

NETL RWFI Energy 101- Energy Jobs Report



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Agenda

- 1. NETL RWFI Introduction– Anthony Armaly, NETL Regional Workforce Initiative, Federal Coordinator**
- 2. 2022 US Energy and Employment Report Regional and National Briefing –David Keyser, Senior Advisor in the Department of Energy Office of Energy Jobs**
- 3. Regional and National Impacts Workforce Discussion**

Energy jobs are on the rise. In 2021, the Energy Sector employed more than 7.8 million Americans. Learn what types and where they are located at our 2022 US Energy and Employment Report (USEER) webinar briefing.

NETL Regional Workforce Initiative (NETL RWFI)



A Focus on Appalachia and the
future of Energy and Advanced
Manufacturing Regional
Workforce Readiness and
Economic Development

NETL RWFI Mission Statement



NETL RWFI is a platform for engagement and collaboration with key stakeholders who are critical for the deployment of U.S. DOE and NETL Energy and Advanced Manufacturing technological research.

Supporting Regional Economic and Workforce Development opportunities.

Measuring Our Impact - People First



Key Metrics are Levels of Engagement and Outreach

800+

individual
stakeholders

400+

institutions and
organizations
represented

1300+

registrants to the
NETL RWFI Webinar
Series

300+

subscribed to the
NETL RWFI e-Note
Monthly Newsletter

**Catalyzed over 1M in energy/advanced manufacturing
workforce & economic development funding**



Conclusions

Let's Connect, Communicate and Collaborate!

NETL RWFI relies on our being consistent, communicative, and collaborative with stakeholders

Substantive engagement and results – Webinars, E-Note, R-AME, Workforce Readiness Pilot, NETL/ARC AWWI



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Energy Jobs in the United States

David Keyser

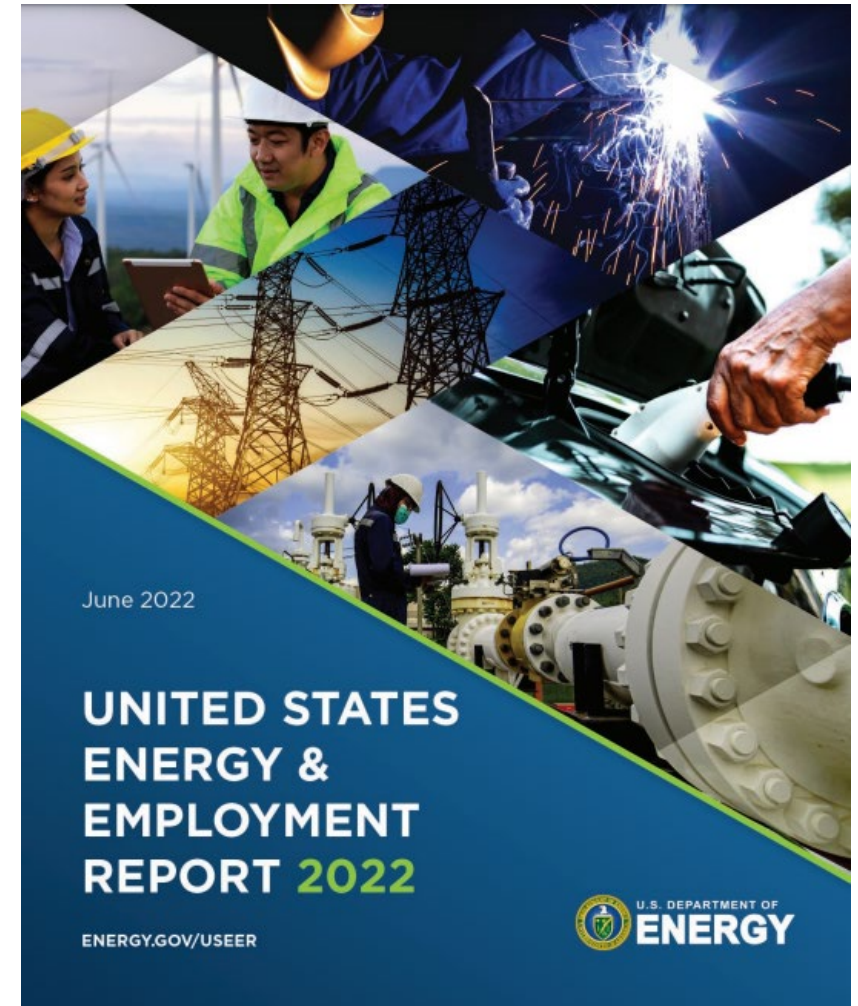
Senior Advisor, Office of Energy Jobs, Office of Policy

United States Department of Energy

October 25, 2022

The U.S. Energy and Employment Report (USEER)

- USEER captures employment, workforce, industry, occupation, unionization, demographic & hiring information by technology group.
- Results based on combination of survey done of 33K employers by DOE subcontractor & data from the Bureau of Labor Statistics.
- DOE published report in 2016 & 2017; The National Association of State Energy Officials & Energy Futures Initiative published it in 2018, 2019 & 2020. Report returned to the Department of Energy in 2021.
- State-level data available for all 50 states (and the District of Columbia)



Key Findings

In 2021, the energy sector experienced positive job growth across all sectors, except fuels, and outperformed job growth in the economy overall.

Jobs in many clean energy industries grew while overall fossil fuel job numbers declined.

Additional investments are needed to turbocharge America's clean energy economy and build a strong, diverse, and well-supported clean energy workforce.

