MSA	7,826	24.3%
Baltimore-Towson, MD MSA	7,708	19.8%
Minneapolis-St. Paul-Bloomington, MN-WI MSA	7,657	18.2%
Denver-Aurora, CO MSA	7,637	21.9%
Las Vegas-Paradise, NV MSA	7,544	34.2%
Portland-Vancouver-Beaverton, OR-WA MSA	6,409	18.0%
Pittsburgh, PA MSA	5,822	32.1%
St. Louis, MO-IL MSA	5,796	21.4%
San Jose-Sunnyvale-Santa Clara, CA MSA	5,768	17.7%
Tampa-St. Petersburg-Clearwater, FL MSA	5,264	23.9%
Cincinnati-Middletown, OH-KY-IN MSA	5,109	25.1%
Austin-Round Rock, TX MSA	4,932	18.8%
Charlotte-Gastonia-Concord, NC-SC MSA	4,842	19.4%
San Antonio, TX MSA	4,778	22.4%
Kansas City, MO-KS MSA	4,195	20.1%
Indianapolis-Carmel, IN MSA	4,083	16.4%
Columbus, OH MSA	4,043	23.9%
Salt Lake City, UT MSA	3,803	21.0%
Orlando-Kissimmee, FL MSA	3,646	21.6%
Milwaukee-Waukesha-West Allis, WI MSA	3,590	17.5%
Virginia Beach-Norfolk-Newport News, VA-NC MSA	3,521	19.1%
Louisville/Jefferson County, KY-IN MSA	3,478	24.5%
Nashville-Davidson-Murfreesboro-Franklin, TN MSA	3,417	14.1%

Memphis, TN-AR-MS MSA	3,328	22.3%
New Orleans-Metairie-Kenner, LA MSA	3,276	30.9%
Raleigh-Cary, NC MSA	2,993	18.6%
Richmond, VA MSA	2,981	18.1%
Hartford-West Hartford-East Hartford, CT MSA	2,872	19.3%
Reno-Sparks, NV MSA	2,784	28.4%
Jacksonville, FL MSA	2,680	24.1%
Birmingham-Hoover, AL MSA	2,208	16.6%
Buffalo-Niagara Falls, NY MSA	2,204	24.9%
Albuquerque, NM MSA	2,025	28.2%
Rochester, NY MSA	1,900	22.9%
Providence-New Bedford-Fall River, RI-MA MSA	1,673	23.3%
Des Moines-West Des Moines, IA MSA	1,247	19.0%
Oklahoma City, OK MSA	1,142	13.3%
Honolulu, HI MSA	912	9.6%
Flint, MI MSA	813	21.3%

## APPENDIX E: STATE ENERGY EFFICIENCY JOB GROWTH IN JULY 2020 (REVISED)

State	EE Job Growth	Percent Growth	State	EE Job Growth	Percent Growth
Alabama	51	0.2%	Montana	18	0.2%
Alaska	12	0.4%	Nebraska	24	0.2%
Arizona	109	0.3%	Nevada	18	0.2%
Arkansas	36	0.3%	New Hampshire	21	0.2%
California	1,385	0.5%	New Jersey	101	0.3%
Colorado	167	0.5%	New Mexico	30	0.6%
Connecticut	105	0.3%	New York	433	0.4%
Delaware	37	0.4%	North Carolina	416	0.6%
District of Columbia	45	0.4%	North Dakota	15	0.3%
Florida	269	0.3%	Ohio	195	0.3%
Georgia	83	0.2%	Oklahoma	23	0.2%
Hawaii	18	0.4%	Oregon	123	0.3%
Idaho	15	0.2%	Pennsylvania	192	0.4%
Illinois	368	0.5%	Rhode Island	36	0.4%
Indiana	129	0.3%	South Carolina	38	0.1%
Iowa	34	0.2%	South Dakota	12	0.2%
Kansas	55	0.4%	Tennessee	116	0.2%
Kentucky	19	0.1%	Texas	428	0.3%
Louisiana	49	0.3%	Utah	47	0.2%
Maine	16	0.2%	Vermont	33	0.4%
Maryland	148	0.2%	Virginia	217	0.3%
Massachusetts	381	0.6%	Washington	159	0.3%
Michigan	272	0.4%	West Virginia	14	0.2%
Minnesota	98	0.3%	Wisconsin	107	0.2%
Mississippi	27	0.2%	Wyoming	14	0.2%
Missouri	80	0.2%	<b>US TOTAL</b>	<b>6,836</b>	<b>0.4%</b>

APPENDIX F: CUMULATIVE STATE ENERGY EFFICIENCY JOB LOSSES SINCE PRE-COVID (REVISED)

State	EE Jobs Lost	Percent Decline	State	EE Jobs Lost	Percent Decline
Alabama	5,671	18.0%	Montana	1,359	15.4%
Alaska	1,037	22.1%	Nebraska	1,862	13.3%
Arizona	5,649	12.6%	Nevada	1,598	13.3%
Arkansas	2,022	13.0%	New Hampshire	1,041	8.7%
California	52,603	16.3%	New Jersey	6,578	17.3%
Colorado	3,243	9.0%	New Mexico	1,074	17.6%
Connecticut	4,661	12.9%	New York	13,154	10.4%
Delaware	1,795	14.3%	North Carolina	16,218	18.4%
District of Columbia	2,154	16.6%	North Dakota	889	15.9%
Florida	19,675	15.9%	Ohio	12,020	14.5%
Georgia	20,118	32.0%	Oklahoma	2,940	19.5%
Hawaii	1,691	27.8%	Oregon	5,467	12.7%
Idaho	1,055	11.7%	Pennsylvania	14,463	20.2%
Illinois	8,710	9.6%	Rhode Island	2,689	20.6%
Indiana	8,034	14.4%	South Carolina	4,429	14.4%
Iowa	2,736	12.9%	South Dakota	447	5.9%
Kansas	2,052	11.5%	Tennessee	5,655	10.5%
Kentucky	7,785	29.7%	Texas	17,251	10.2%
Louisiana	5,612	24.1%	Utah	2,249	6.9%
Maine	1,300	14.6%	Vermont	1,402	12.7%
Maryland	8,681	12.2%	Virginia	9,652	12.0%
Massachusetts	9,843	13.8%	Washington	13,920	21.4%
Michigan	15,874	18.6%	West Virginia	1,058	14.8%
Minnesota	7,411	15.7%	Wisconsin	7,214	11.3%
Mississippi	2,615	16.7%	Wyoming	757	10.0%
Missouri	5,728	13.5%	<b>US TOTAL</b>	<b>353,140</b>	<b>15.0%</b>

