

Students Involvements in Learning of Pollution Prevention and Energy Efficiency Assessment of Businesses in New Mexico

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ABSTRACT

In the state of New Mexico, few business sectors have been experiencing such significant growth as craft brewing. No matter where you find yourself in the state, you will not be far from at least one local brewery. Other businesses throughout the state often collaborate with these breweries as well, taking in spent grain and such, thus improving their economic impact while reducing their environmental impact. This growth, however, comes with its own set of challenges. It can be seen in every sector; if a business expands beyond its means, it has a high chance to fail if certain shortcomings are not corrected early on. Fortunately, many businesses are catching on to this issue and often seek outside assistance to find these flaws before they arise. There are many organizations like Engineering New Mexico Resource Network (ENMRN) that aid in finding and correcting those shortcomings through mathematical and scientific analysis, providing encouragement and assistance to such businesses that reach out to them. One such instance was a brewery that reached out to ENMRN in 2019 that, in only a few years it had been in operation, was experiencing such growth that they were planning on expanding for the third time. Now a business does not often grow this quickly without finding effective ways to conserve resources, but outside opinions and analysis can always be of benefit. By analyzing the practices already employed by this brewery, combined with recommendations from NMSU's faculty, staff, and students after conducting an on-site visit, the brewery's savings and improvements were staggering. Through estimates by ENMRN's team and metrics provided by the brewery, it is believed in the span of a year this single brewery was able to reduce their carbon footprint by 67 tons, conserve 713,341 gallons of water, conserve 54,080 kilowatt-hours of power, and reduce their solid waste generation by 1,085 tons, all while saving \$13,085 in the process. All of these efforts were achieved by student involvement under the guidance of ENMRN's experts so that they could gain experience in energy, water, and waste assessments and making them prepared to deal with these sustainability problems when entering the workforce.