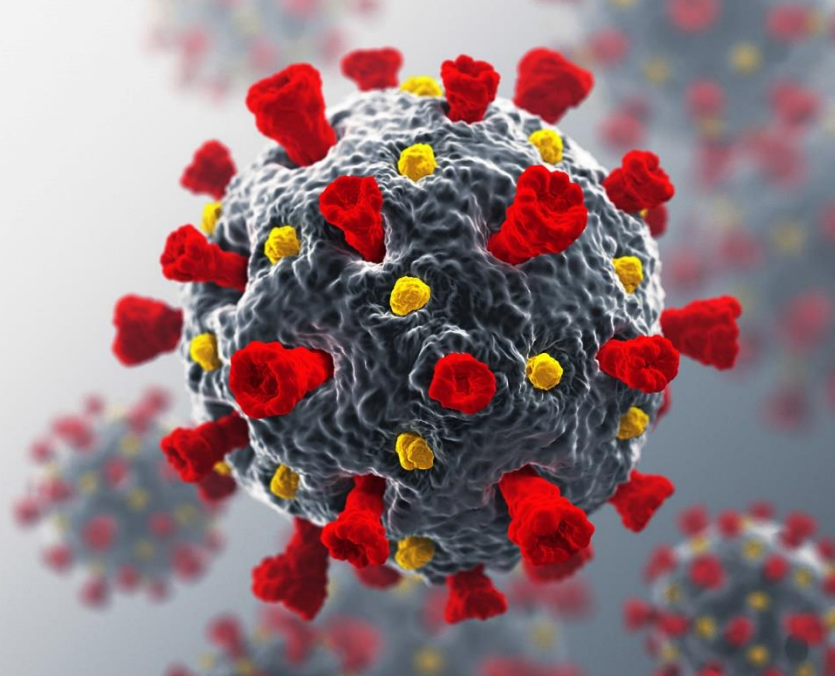


To: E2, E4TheFuture, and ACORE
From: Philip Jordan
Vice-President, BW Research Partnership
Date: September 14, 2020

MEMORANDUM

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



INTRODUCTION

BW Research finds that the U.S. clean energy sector added 13,600 jobs in August, leaving just under half a million (490,300) clean energy workers out of work despite nationwide re-openings. There remains a more than 14 percent decline over pre-COVID-19 employment levels.

Unfortunately for the clean energy sector, July's anemic job growth continued through August. 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 September 4 jobs report, which showed that the U.S. economy created 1.4 million new jobs over the previous month, covers the first two weeks of August. While these new jobs primarily fall in industries unrelated to clean energy (e.g. government, leisure and hospitality, and education and health services), job gains are also seen in clean energy adjacent industries, such as professional and business services. While the recent jobs report has some positive news for the economy, alarming trends remain.

Weekly unemployment claims continue at an historic high pace. The September 3rd weekly claims data showed a slight decline in initial jobless claims, but is still at a level more than 50 percent higher than any week in the data's recorded history prior to March.¹ At the same time, the long-term unemployment rate – defined as 27 weeks of consecutive unemployment – has risen sharply since March to 1.6 million, representing about 12 percent of the 13.6 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 3.4 million job losses, or a quarter of the total unemployed.²

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 another 7 points after its 6 point decline in July. The continued viral spread, reversal of travel advisories and reopening plans, and the exhaustion of many programs from earlier stimulus have added to this volatility.

¹ Weekly unemployment claims data collection began in January 1967, <https://oui.doleta.gov/unemploy/claims.asp>.

² BLS Employment Situation Summary, Sept 4. <https://www.bls.gov/news.release/empsit.nr0.htm>.

