Good for the Economy.
Good for the Environment.

Clean Energy Workforce
The National Governors’ Association’s (NGA) Governors’ Advisors Energy Policy Institute

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Presented by-
Sandra Purohit
Director of Federal Advocacy
Sandra@e2.org
E- WHO?

**E2** - national nonpartisan group of over 11,000 business leaders, investors and professionals from all sectors of the economy and across the US.

We advocate for policies that are good for the economy and good for the environment.

6th annual Clean Jobs America Report (and others).
https://e2.org/reports

- clean energy jobs broken down by
- Sector
- State
- Metro Statistical Area in America
- Non-metro rural jobs as well.

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### TABLE 3 // U.S. EMPLOYMENT by comparable occupations 2020

<table>
<thead>
<tr>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail Salespersons</td>
<td>3,659,670</td>
<td>4,317,950</td>
<td>4,448,120</td>
<td>4,442,090</td>
<td>-2.79%</td>
</tr>
<tr>
<td>Clean Energy Sectors*</td>
<td><strong>3,048,603</strong></td>
<td><strong>3,355,419</strong></td>
<td><strong>3,284,600</strong></td>
<td><strong>3,165,050</strong></td>
<td><strong>6.01%</strong></td>
</tr>
<tr>
<td>Registered Nurses</td>
<td>2,986,500</td>
<td>2,982,280</td>
<td>2,951,960</td>
<td>2,906,840</td>
<td>2.60%</td>
</tr>
<tr>
<td>Customer Service Representatives</td>
<td>2,833,250</td>
<td>2,919,230</td>
<td>2,871,400</td>
<td>2,767,790</td>
<td>5.47%</td>
</tr>
<tr>
<td>Commercial Banking</td>
<td>2,065,527</td>
<td>2,063,270</td>
<td>2,067,089</td>
<td>2,076,128</td>
<td>-2.79%</td>
</tr>
<tr>
<td>Elementary and Middle School Teachers</td>
<td>1,976,050</td>
<td>2,064,680</td>
<td>2,032,880</td>
<td>2,043,520</td>
<td>1.04%</td>
</tr>
<tr>
<td>Waiters and Waitresses</td>
<td>1,944,240</td>
<td>2,579,020</td>
<td>2,582,410</td>
<td>2,584,220</td>
<td>-0.20%</td>
</tr>
<tr>
<td>Heavy and Tractor-Trailer Truck Drivers</td>
<td>1,797,710</td>
<td>1,856,130</td>
<td>1,800,330</td>
<td>1,748,140</td>
<td>6.18%</td>
</tr>
<tr>
<td>Engineers</td>
<td>1,673,440</td>
<td>1,730,720</td>
<td>1,700,880</td>
<td>1,665,220</td>
<td>3.93%</td>
</tr>
<tr>
<td>Lawyers</td>
<td>658,120</td>
<td>657,170</td>
<td>642,750</td>
<td>628,370</td>
<td>4.58%</td>
</tr>
</tbody>
</table>

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FIG. 9 // U.S. EMPLOYMENT GROWTH 2017–2020

- Clean Energy: 3,048,603 (-3.7%)
- Total U.S. Employment: 138,549,503 (-4.6%)

-12.4%
-13%
FIG. 4 // U.S. CLEAN ENERGY EMPLOYMENT by establishment size 2020

500+ EMPLOYEES: 2.5%
100-499 EMPLOYEES: 8.1%
20-99 EMPLOYEES: 25.1%
1-4 EMPLOYEES: 32.9%
5-19 EMPLOYEES: 31.5%

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FIG. 11 // U.S. CLEAN ENERGY EMPLOYMENT by industry 2020

**Manufacturing:**
- Total Jobs: 499,432
- Energy Efficiency: 290,418
- Clean Vehicles: 110,982
- Renewable Energy: 72,047
- Storage: 15,812
- Grid Modernization: 6,599
- Clean Fuels: 3,575

**Professional & Business Services:**
- Total Jobs: 620,988
- Energy Efficiency: 456,853
- Renewable Energy: 104,627
- Clean Fuels: 24,053
- Grid Modernization: 14,500
- Storage: 12,987
- Clean Vehicles: 7,968

**Utilities:**
- Total Jobs: 15,674
- Wind: 6,882
- Solar: 4,077
- Geothermal: 1,113
- Bioenergy/CHP: 3,602

**Wholesale Trade & Distribution:**
- Total Jobs: 287,235
- Energy Efficiency: 177,644
- Clean Vehicles: 46,277
- Renewable Energy: 44,532
- Storage: 8,738
- Clean Fuels: 6,756
- Grid Modernization: 3,287

**Construction:**
- Total Jobs: 1,440,441
- Energy Efficiency: 1,144,276
- Renewable Energy: 222,233
- Storage: 39,304
- Grid Modernization: 34,627