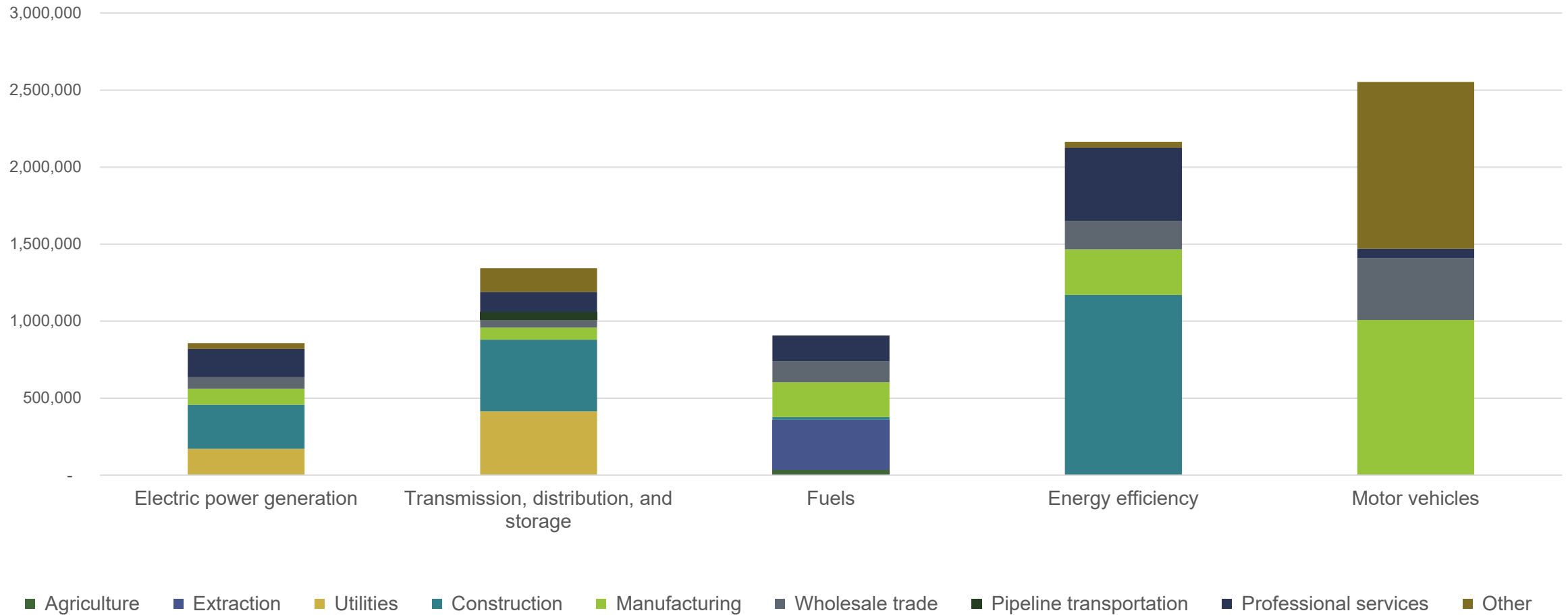
National Data

In 2021 there were over 7.8 million energy jobs in the United States, up from 7.5 million in 2020, adding 300,000 jobs.

Energy jobs grew faster (4%) in 2021 than the U.S. economy overall (2.8%).

Jobs are distributed by industry

2021 jobs by industry



Topline National Findings

- All technology groups, except fuels, grew in 2021.
- 2021 growth was not enough to make up for jobs lost in 2020.
- Union density in the energy sector is higher than the national average for private sector employers.
- Female and Black or African American workers represent lower-than-average percentages while there are more workers of two or more races.
- The concentration of veterans and workers under the age of 55 is higher in energy than the national workforce.

Topline Findings

- Of the jobs DOE counts, vehicles (including repairs and manufacturing) is the largest sector.
- All transmission, distribution, and storage & energy efficiency sectors grew.
- Electric power generation jobs increased except for nuclear and coal.
- Coal and petroleum drove declines in fuel jobs.
- The majority of employers within all industries across all technology groups reported difficulty hiring workers.

Electric vehicle jobs increased by 26.2%, adding 21,961 new jobs.

Hybrid electric vehicle jobs increased 19.7%, adding 23,577 new jobs.

Solar energy jobs increased by 5.4%, adding 17,212 new jobs.

Wind energy jobs increased by 2.9%, adding 3,347 new jobs.

Energy efficiency jobs increased by 2.7%, adding 57,741 new jobs.

Transmission, distribution, and storage jobs increased by 1.9%, adding 22,779 new jobs.

Many technologies surpassed 2019 levels

Wind: 5,390
(4.7%)

Batteries:
3,794 (5.8%)

Woody
biomass: 472
(1.4%)

Hydrogen fuel
cell vehicles:
3,429 (32%)

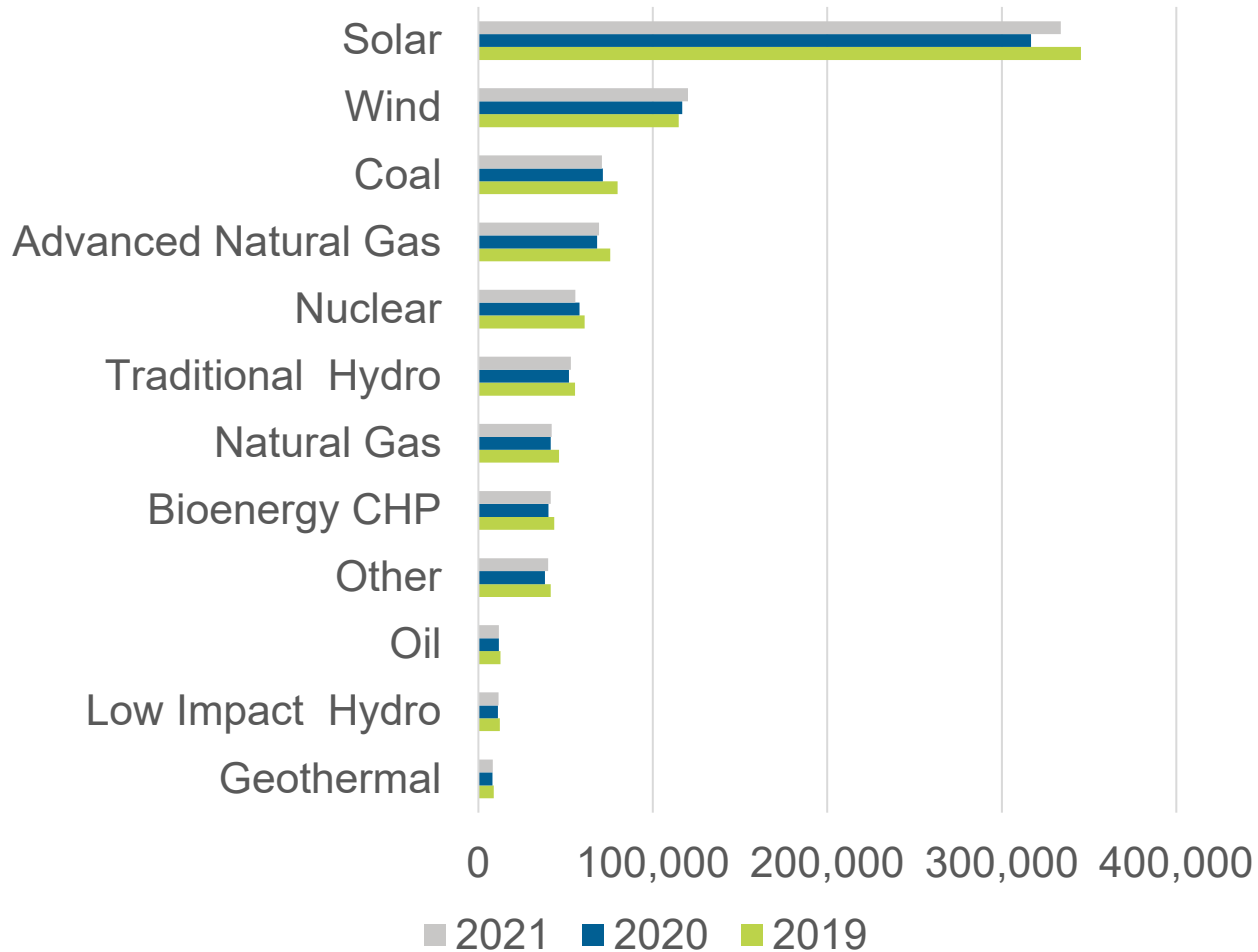
Natural gas
vehicles: 569
(4.4%)