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 continue to suffer from disproportionately high levels of unemployment.³

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 August unemployment data show job growth was no more than 1 percent 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 8,100 jobs. The energy efficiency sector continues to suffer from 345,000 job losses impacting nearly 15 percent of its workforce. For more information on state level energy efficiency impacts, see Appendix E: State Energy Efficiency Job Growth in August 2020.
- Renewable electric power generation saw a 0.5 percent rise in employment, with about 2,600 jobs regained in August. A total of 77,900 renewable electric power generation workers (13 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 August, gaining 200 and 500 jobs, respectively. The complete impact of the pandemic on clean fuels and clean transmission, distribution, and storage totals 10,400 and 21,900 lost jobs from their respective, pre-pandemic employment levels. Clean fuels jobs have dropped 10 percent since March, while clean transmission, distribution, and storage jobs have dropped 15 percent thus far.
- Clean vehicles added back 1 percent of its workforce, or about 2,200 jobs in August. The clean vehicles sector continues to experience a nearly 14 percent decline in jobs over its pre-COVID-19 employment levels. This translates to 35,100 ongoing job losses.

California had the largest increase in August, with 3,100 jobs returning in August or 0.7 percent of its clean energy workforce. Massachusetts saw the highest percentage of clean energy workforce growth but was still below 1 percent increase (0.9 percent) for a total gain of more than 800 jobs. New York and Texas also gained more than 800 clean energy jobs each in August. Idaho, West Virginia, Montana, South Dakota, Alaska, and Wyoming 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 August 2020.

This low level of job growth is especially concerning given the dramatic decline in clean energy jobs since the onset of COVID-19. Over 40 states continue to suffer double digit unemployment in clean energy with

³ BLS Employment Situation Summary, Sept 4. <https://www.bls.gov/news.release/empsit.nr0.htm>.

over half a dozen states facing greater than 20 percent unemployment and one state, Georgia, facing more than 30 percent unemployment in the sector.

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; and Harris County, TX. 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.

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 July and August, as well as the DOL unemployment weekly summaries, were used to calculate the labor impacts for the month. 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 AUGUST 2020

State	CE Job Growth	Percent Growth	State	CE Job Growth	Percent Growth
Alabama	110	0.3%	Montana	27	0.3%
Alaska	22	0.5%	Nebraska	53	0.3%
Arizona	184	0.3%	Nevada	73	0.2%
Arkansas	72	0.4%	New Hampshire	33	0.2%
California	3,097	0.7%	New Jersey	183	0.4%
Colorado	305	0.5%	New Mexico	72	0.7%
Connecticut	197	0.5%	New York	1,185	0.8%
Delaware	45	0.4%	North Carolina	683	0.7%
District of Columbia	74	0.6%	North Dakota	40	0.5%
Florida	596	0.4%	Ohio	331	0.3%
Georgia	174	0.3%	Oklahoma	56	0.3%
Hawaii	32	0.3%	Oregon	205	0.4%
Idaho	29	0.2%	Pennsylvania	400	0.5%
Illinois	604	0.5%	Rhode Island	62	0.5%
Indiana	200	0.3%	South Carolina	144	0.3%
Iowa	58	0.2%	South Dakota	25	0.2%
Kansas	104	0.4%	Tennessee	250	0.3%
Kentucky	53	0.2%	Texas	833	0.4%
Louisiana	90	0.4%	Utah	74	0.2%
Maine	52	0.4%	Vermont	68	0.4%
Maryland	233	0.3%	Virginia	351	0.4%
Massachusetts	848	0.9%	Washington	309	0.4%
Michigan	351	0.3%	West Virginia	28	0.3%
Minnesota	162	0.3%	Wisconsin	161	0.2%
Mississippi	63	0.3%	Wyoming	19	0.2%
Missouri	134	0.3%	US TOTAL	13,556	0.5%