**Other Services** (Repair and Maintenance/Other):
- Total Jobs: 182,257
- Clean Vehicles: 108,402
- Energy Efficiency: 37,083
- Renewable Energy: 33,761
- Storage: 1,199
- Grid Modernization: 818
- Clean Fuels: 93
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CLEAN ENERGY JOBS PAY 25% MORE THAN NATIONAL MEDIAN WAGE

Clean Energy median wage = $23.87
National median wage = $19.14

Top States by Median Clean Energy Wage

<table>
<thead>
<tr>
<th>State</th>
<th>Median Clean Energy Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Massachusetts</td>
<td>$29.84</td>
</tr>
<tr>
<td>District of Columbia</td>
<td>$27.56</td>
</tr>
<tr>
<td>California</td>
<td>$27.49</td>
</tr>
<tr>
<td>New York</td>
<td>$27.07</td>
</tr>
<tr>
<td>Alaska</td>
<td>$25.75</td>
</tr>
<tr>
<td>Washington</td>
<td>$25.39</td>
</tr>
<tr>
<td>Connecticut</td>
<td>$25.19</td>
</tr>
<tr>
<td>Maryland</td>
<td>$24.37</td>
</tr>
<tr>
<td>New Jersey</td>
<td>$24.22</td>
</tr>
<tr>
<td>Oregon</td>
<td>$23.91</td>
</tr>
</tbody>
</table>

Top States by Clean Energy Wage Percentage Above Statewide Median Wage

<table>
<thead>
<tr>
<th>State</th>
<th>Clean Energy Wage Percentage Above Statewide Median Wage</th>
</tr>
</thead>
<tbody>
<tr>
<td>California</td>
<td>29.2%</td>
</tr>
<tr>
<td>Texas</td>
<td>27.6%</td>
</tr>
<tr>
<td>Louisiana</td>
<td>24.9%</td>
</tr>
<tr>
<td>Massachusetts</td>
<td>23.2%</td>
</tr>
<tr>
<td>New York</td>
<td>20.9%</td>
</tr>
<tr>
<td>Oregon</td>
<td>20.9%</td>
</tr>
<tr>
<td>Georgia</td>
<td>19.9%</td>
</tr>
<tr>
<td>Nevada</td>
<td>16.9%</td>
</tr>
<tr>
<td>Tennessee</td>
<td>15.2%</td>
</tr>
<tr>
<td>Arizona</td>
<td>14.9%</td>
</tr>
</tbody>
</table>
Fossil Fuels Jobs and Clean Energy Jobs

FIGURE 3: JOB GROWTH RATES BY ENERGY SECTOR, 2017-2019

- +6.0%  U.S. Clean Energy Employment (2017-2019)
- +2.7%  U.S. Overall Employment (2017-2019)
- -5.3%  U.S. Natural Gas Fuels & Generation Employment (2017-2019)
- -7.1%  U.S. Coal Fuels & Generation Employment (2017-2019)
Clean Energy Challenges

- **Diversity** -- E2 will be coming out with Diversity report soon and that is something clean energy need to tackle.

- **Workforce Training**: And For years pre-COVID and even now with 300,000 jobs lost, when we survey clean energy businesses, they consistently say that finding skilled labor is a major challenge.

- **Incentive Stability**: Instability in incentives impacts financing, manufacturing, and demand generally.

- **Global Competitiveness** --
  Clean Energy Investment is flowing to Countries with high targets and incentives. Europe and China are eating our lunch. We want more domestic manufacturing and ultimately export of US clean energy technologies into what is estimated to be 27 trillion dollar global market (based on existing global commitment). Just a few critical federal policies we are seeing in play include.
Key Federal Policies for Clean Energy

- **Clean Energy Tax Credits** -- Longer incentives and for Purchasing and Manufacturing Incentives for Efficiency, Renewables, Grid and Storage, Vehicles etc

- **Workforce training** -- Including stipends for trainees

- **National Clean Energy Accelerator** (National Green Bank) -- to support state green banks and local financing solutions in every state and to address equity

- **A Clean Electricity Std** – for path to 100% clean electricity by 2035.

- **Funding for R&D and deployment programs at DOE.**
THANK YOU

Sandra Purohit
Director of Federal Advocacy
Sandra@e2.org

ADDITIONAL RESOURCES/DETAILS: www.E2.org/Reports

• Clean Jobs America 2021 (Jobs Numbers) – (regional reports and federal district data coming)

• Clean Jobs Better Jobs (Wage Data)

• Build Back Better Faster (Sample Jobs Projection with $100B Federal investment)

• Healthy Soils and the Climate Connection: A Path to Economic Recovery on America’s (Rural Opportunities)

• COMING SOON: Diversity in Clean Energy Report (Aug 2021)