## APPENDIX G: MONTHLY CLEAN ENERGY JOB LOSSES BY STATE (REVISED)

(Negative values denote job growth)

State	March	April	May	June	July	Total
Alabama	1,383	7,261	334	-1,062	-80	7,836
Alaska	328	1,073	88	-163	-17	1,309
Arizona	1,484	7,433	359	-1,440	-159	7,678
Arkansas	555	2,533	119	-480	-52	2,674
California	27,583	77,815	4,313	-19,831	-2,346	87,535
Colorado	1,326	5,952	252	-1,466	-333	5,732
Connecticut	1,037	5,191	323	-887	-131	5,533
Delaware	729	1,766	99	-539	-43	2,012
District of Columbia	935	1,843	119	-277	-57	2,563
Florida	3,963	25,949	2,563	-5,832	-397	26,246
Georgia	1,909	25,282	1,741	-1,579	-121	27,232
Hawaii	908	3,351	154	-612	-55	3,746
Idaho	580	1,229	54	-298	-26	1,540
Illinois	4,524	12,007	926	-4,733	-565	12,158
Indiana	3,766	10,954	511	-2,741	-217	12,272
Iowa	1,388	3,758	162	-860	-57	4,390
Kansas	1,023	2,436	125	-556	-82	2,946
Kentucky	2,180	9,383	559	-895	-30	11,197
Louisiana	2,135	6,220	294	-940	-67	7,643
Maine	682	1,382	130	-295	-26	1,872
Maryland	2,857	9,055	726	-2,146	-188	10,304
Massachusetts	6,726	12,147	776	-3,750	-620	15,279
Michigan	7,867	22,245	1,012	-6,465	-437	24,222
Minnesota	3,536	7,628	382	-1,478	-135	9,933
Mississippi	511	3,379	306	-577	-42	3,577
Missouri	2,108	6,864	340	-1,461	-111	7,740
Montana	622	1,213	51	-233	-23	1,631
Nebraska	806	2,495	143	-652	-38	2,755
Nevada	1,176	3,686	149	-767	-51	4,192
New Hampshire	498	1,134	63	-224	-34	1,437
New Jersey	3,252	8,115	422	-1,912	-160	9,717
New Mexico	711	1,759	80	-426	-62	2,062
New York	6,006	13,868	848	-3,314	-549	16,859
North Carolina	9,124	17,138	955	-5,837	-539	20,841
North Dakota	335	1,399	120	-311	-26	1,517
Ohio	6,929	12,879	612	-3,837	-286	16,297
Oklahoma	718	4,143	390	-697	-36	4,518
Oregon	1,747	7,206	516	-2,007	-183	7,278
Pennsylvania	8,283	12,780	571	-2,689	-256	18,689

<b>Rhode Island</b>	1,351	2,460	75	-532	-48	3,307
<b>South Carolina</b>	1,427	7,869	382	-1,570	-80	8,027
<b>South Dakota</b>	165	784	65	-305	-19	691
<b>Tennessee</b>	2,297	7,878	460	-2,284	-185	8,166
<b>Texas</b>	5,965	25,170	1,709	-7,997	-608	24,239
<b>Utah</b>	1,073	2,826	120	-987	-63	2,969
<b>Vermont</b>	651	2,029	68	-490	-51	2,206
<b>Virginia</b>	2,828	10,845	666	-2,236	-279	11,824
<b>Washington</b>	5,646	14,433	1,163	-2,729	-226	18,287
<b>West Virginia</b>	205	1,610	48	-325	-22	1,516
<b>Wisconsin</b>	3,020	7,814	532	-2,392	-141	8,833
<b>Wyoming</b>	281	747	58	-203	-16	867
<b>US TOTAL</b>	<b>147,139</b>	<b>446,416</b>	<b>27,035</b>	<b>-106,320</b>	<b>-10,373</b>	<b>503,897</b>



## APPENDIX H: MONTHLY CLEAN ENERGY JOB LOSSES BY MAJOR TECHNOLOGY (REVISED)

(Negative values denote job growth)

State	March	April	May	June	July	Total
<b>Renewable Electric Power Generation</b>	23,739	71,705	4,272	-17,287	-1,918	80,513
<b>Clean Transmission, Distribution, &amp; Storage</b>	6,517	19,666	1,166	-4,561	-428	22,360
<b>Energy Efficiency</b>	103,298	309,584	18,880	-71,786	-6,836	353,140
<b>Clean Fuels</b>	2,186	10,390	657	-2,351	-296	10,586
<b>Clean Vehicles</b>	11,399	35,070	2,059	-10,335	-896	37,298
<b>Total</b>	<b>147,139</b>	<b>446,416</b>	<b>27,035</b>	<b>-106,320</b>	<b>-10,373</b>	<b>503,897</b>