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

State	CE Jobs Lost	Percent Decline	State	CE Jobs Lost	Percent Decline
Alabama	7,726	17.0%	Montana	1,604	14.5%
Alaska	1,287	21.0%	Nebraska	2,702	12.3%
Arizona	7,495	12.0%	Nevada	4,119	12.1%
Arkansas	2,602	12.1%	New Hampshire	1,404	8.1%
California	84,439	15.3%	New Jersey	9,534	16.6%
Colorado	5,426	8.1%	New Mexico	1,990	15.8%
Connecticut	5,337	12.1%	New York	15,674	9.6%
Delaware	1,967	13.9%	North Carolina	20,157	17.6%
District of Columbia	2,489	16.0%	North Dakota	1,477	14.8%
Florida	25,650	15.3%	Ohio	15,965	13.8%
Georgia	27,058	31.3%	Oklahoma	4,462	18.8%
Hawaii	3,715	24.7%	Oregon	7,073	11.7%
Idaho	1,510	10.8%	Pennsylvania	18,290	18.8%
Illinois	11,554	8.9%	Rhode Island	3,244	19.8%
Indiana	12,072	13.5%	South Carolina	7,883	13.8%
Iowa	4,332	11.8%	South Dakota	666	5.3%
Kansas	2,843	10.7%	Tennessee	7,916	9.2%
Kentucky	11,144	28.5%	Texas	23,406	9.5%
Louisiana	7,553	23.6%	Utah	2,895	6.5%
Maine	1,820	13.3%	Vermont	2,139	11.7%
Maryland	10,071	11.9%	Virginia	11,472	11.5%
Massachusetts	14,431	12.7%	Washington	17,979	20.2%
Michigan	23,871	18.0%	West Virginia	1,487	14.2%
Minnesota	9,771	15.1%	Wisconsin	8,672	11.0%
Mississippi	3,514	15.8%	Wyoming	848	9.6%
Missouri	7,606	12.9%	US TOTAL	490,341	14.2%

APPENDIX C: CUMULATIVE COUNTY CLEAN ENERGY JOB LOSSES

State	County	CE Jobs Lost	% Decline
California	Los Angeles County	14,495	15.2%
Washington	King County	6,440	17.1%
California	San Diego County	5,104	9.7%
Texas	Harris County	5,019	8.6%
Michigan	Oakland County	4,947	16.2%
California	Orange County	4,883	8.6%
Michigan	Wayne County	4,774	23.8%
Illinois	Cook County	4,695	8.3%
California	Alameda County	4,341	9.0%
California	Santa Clara County	4,068	7.8%
Georgia	Fulton County	3,922	27.8%
Arizona	Maricopa County	3,829	7.8%
Massachusetts	Middlesex County	3,586	9.4%
California	Riverside County	3,139	12.6%
New York	New York County	3,040	6.4%
Minnesota	Hennepin County	3,026	12.1%
California	San Francisco County	2,709	7.1%
Texas	Dallas County	2,676	7.2%
North Carolina	Mecklenburg County	2,624	12.8%
Michigan	Macomb County	2,596	20.4%
Massachusetts	Suffolk County	2,544	10.5%
California	Kern County	2,321	28.6%
Ohio	Cuyahoga County	2,297	16.3%
Kentucky	Jefferson County	2,249	22.7%
Florida	Palm Beach County	2,227	12.4%
California	Fresno County	2,187	25.8%
California	Sacramento County	2,125	11.2%
North Carolina	Wake County	2,090	11.8%
Indiana	Marion County	2,015	12.0%
Florida	Miami-Dade County	2,001	10.4%
Pennsylvania	Allegheny County	1,974	15.6%
Georgia	Cobb County	1,832	23.6%
Pennsylvania	Philadelphia County	1,820	19.3%
Missouri	Jackson County	1,806	18.2%
Georgia	Gwinnett County	1,796	24.2%
Florida	Broward County	1,788	11.9%
Florida	Hillsborough County	1,757	11.9%
Wisconsin	Dane County	1,746	17.7%
Rhode Island	Providence County	1,739	18.2%
Utah	Utah County	1,732	14.0%