Plug in EVs:
11,013 (21%)

Full EVs:
28,027 (36%)

Hybrids:
29,869 (26%)

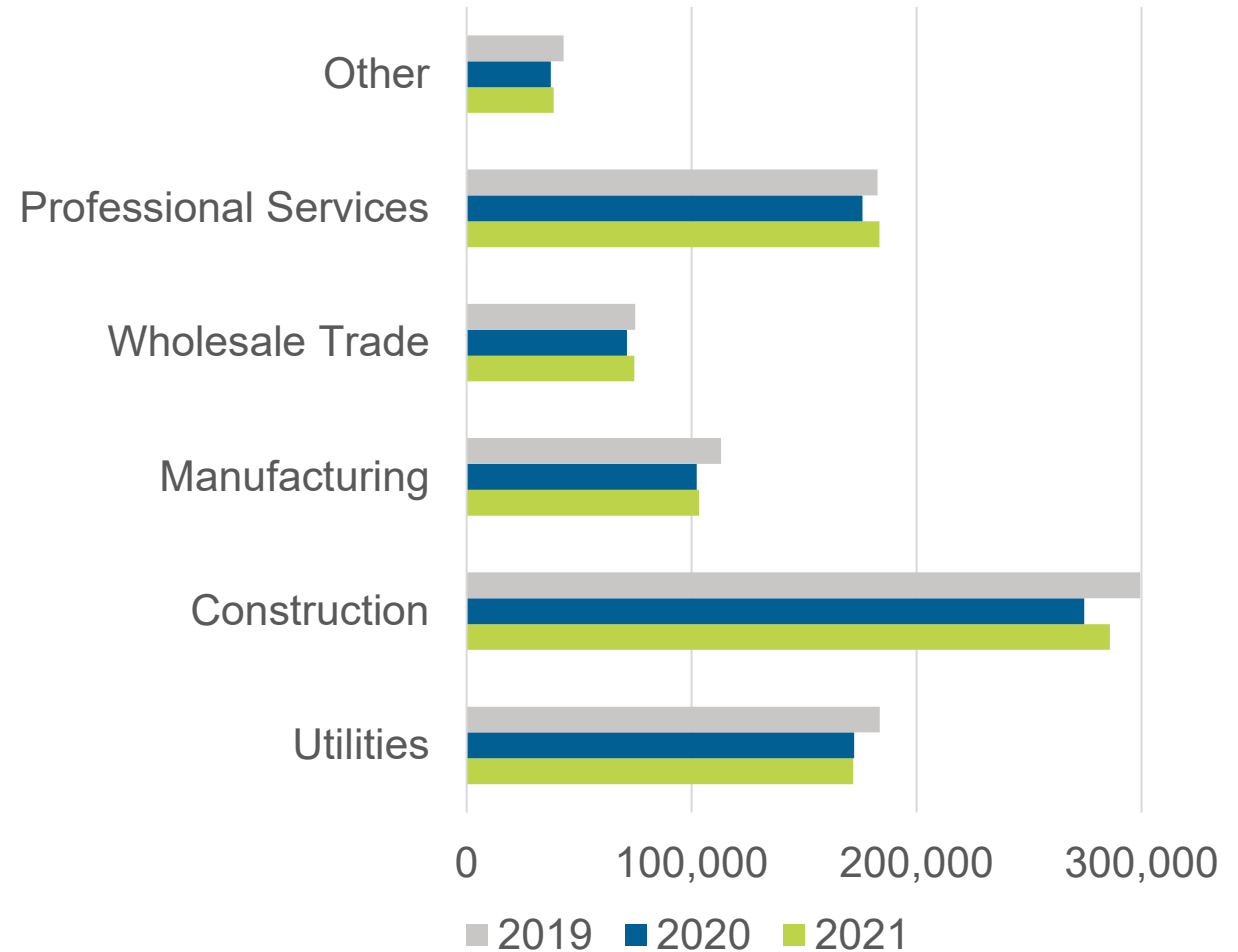
Electric Power Generation Technologies



- Solar was the largest sector (333,900), added the most jobs from 2020 to 2021 (17,200), and was the fastest growing over that same time period (5.4%)
- Nuclear (-2,400) and coal (-600) both declined from 2020 to 2021
- Wind was the only electricity technology with more jobs in 2021 than 2019 (5,400 or 4.7%)

