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Now Available in the Oil Patch: Wind and Solar College Degrees

Schools offer renewable-energy programs as demand from companies grows

By Erin Ailworth
May 2, 2018 9:00 a.m. ET

Jazirae Duncan always wanted to go to Texas Tech University and major in something related to science and technology.

But when she graduates this month, it won't be with a degree in petroleum engineering or any of the majors traditionally offered by this springboard school to the energy industry—it will be with a bachelor's in wind power.

"It's going to be the future," said Ms. Duncan, 21 years old. "Companies are really starting to promote renewables."

Across the U.S., universities that have long offered degrees related to the fossil-fuels industry are starting to offer degrees and concentrations in wind and solar technologies. Companies such as Tesla Inc. TSLA **-7.88%** ▼ are seeking recruits with specialized skills in renewable energy, even as some oil-and-natural-gas companies pull back on hiring graduates in fields such as geology as they automate more tasks.

Majoring in green energy poses risks: The jobs usually don't pay as well as starting positions with oil-and-gas companies, and it remains a small, albeit growing, industry. Curricula vary, but the programs tend to be interdisciplinary, focusing on giving students technical know-how—such as how to design a wind turbine—in addition to learning about fast-changing government policies.

Texas Tech began offering a bachelor of science in wind energy in 2011, a few years after being awarded a grant by the Texas Workforce Commission. Today, Texas leads the nation in wind-power capacity, with more than 20 gigawatts installed. Oklahoma, in the No. 2 spot, has 7.5 gigawatts, while No. 3 Iowa has 7.3 gigawatts.

"Industry people are telling us, 'We need people now,' " said Andrew Swift, associate director of education for the National Wind Institute at Texas Tech.

The University of Texas at Austin offers a graduate program in energy and earth resources. More often, students are interested in renewable-energy jobs over higher-paying positions in oil and gas, said Michael Webber, deputy director of UT-Austin's Energy Institute.

"They get a job offer from an oil-and-gas major for $85,000, they will say no and take a $50,000 job offer from a progressive utility with a clean-energy program," said Mr. Webber.

An anemometer (wind-speed meter) at the National Wind Institute at Texas Tech University. PHOTO: DYLAN COLE FOR THE WALL STREET JOURNAL

While more UT-Austin students are interested in renewable energy, Richard Chuchla, director of the energy and earth resources program, said he feels students still benefit from a more well-rounded "all-of-the-above" energy education that includes oil and gas. Some graduates have gone on to jobs in the solar industry, he said, while others have become energy consultants, government researchers or corporate sustainability officers.

"What we should be training students for is to be energy practitioners," he said.

The University of California, Davis last fall launched its Energy Graduate Group, in which students work toward a master's or doctoral degree with energy specialties, after repeatedly hearing from potential employers looking for people who know how to design and work with renewable-energy systems.

"They're always coming to us asking us, 'Give us a student, a good student,' " said Benjamin Finkelor, executive director of the school's Energy and Efficiency Institute, which hosts the graduate group.

Employers are already taking notice, including Tesla, which has sent recruiters to such schools in search of talent, and hired from them. It declined to provide specifics. "As the demand increases, it has been cool to see schools rally and the students coming up," said Cindy Nicola, Tesla's global head of recruiting.

The programs remain relatively small—UC Davis's inaugural class is just 16 students, for instance—but educators say more will be needed in years to come as renewables as a source of electricity increasingly challenge fossil fuels.

While natural gas is currently the top fuel for making power in the U.S., accounting for 32% of electric generation last year, electricity from wind turbines and solar panels is on the rise. The two technologies combined accounted for 8.3% of power generation in the U.S. in 2017, up from 5.1% in 2014, federal data show.

Christian Böhm, managing director of UKA North America LLC, the U.S. arm of a German wind developer, said his company has its eye on several students at Texas Tech and has already hired one: graduating senior Chance Zajicek.

Texas Tech student Jazirae Duncan at the school's wind tunnel. She plans to graduate this month with a bachelor's degree in wind power. PHOTO: DYLAN COLE FOR THE WALL STREET JOURNAL

Mr. Zajicek, 23, grew up just south of Fort Worth, Texas, in a community where it was common to know people working for Exxon Mobil Corp. and Halliburton Co. When he decided to pursue an energy career, though, he saw more opportunity in renewables. "It's still a young industry, so that means there's a lot of room to grow professionally and as a person," he said.

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