Massachusetts	Essex County	1,723	12.3%
Oregon	Multnomah County	1,710	10.0%
California	San Bernardino County	1,695	11.7%
Hawaii	Honolulu County	1,684	15.8%
Nevada	Clark County	1,651	10.4%
Florida	Orange County	1,644	11.3%
Oregon	Washington County	1,607	12.3%
Wisconsin	Waukesha County	1,583	17.7%
California	Contra Costa County	1,536	9.5%
Michigan	Kent County	1,499	14.6%
Washington	Snohomish County	1,454	18.3%
Virginia	Fairfax County	1,424	7.1%
Wisconsin	Milwaukee County	1,370	11.0%
Connecticut	Hartford County	1,363	10.0%
Florida	Duval County	1,352	12.7%
Georgia	DeKalb County	1,344	27.2%
Maryland	Baltimore County	1,333	10.2%
Massachusetts	Norfolk County	1,304	10.5%
Missouri	St. Louis County	1,303	10.0%
Massachusetts	Worcester County	1,244	13.0%
Ohio	Franklin County	1,233	9.1%
Delaware	New Castle County	1,190	12.4%
Texas	Tarrant County	1,184	7.2%
Maryland	Prince George's County	1,166	10.2%
Maryland	Montgomery County	1,164	8.0%
Connecticut	Fairfield County	1,163	10.0%
Pennsylvania	Montgomery County	1,147	12.6%
Ohio	Hamilton County	1,125	9.8%
Washington	Pierce County	1,094	15.2%
Tennessee	Shelby County	1,086	9.9%
Pennsylvania	Lehigh County	1,085	14.1%
Texas	Bexar County	1,076	6.9%
California	San Joaquin County	1,056	19.8%
New York	Suffolk County	1,037	7.0%
California	Sonoma County	1,030	12.5%
Texas	Travis County	1,017	5.6%
New York	Onondaga County	976	24.9%
Florida	Pinellas County	973	11.6%
California	Ventura County	965	10.9%
Minnesota	Ramsey County	956	15.9%
Massachusetts	Plymouth County	953	14.8%
Minnesota	Dakota County	939	25.6%
Connecticut	New Haven County	926	10.6%

Kansas	Johnson County	902	11.1%
Utah	Salt Lake County	897	5.3%
Illinois	DuPage County	884	6.5%
California	San Mateo County	871	6.6%
Colorado	Denver County	867	6.2%
Oklahoma	Oklahoma County	844	12.6%
North Carolina	Guilford County	829	12.9%
New Jersey	Morris County	824	15.2%
Alabama	Jefferson County	813	11.2%
Massachusetts	Hampden County	800	12.8%
South Carolina	Charleston County	790	13.2%
Massachusetts	Bristol County	785	14.5%
Louisiana	East Baton Rouge County	768	13.0%
New York	Nassau County	761	6.2%
Florida	Lee County	748	12.1%
New York	Erie County	742	8.4%
New York	Queens County	724	6.2%
New Jersey	Bergen County	718	11.1%
Iowa	Polk County	716	9.5%
Indiana	Lake County	716	13.2%
Ohio	Lucas County	711	15.0%
Illinois	Lake County	692	10.8%
New Jersey	Essex County	684	17.2%
Idaho	Ada County	682	12.1%
New Jersey	Monmouth County	680	12.2%
Ohio	Montgomery County	677	13.4%
Tennessee	Davidson County	667	5.6%
Alabama	Madison County	658	10.4%
California	Stanislaus County	656	16.7%
Colorado	Jefferson County	655	9.3%
New Jersey	Middlesex County	648	11.8%
Tennessee	Hamilton County	639	11.6%
Pennsylvania	Lancaster County	635	13.9%
Louisiana	Jefferson County	632	14.8%
New Mexico	Bernalillo County	631	9.7%
New Hampshire	Hillsborough County	621	11.8%
Arizona	Pima County	616	8.8%
California	Monterey County	607	18.0%
New York	Kings County	604	7.4%
Minnesota	Anoka County	601	17.0%
New York	Westchester County	601	6.9%
Washington	Clark County	600	11.3%
Colorado	Adams County	592	11.0%