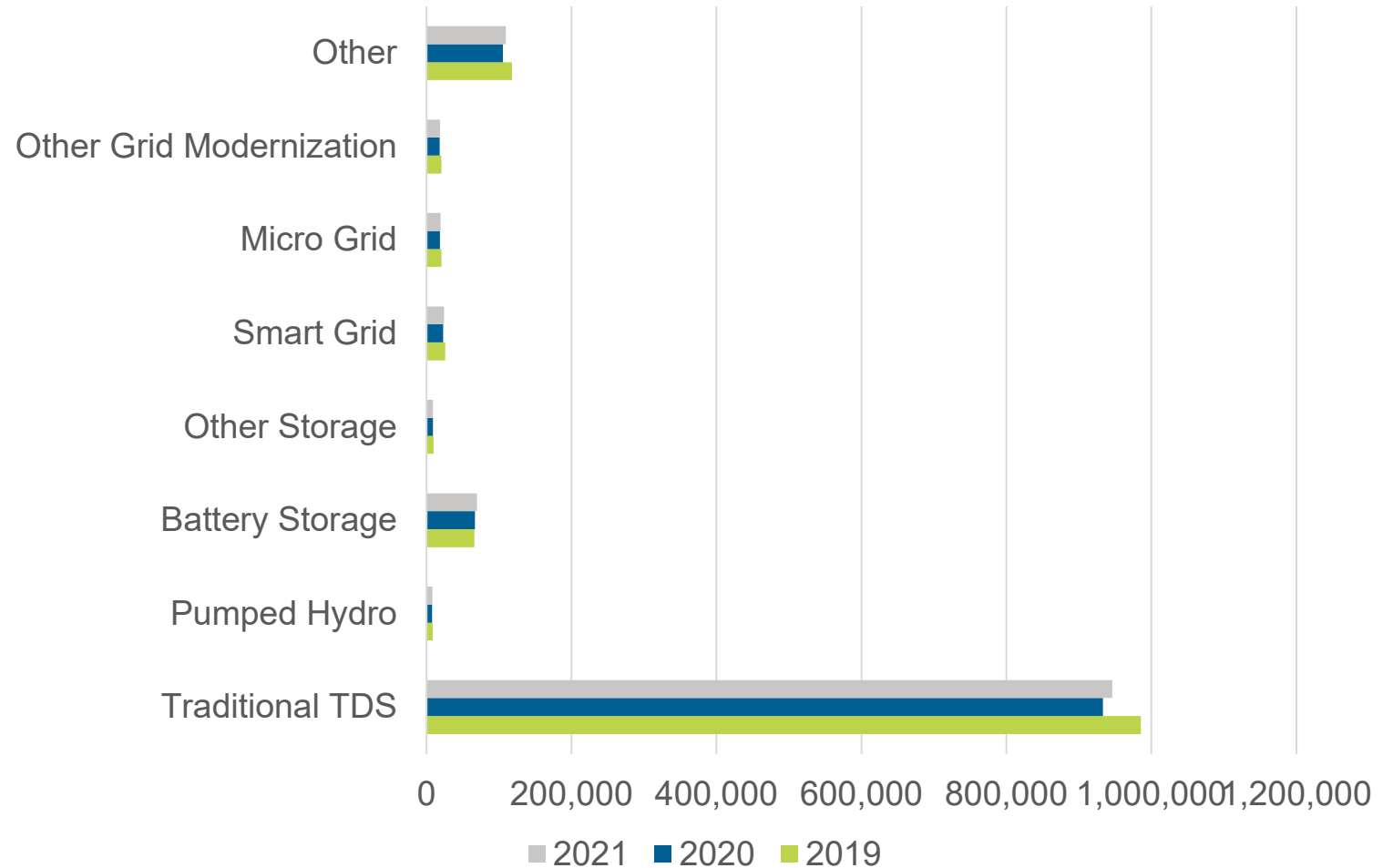
Electric Power Generation Industries

- With 286,000 workers, construction is the largest industry
- All industries grew from 2020 to 2021 except for utilities, which decreased 0.3%
- All industries were still below 2019 levels except for professional services, which grew 0.4% from 2019 to 2021 and 4% from 2020 to 2021

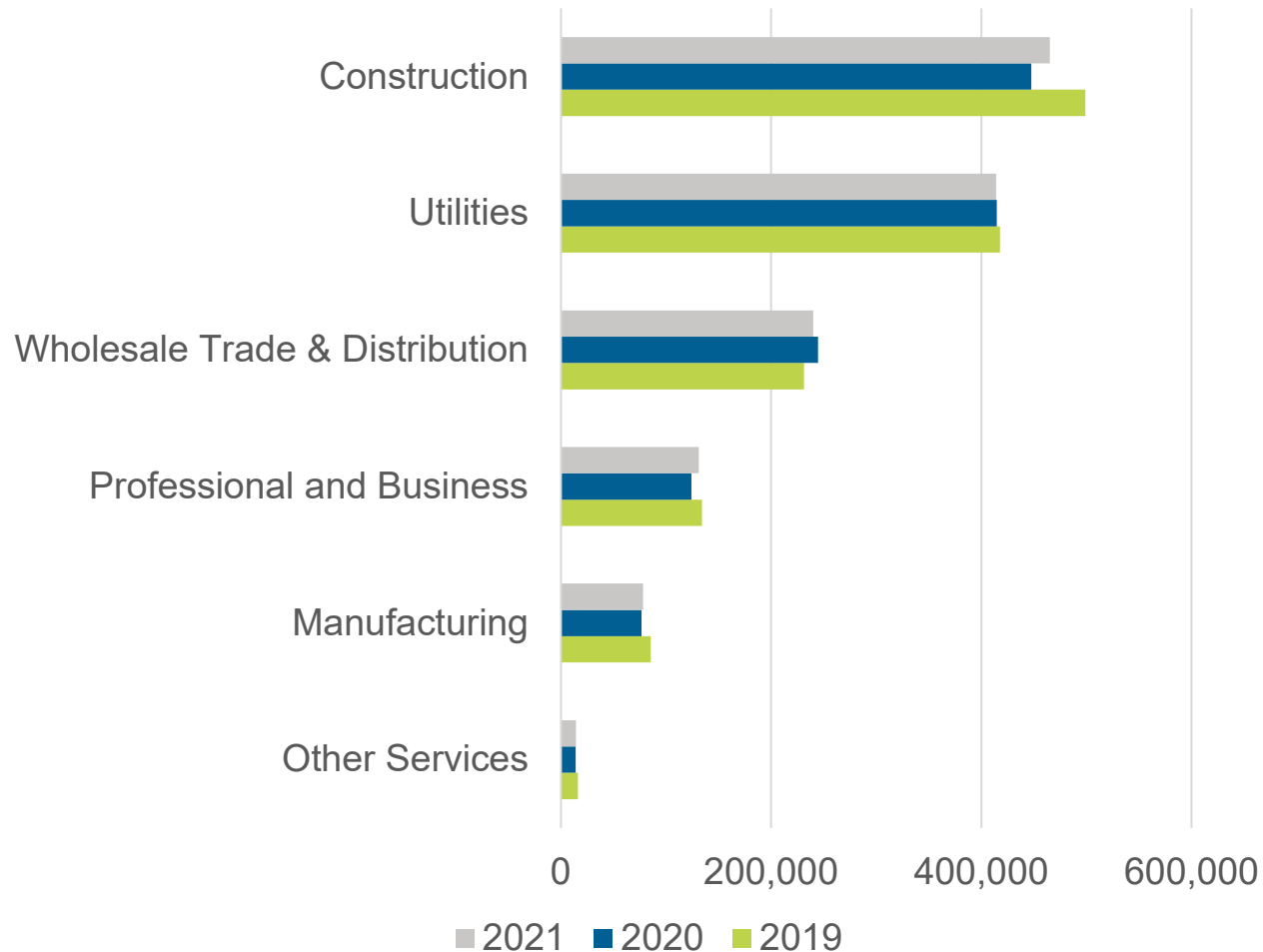


Transmission, Distribution, and Storage Technologies

- Traditional transmission, distribution, and storage (TDS) is the largest technology with 946,000 workers; this grew 13,100 from 2020 to 2021 (1.4%) yet is still lower than its 2019 level
- Batteries (69,700) is the only technology to exceed its 2019 level
- No storage technology decreased from 2020 to 2021



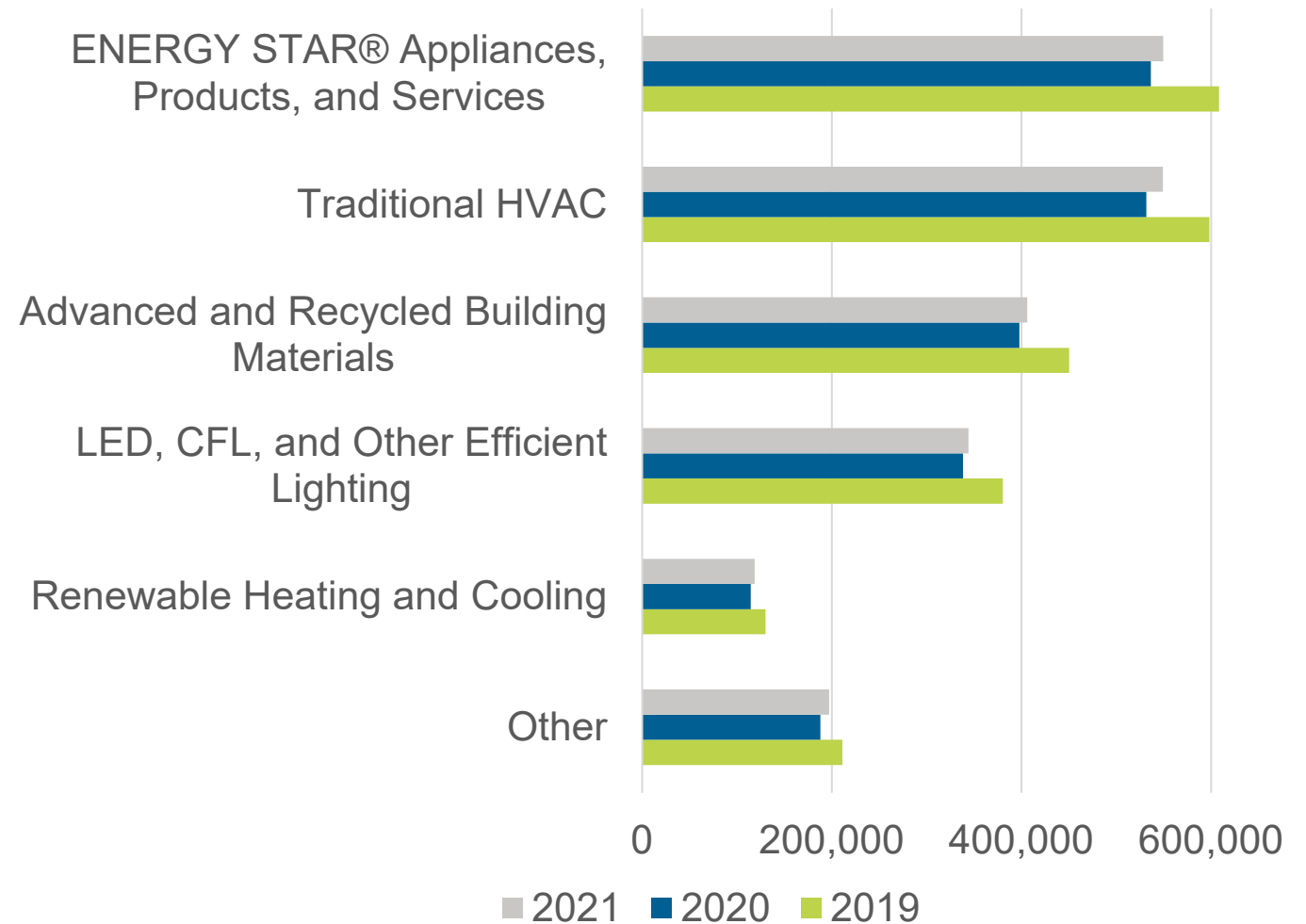
Transmission, Distribution, and Storage Industries



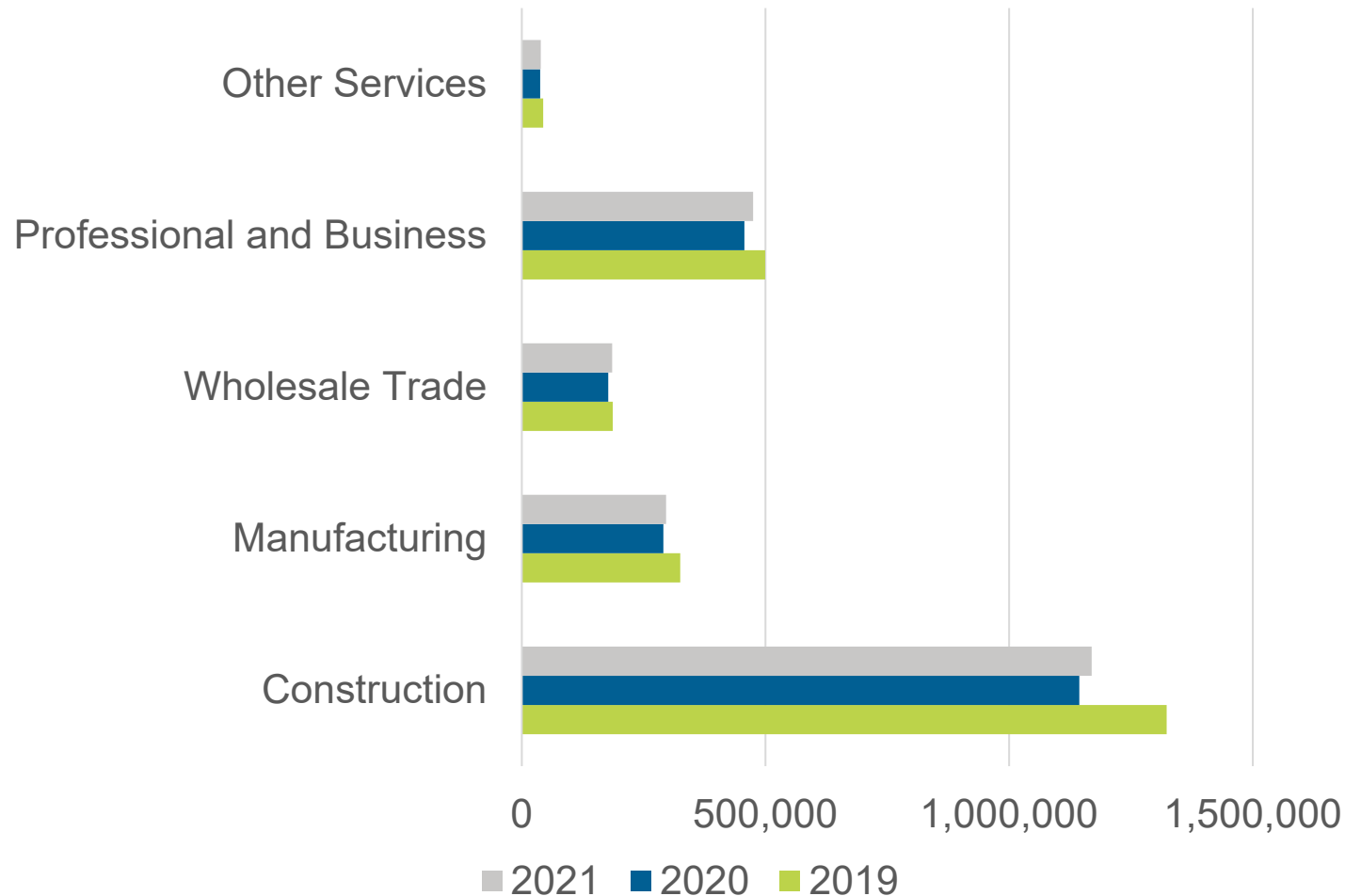
- Construction is the largest industry with 465,200 workers but utilities is close behind with 414,100 jobs
- All industries except for wholesale trade (-4,300) and utilities (-768) grew
- Wholesale trade, with 240,300 jobs in 2021, still grew from its 231,200 level in 2019; this is the only industry to exceed its 2019 level