South Carolina	Greenville County	581	8.1%
Maryland	Anne Arundel County	579	7.2%
Colorado	Arapahoe County	575	7.3%
Washington	Spokane County	570	11.3%
Nebraska	Douglas County	555	8.7%
California	Placer County	533	8.0%
Arkansas	Pulaski County	531	12.0%
Pennsylvania	Berks County	527	15.4%
Indiana	Allen County	523	9.7%
Florida	Polk County	506	13.9%
Pennsylvania	York County	503	13.7%
California	Santa Barbara County	502	10.6%
Oregon	Clackamas County	496	9.6%
Texas	Collin County	494	6.7%
Oklahoma	Tulsa County	489	7.9%
Missouri	St. Charles County	489	14.6%
Kansas	Sedgwick County	487	10.7%
Virginia	Loudoun County	482	9.2%
Ohio	Summit County	480	9.2%
Pennsylvania	Bucks County	480	9.2%
Tennessee	Knox County	472	7.7%
Ohio	Stark County	466	16.0%
New Jersey	Union County	454	14.8%
South Carolina	Richland County	454	11.6%
Pennsylvania	Chester County	453	8.9%
Nevada	Washoe County	452	7.3%
New York	Monroe County	450	7.7%
California	Tulare County	434	16.4%
Ohio	Butler County	430	16.3%
Oregon	Lane County	425	12.0%
Virginia	Prince William County	418	10.8%
Michigan	Washtenaw County	418	10.8%
New Jersey	Mercer County	416	13.3%
Colorado	El Paso County	409	7.4%
Texas	Nueces County	396	12.4%
Pennsylvania	Delaware County	394	11.8%
Illinois	Will County	384	8.0%
Illinois	Kane County	382	9.2%
Florida	Sarasota County	379	10.4%
New Jersey	Burlington County	378	11.9%
Texas	El Paso County	372	8.2%
North Carolina	Forsyth County	356	10.8%
Florida	Brevard County	356	7.5%

New Jersey	Ocean County	355	10.7%
Texas	Montgomery County	353	10.1%
Florida	Volusia County	351	12.2%
Utah	Davis County	343	8.8%
Alabama	Mobile County	332	8.4%
Michigan	Genesee County	331	11.1%
Texas	Hidalgo County	329	14.2%
New Jersey	Camden County	327	11.2%
Florida	Collier County	317	9.3%
New York	Richmond County	310	13.9%
Florida	Seminole County	309	6.5%
New York	Bronx County	294	9.6%
Louisiana	Orleans County	292	11.1%
Florida	Manatee County	284	11.8%
California	Solano County	273	9.1%
South Carolina	Horry County	272	12.5%
Texas	Denton County	264	6.4%
Texas	Brazoria County	260	11.2%
Texas	Williamson County	258	8.3%
New Jersey	Hudson County	255	11.8%
New Jersey	Passaic County	254	12.8%
Colorado	Larimer County	245	6.4%
Texas	Fort Bend County	232	7.6%
New York	Orange County	190	8.5%
Florida	Pasco County	185	8.5%
Florida	Marion County	179	9.1%
Texas	Cameron County	159	13.0%
Florida	Lake County	149	8.2%
Texas	Bell County	139	9.9%
Florida	Osceola County	120	10.2%
Arizona	Pinal County	87	11.7%