Energy Efficiency Technology Groups

- All energy efficiency (EE) technologies decreased from 2019 to 2020 and 2019 to 2021 but all increased from 2020 to 2021
- ENERGY STAR® continued to be the largest sector, but traditional HVAC with an efficiency component is close – 549,500 compared to 549,400; in 2019 this was 608,400 in ENERGY STAR® and 598,400 in traditional HVAC



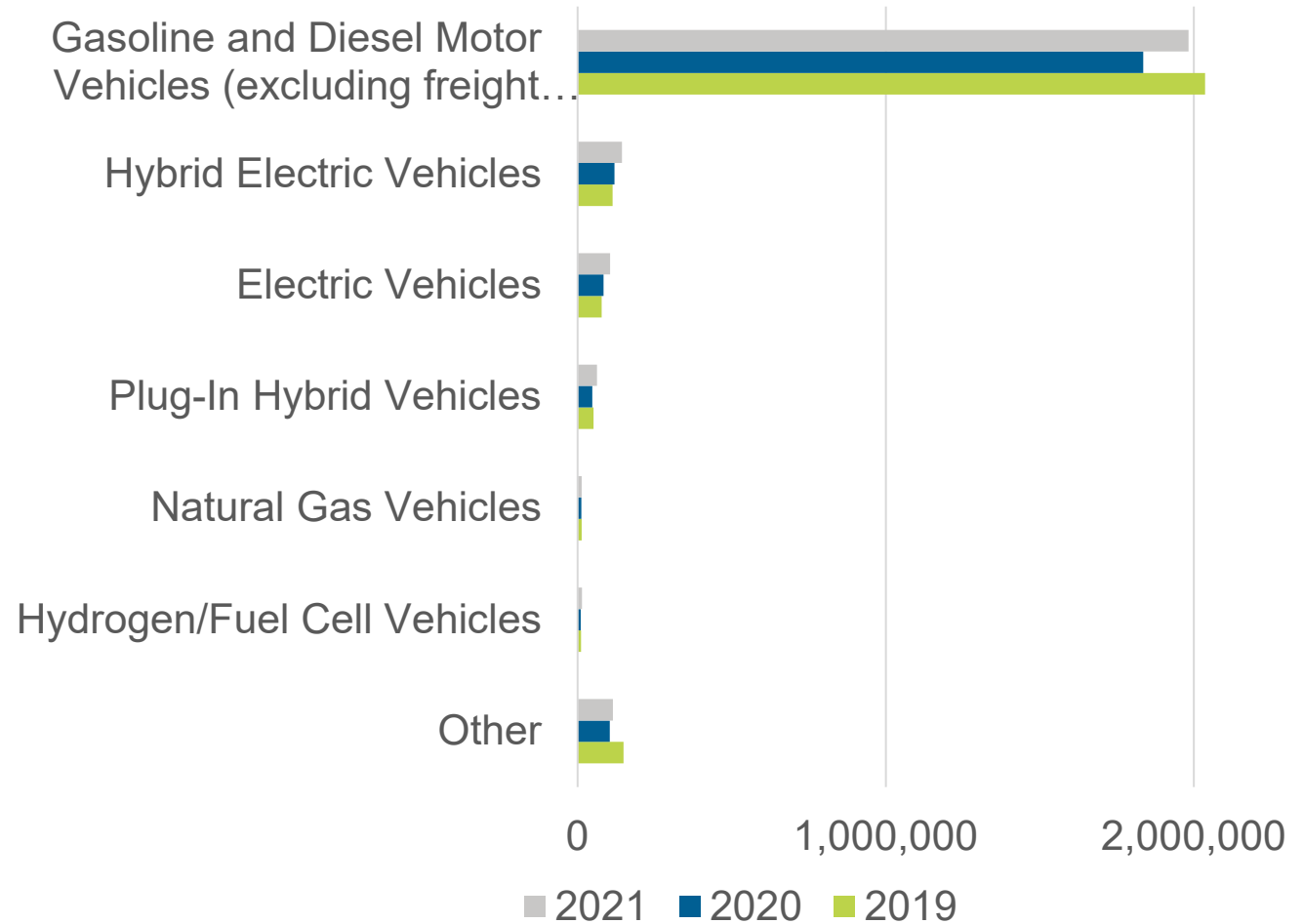
Energy Efficiency Industries



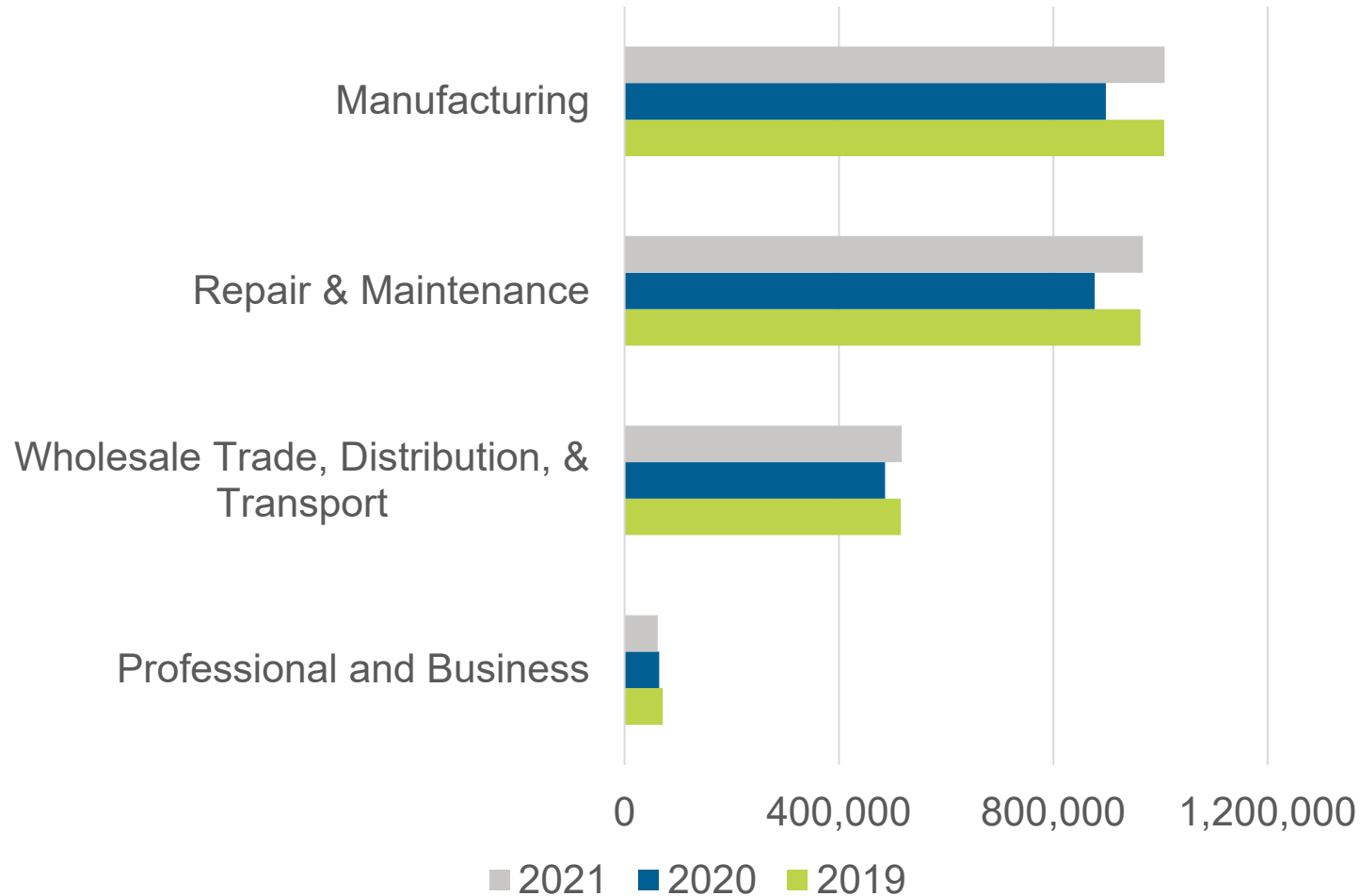
- Construction is the largest industry with 1.2 million jobs in 2021, adding 25,100 from 2020 (2.2%); 2019 level was 1.3 million (-12% from 2019)
- All industries increased from 2020 to 2021 but all decreased from 2019 to 2021
- Wholesale trade grew the fastest (4.4%) from 2020 to 2021