APPENDIX D: CUMULATIVE MSA CLEAN ENERGY JOB LOSSES

MSA	CE Jobs Lost	% Decline
Los Angeles-Long Beach-Santa Ana, CA MSA	41,540	28.4%
New York-Northern New Jersey-Long Island, NY-NJ-PA MSA	28,903	18.8%
Chicago-Naperville-Joliet, IL-IN-WI MSA	24,819	24.1%
San Francisco-Oakland-Fremont, CA MSA	21,743	17.7%
Houston-Sugar Land-Baytown, TX MSA	17,457	26.9%
Washington-Arlington-Alexandria, DC-VA-MD-WV MSA	15,870	17.8%
Detroit-Warren-Livonia, MI MSA	13,476	24.3%
Dallas-Fort Worth-Arlington, TX MSA	13,380	22.9%
Seattle-Tacoma-Bellevue, WA MSA	13,275	27.5%
Miami-Fort Lauderdale-Pompano Beach, FL MSA	13,250	21.7%
Philadelphia-Camden-Wilmington, PA-NJ-DE-MD MSA	13,235	26.7%
Boston-Cambridge-Quincy, MA-NH MSA	12,616	13.1%
Atlanta-Sandy Springs-Marietta, GA MSA	12,561	22.8%
Phoenix-Mesa-Scottsdale, AZ MSA	12,300	25.9%
San Diego-Carlsbad-San Marcos, CA MSA	11,967	20.6%
Riverside-San Bernardino-Ontario, CA MSA	9,943	25.9%
Cleveland-Elyria-Mentor, OH MSA	8,549	38.2%
Sacramento-Arden-Arcade-Roseville, CA MSA	7,743	24.0%
Baltimore-Towson, MD MSA	7,643	19.7%
Minneapolis-St. Paul-Bloomington, MN-WI MSA	7,585	18.1%
Denver-Aurora, CO MSA	7,581	21.8%
Las Vegas-Paradise, NV MSA	7,482	33.9%
Portland-Vancouver-Beaverton, OR-WA MSA	6,334	17.8%
Pittsburgh, PA MSA	5,775	31.9%
St. Louis, MO-IL MSA	5,750	21.3%
San Jose-Sunnyvale-Santa Clara, CA MSA	5,693	17.4%
Tampa-St. Petersburg-Clearwater, FL MSA	5,217	23.6%
Cincinnati-Middletown, OH-KY-IN MSA	5,079	24.9%
Austin-Round Rock, TX MSA	4,889	18.6%
Charlotte-Gastonia-Concord, NC-SC MSA	4,792	19.2%
San Antonio, TX MSA	4,739	22.2%
Kansas City, MO-KS MSA	4,162	20.0%
Indianapolis-Carmel, IN MSA	4,044	16.3%
Columbus, OH MSA	4,015	23.8%
Salt Lake City, UT MSA	3,782	20.9%
Orlando-Kissimmee, FL MSA	3,590	21.3%
Milwaukee-Waukesha-West Allis, WI MSA	3,555	17.3%
Virginia Beach-Norfolk-Newport News, VA-NC MSA	3,483	18.9%
Louisville/Jefferson County, KY-IN MSA	3,461	24.4%
Nashville-Davidson-Murfreesboro-Franklin, TN MSA	3,368	13.9%

Memphis, TN-AR-MS MSA	3,292	22.1%
New Orleans-Metairie-Kenner, LA MSA	3,251	30.7%
Raleigh-Cary, NC MSA	2,966	18.4%
Richmond, VA MSA	2,948	17.9%
Hartford-West Hartford-East Hartford, CT MSA	2,838	19.1%
Reno-Sparks, NV MSA	2,769	28.2%
Jacksonville, FL MSA	2,659	23.9%
Birmingham-Hoover, AL MSA	2,186	16.4%
Buffalo-Niagara Falls, NY MSA	2,177	24.6%
Albuquerque, NM MSA	2,005	27.9%
Rochester, NY MSA	1,875	22.6%
Providence-New Bedford-Fall River, RI-MA MSA	1,655	23.0%
Des Moines-West Des Moines, IA MSA	1,239	18.9%
Oklahoma City, OK MSA	1,127	13.1%
Honolulu, HI MSA	904	9.5%
Flint, MI MSA	804	21.1%

APPENDIX E: STATE ENERGY EFFICIENCY JOB GROWTH IN AUGUST 2020

State	EE Job Growth	Percent Growth	State	EE Job Growth	Percent Growth
Alabama	65	0.3%	Montana	18	0.2%
Alaska	14	0.4%	Nebraska	34	0.3%
Arizona	111	0.3%	Nevada	22	0.2%
Arkansas	45	0.3%	New Hampshire	19	0.2%
California	1,592	0.6%	New Jersey	91	0.3%
Colorado	144	0.4%	New Mexico	29	0.6%
Connecticut	142	0.5%	New York	840	0.7%
Delaware	36	0.3%	North Carolina	495	0.7%
District of Columbia	55	0.5%	North Dakota	22	0.5%
Florida	348	0.3%	Ohio	204	0.3%
Georgia	108	0.3%	Oklahoma	30	0.2%
Hawaii	19	0.4%	Oregon	137	0.4%
Idaho	15	0.2%	Pennsylvania	267	0.5%
Illinois	361	0.4%	Rhode Island	44	0.4%
Indiana	111	0.2%	South Carolina	66	0.2%
Iowa	35	0.2%	South Dakota	13	0.2%
Kansas	66	0.4%	Tennessee	140	0.3%
Kentucky	31	0.2%	Texas	490	0.3%
Louisiana	56	0.3%	Utah	48	0.2%
Maine	27	0.4%	Vermont	40	0.4%
Maryland	164	0.3%	Virginia	249	0.4%
Massachusetts	482	0.8%	Washington	203	0.4%
Michigan	204	0.3%	West Virginia	15	0.3%
Minnesota	110	0.3%	Wisconsin	115	0.2%
Mississippi	40	0.3%	Wyoming	14	0.2%
Missouri	87	0.2%	US TOTAL	8,116	0.4%

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

State	EE Jobs Lost	Percent Decline	State	EE Jobs Lost	Percent Decline
Alabama	5,606	17.8%	Montana	1,341	15.2%
Alaska	1,022	21.7%	Nebraska	1,828	13.1%
Arizona	5,537	12.4%	Nevada	1,575	13.1%
Arkansas	1,976	12.8%	New Hampshire	1,022	8.6%
California	51,011	15.8%	New Jersey	6,487	17.1%
Colorado	3,099	8.6%	New Mexico	1,044	17.1%
Connecticut	4,518	12.6%	New York	12,314	9.7%
Delaware	1,759	14.0%	North Carolina	15,723	17.9%
District of Columbia	2,098	16.2%	North Dakota	867	15.5%
Florida	19,327	15.6%	Ohio	11,816	14.2%
Georgia	20,010	31.8%	Oklahoma	2,911	19.3%
Hawaii	1,672	27.5%	Oregon	5,330	12.4%
Idaho	1,040	11.5%	Pennsylvania	14,196	19.9%
Illinois	8,349	9.2%	Rhode Island	2,644	20.3%
Indiana	7,923	14.2%	South Carolina	4,364	14.2%
Iowa	2,701	12.8%	South Dakota	434	5.7%
Kansas	1,986	11.1%	Tennessee	5,515	10.2%
Kentucky	7,753	29.6%	Texas	16,761	9.9%
Louisiana	5,556	23.9%	Utah	2,201	6.8%
Maine	1,273	14.3%	Vermont	1,363	12.4%
Maryland	8,517	11.9%	Virginia	9,403	11.7%
Massachusetts	9,361	13.1%	Washington	13,718	21.1%
Michigan	15,670	18.4%	West Virginia	1,043	14.6%
Minnesota	7,301	15.5%	Wisconsin	7,099	11.2%
Mississippi	2,576	16.4%	Wyoming	743	9.8%
Missouri	5,641	13.3%	US TOTAL	345,024	14.6%

APPENDIX G: MONTHLY CLEAN ENERGY JOB LOSSES BY STATE

(Negative values denote job growth)