Motor Vehicles by Technology

- Motor vehicles grew faster (11%) and added more jobs (223,500) than any other USEER technology
- Five of the eight technologies that had more jobs in 2021 than 2019 are in motor vehicles
- Five of the seven motor vehicle technology categories had double digit growth rates
- Gasoline and diesel motor vehicles added the most jobs (147,000) with the lowest growth rate in motor vehicles (8%), yet this is still faster than jobs throughout the U.S. economy as a whole and energy jobs



Motor Vehicles by Industry

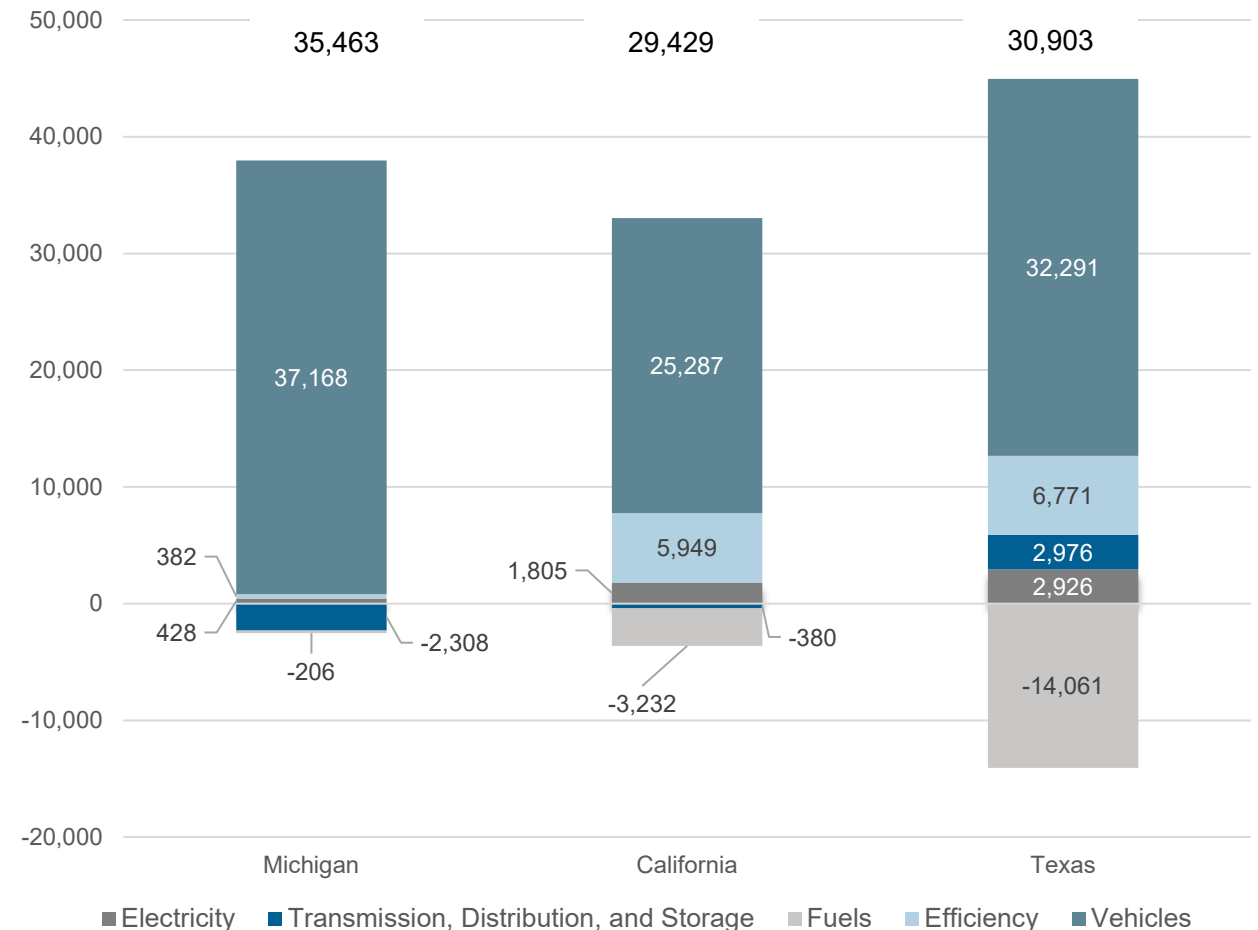


- Only professional and business services decreased from 2020 to 2021 (-3,100 / -4.9%)
- Manufacturing is the largest industry with 1.0 million jobs, although repair and maintenance is within rounding
- Wholesale trade, repair and maintenance, and manufacturing increased from 2019 to 2021 while other industries decreased

State Level Data

States with motor vehicle manufacturing added the most energy jobs

- States with motor vehicle manufacturing added most jobs – Michigan led U.S. in creation followed by California & Texas.
- Large growth in motor vehicles offset declines in transmission, distribution, storage and fuels in Michigan.
- Texas added the most jobs but also lost more fuel jobs than any other state: -14,061 – next highest losses were in Louisiana with -3,731 – significant difference.