State	March	April	May	June	July ⁴	August	Total
Alabama	1,383	7,261	334	-1,062	-80	-110	7,726
Alaska	328	1,073	88	-163	-17	-22	1,287
Arizona	1,484	7,433	359	-1,440	-159	-184	7,495
Arkansas	555	2,533	119	-480	-52	-72	2,602
California	27,583	77,815	4,313	-19,831	-2,346	-3,097	84,439
Colorado	1,326	5,952	252	-1,466	-333	-305	5,426
Connecticut	1,037	5,191	323	-887	-131	-197	5,337
Delaware	729	1,766	99	-539	-43	-45	1,967
District of Columbia	935	1,843	119	-277	-57	-74	2,489
Florida	3,963	25,949	2,563	-5,832	-397	-596	25,650
Georgia	1,909	25,282	1,741	-1,579	-121	-174	27,058
Hawaii	908	3,351	154	-612	-55	-32	3,715
Idaho	580	1,229	54	-298	-26	-29	1,510
Illinois	4,524	12,007	926	-4,733	-565	-604	11,554
Indiana	3,766	10,954	511	-2,741	-217	-200	12,072
Iowa	1,388	3,758	162	-860	-57	-58	4,332
Kansas	1,023	2,436	125	-556	-82	-104	2,843
Kentucky	2,180	9,383	559	-895	-30	-53	11,144
Louisiana	2,135	6,220	294	-940	-67	-90	7,553
Maine	682	1,382	130	-295	-26	-52	1,820
Maryland	2,857	9,055	726	-2,146	-188	-233	10,071
Massachusetts	6,726	12,147	776	-3,750	-620	-848	14,431
Michigan	7,867	22,245	1,012	-6,465	-437	-351	23,871
Minnesota	3,536	7,628	382	-1,478	-135	-162	9,771
Mississippi	511	3,379	306	-577	-42	-63	3,514
Missouri	2,108	6,864	340	-1,461	-111	-134	7,606
Montana	622	1,213	51	-233	-23	-27	1,604
Nebraska	806	2,495	143	-652	-38	-53	2,702
Nevada	1,176	3,686	149	-767	-51	-73	4,119
New Hampshire	498	1,134	63	-224	-34	-33	1,404
New Jersey	3,252	8,115	422	-1,912	-160	-183	9,534
New Mexico	711	1,759	80	-426	-62	-72	1,990
New York	6,006	13,868	848	-3,314	-549	-1,185	15,674
North Carolina	9,124	17,138	955	-5,837	-539	-683	20,157
North Dakota	335	1,399	120	-311	-26	-40	1,477
Ohio	6,929	12,879	612	-3,837	-286	-331	15,965
Oklahoma	718	4,143	390	-697	-36	-56	4,462

⁴ July data has been updated to reflect revisions in BLS data.

Oregon	1,747	7,206	516	-2,007	-183	-205	7,073
Pennsylvania	8,283	12,780	571	-2,689	-256	-400	18,290
Rhode Island	1,351	2,460	75	-532	-48	-62	3,244
South Carolina	1,427	7,869	382	-1,570	-80	-144	7,883
South Dakota	165	784	65	-305	-19	-25	666
Tennessee	2,297	7,878	460	-2,284	-185	-250	7,916
Texas	5,965	25,170	1,709	-7,997	-608	-833	23,406
Utah	1,073	2,826	120	-987	-63	-74	2,895
Vermont	651	2,029	68	-490	-51	-68	2,139
Virginia	2,828	10,845	666	-2,236	-279	-351	11,472
Washington	5,646	14,433	1,163	-2,729	-226	-309	17,979
West Virginia	205	1,610	48	-325	-22	-28	1,487
Wisconsin	3,020	7,814	532	-2,392	-141	-161	8,672
Wyoming	281	747	58	-203	-16	-19	848
US TOTAL	147,139	446,416	27,035	-106,320	-10,373	-13,556	490,341

APPENDIX H: MONTHLY CLEAN ENERGY JOB LOSSES BY MAJOR TECHNOLOGY

(Negative values denote job growth)

State	March	April	May	June	July ⁵	August	Total
Renewable Electric Power Generation	23,739	71,705	4,272	-17,287	-1,918	-2,571	77,942
Clean Transmission, Distribution, & Storage	6,517	19,666	1,166	-4,561	-428	-482	21,878
Energy Efficiency	103,298	309,584	18,880	-71,786	-6,836	-8,116	345,024
Clean Fuels	2,186	10,390	657	-2,351	-296	-205	10,381
Clean Vehicles	11,399	35,070	2,059	-10,335	-896	-2,182	35,116
Total	147,139	446,416	27,035	-106,320	-10,373	-13,556	490,341

⁵ July data has been updated to reflect revisions in BLS data.