Fuels and electricity grew the fastest in the Midwest

Fuels Growth from 2020: North Dakota (21%), Montana (8%), and New Mexico (5%)

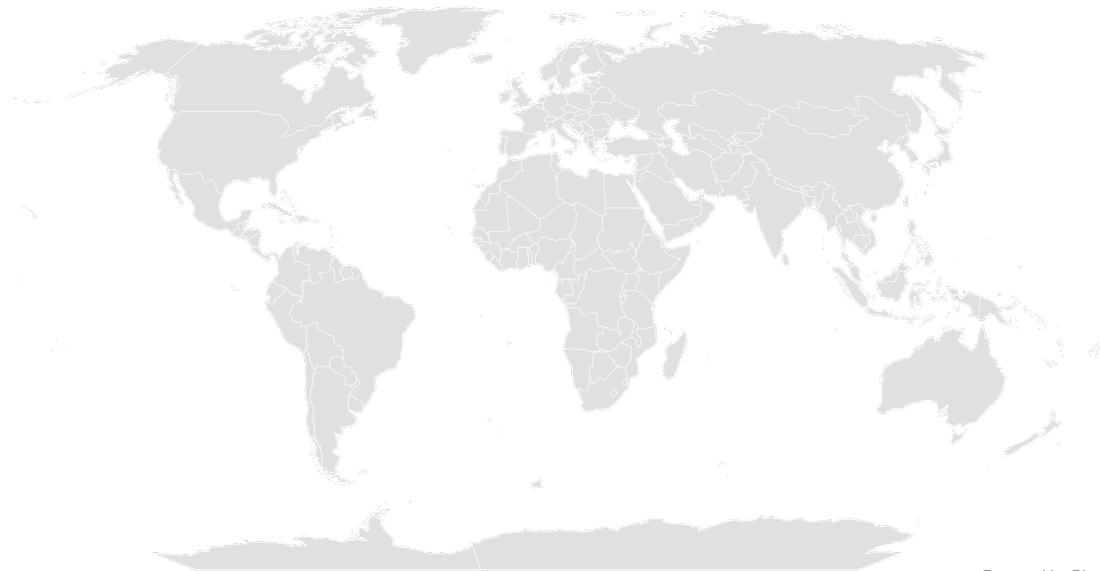
Electricity Growth from 2020: Nebraska (32%), Minnesota (18%), Iowa (16%)



Appalachia had highest growth in transmission, distribution, and storage while the south had strong motor vehicles growth

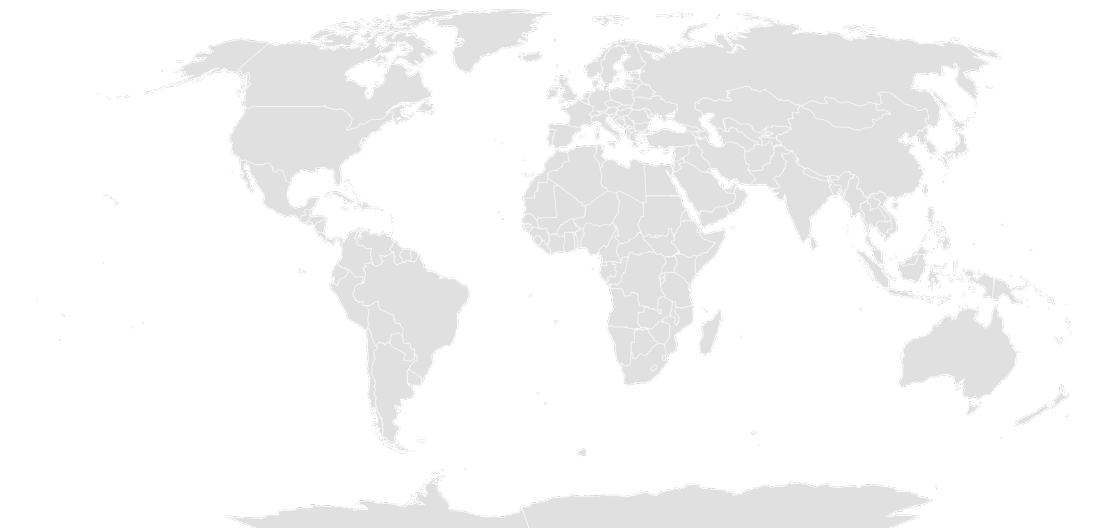
- Vehicles growth dispersed, led by Texas (20%), Tennessee (19%), and Indiana (18%)

TDS Growth from 2020: West Virginia (29%), Pennsylvania (14%), and Oklahoma (11%)



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Motor Vehicles
-25% 20%

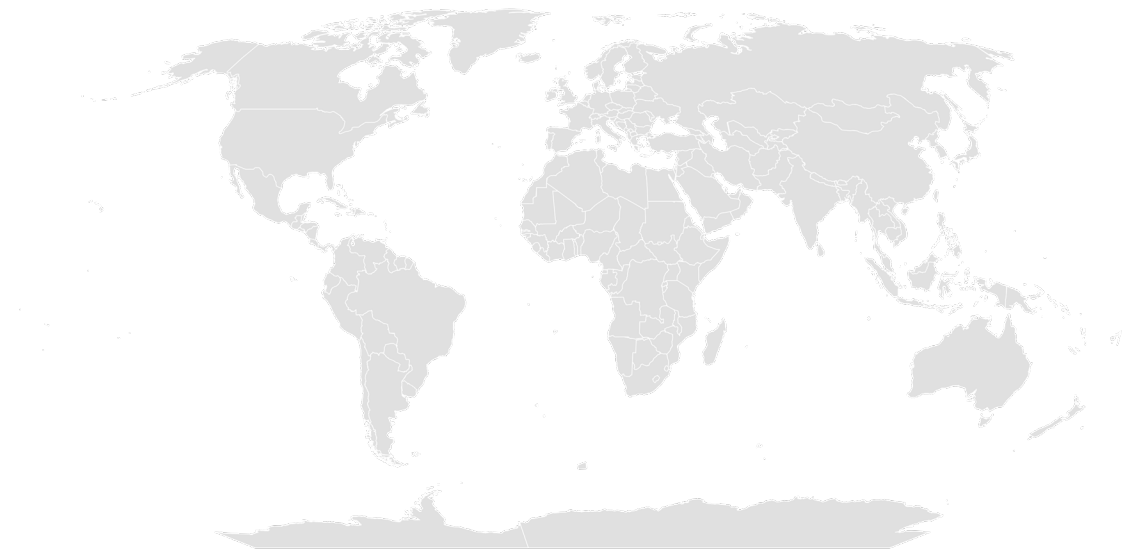


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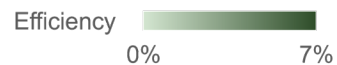
Transmission, Distribution, and Storage
-8% 29%

Highest efficiency growth was in the southwest

Efficiency Growth from 2020: Nevada (+7%), New Mexico (+7%), and Oklahoma (+5%)



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Oklahoma and New Mexico were the only two states to rank in the top three for growth in more than one technology groups



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Thank you

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Conclusions

Let's Connect, Communicate and Collaborate!

Q&A Session and
Workforce Discussion

Presentation will be
posted at:

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