

Seeking carbon neutrality in the education industry

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ESG. Net Zero. Carbon Neutral. Over the course of the year, all of these terms were (and will continue to be) widely referenced in mainstream media publications, corporate governance and shareholder materials, and regulatory filings and issuances. Although each term refers to something different from the others, at their core these phrases reflect a growing social consciousness in the U.S. and abroad concerning carbon dioxide (CO₂) presence in the atmosphere and the impact of individual and corporate actions on greenhouse gas (GHG) emissions.

For example, net-zero refers to the balance between the amount of GHG produced and the amount removed from the atmosphere. In today's world, these terms and phrases are employed for more than just lip service. Corporate documents or individual statements that make reference to environmental, social, and governance (ESG) investing criteria, achieving net-zero, or pursuing neutrality initiatives often do so with specific, targeted actions in mind designed to achieve certain goals. Of course, that raises a threshold question of how an entity or individual can achieve reduced GHG goals or demonstrate net-zero operations.

Decarbonization in the education industry

The concept of net-zero and the pursuit of carbon neutrality is evident in nearly all industries and sectors throughout the U.S. The education industry is no exception. In 2018, American University became the first higher education institution to achieve a carbon neutral certification in the U.S.

Looking forward, entities in the education industry are poised to continue pursuing carbon neutrality in the coming years. Currently, more than 330 universities and colleges in the U.S., representing nearly 3.7 million students, have publicly pledged to achieve carbon neutrality by 2050. In many of those instances, the pledgor has committed to a more aggressive timeframe of 2025 or 2030.

To achieve carbon neutrality, participants in the education industry are uniquely suited to take certain steps. In particular, the pursuit of several of the following initiatives can materially position an institution of secondary or higher education for carbon neutrality.

A. Diversifying energy generation assets

Educational institutions across the U.S. are embracing renewable energy as we move towards a decarbonized future. Colleges and universities throughout the country are leading by example when it comes to adopting renewable energy sources, with more than

40 educational institutions in the U.S. now sourcing 100 percent of their energy from renewable generating assets.

Installation of rooftop solar assets at education institution enables them to reduce reliance on fossil-fired generation offtake from an interconnected utility and, in turn, prevents monetary savings potential by reducing exposure to peak demand utility pricing.

Importantly, ownership and self-supply of energy from renewable assets requires the education entity to carefully confront various issues that will arise prior to installation. Considerations such as whether the educational institution will own or lease solar assets, whether the assets will generate excess energy beyond the needs of the institution, how the interconnected utility will compensate the institution for any such excess, and how to navigate regulatory implications of such issues warrant analysis at the outset.

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Relatedly, some institutions may identify value in installation and operation of modular nuclear reactors as a source for clean energy. A recent report issued by Purdue University affirmed this potential — noting that small modular reactors could serve as a promising and carbon-free energy option. Small modular reactors possess the advantage of continuous operation and the ability to adjust their energy output to meet varying power demands. Purdue University and Duke Energy Feasibility Study Interim Report, May 2023.

Whether exploring solar assets or small modular reactors, sustainability officers at education institutions across the U.S. are well-served by considering a diversified energy generation portfolio as a tool in the decarbonization toolkit.

B. Installation of battery storage assets

Whether on a standalone basis or paired with adjacent solar assets, battery storage assets provide owners and operators with another tool to achieve decarbonization through storing clean sourced energy for use at a later time. Energy storage can transform intermittent clean energy — primarily derived from wind and solar

— into a reliable source of 24/7 generation. As a result, energy storage has seen tremendous policy support from the public sector, including through federal investment tax credits in the United States, as well as a large influx of capital from private investors seeking ESG focused investments.

In the United States, installed storage capacity more than tripled in 2021, and that growth is expected to continue, especially following the enactment of significant new federal income tax incentives for energy storage deployment (and manufacture) under the Inflation Reduction Act of 2022 (IRA). As a result, the annual amount of storage installations in the United States is expected to increase from approximately 4.6 GW (gigawatts) in 2021 to more than 27 GW by 2031.

The acceleration of energy storage deployment has led to increasing demand for battery materials, variability in procurement contracts and financing models to reflect the developing market, and evolving global regulations. Uncertainty relating to these and other general market conditions has resulted in headwinds for the industry, including a slowdown in the pace of installations relative to prior projections.

Nevertheless, the potential for energy storage assets to facilitate an education institution's quest for carbon neutrality is not conceptual. Systems already exist across the U.S. whether it be University of California, Riverside or University of Massachusetts Dartmouth. In those specific cases as well as others nationwide, the universities recognized that the battery assets will enable the institutions to reduce demand on the grid at peak times while providing a clean power source of stored energy that was sourced from renewable generation.

C. Transportation electrification

Efforts to electrify the U.S. transportation sector are strong — and growing. In 2022, more than 800,000 fully electric vehicles (EVs)

were sold in the United States, making up nearly 6% of all vehicles sold.

The 2022 EV share of the U.S. market approximately doubled from 3.2% of sales in 2021 and is a marked increase above the approximately 327,000 EVs sold in 2019. This growth over prior years affirms that policy efforts to encourage EV deployment are taking root and that consumer appetite for electrified transportation is growing.

In the education industry, transportation electrification presents some unique opportunities. The installation of charging capabilities throughout a campus provides students, faculty, and staff with the opportunity to charge vehicles while on campus, and the education entity could capture value through those offerings depending on the price the education entity charges the EV customer for charging.

For example, if an educational entity were collecting from the EV customer the same rate that the interconnected utility would assess, but the educational entity is using self-generated or stored power to provide a charge, a monetary value opportunity presents itself to the educational entity, which could use those funds for additional scholarship opportunities, research funding, or offsetting skyrocketing tuition costs. In addition, converting educational bussing fleets to electric provides the educational entity with an opportunity to reduce fossil-fuel reliance and, in the coming years, potentially take advantage of vehicle-to-grid and bidirectional charging/discharging opportunities.

Conclusion

The three initiatives cited above are only a limited number of the possibilities available to educational entities looking to achieve decarbonization goals. In an era that is so rapidly evolving, the possibilities will only continue to grow, which provides such institutions with an opportunity to lead the way in U.S. decarbonization pursuits.

About the authors



Levi McAllister (L), a partner at **Morgan Lewis**, is head of its electric vehicles (EV) working group, energy decarbonization working group, and energy commodity trading and compliance working group, and helps energy companies navigate the regulatory and investment environment for both conventional and emerging energy technologies. He guides clients seeking to reduce their carbon footprints and take advantage of new and evolving energy storage and infrastructure assets, while also advising on energy commodity trading and the deployment of EVs and EV infrastructure in U.S. markets. He is resident in the Washington, D.C., office and can be reached at levi.mcallister@morganlewis.com. **Jane Accomando (R)**, a partner at the firm, is a co-leader of its global energy industry team, and advises nuclear companies in connection with government and internal investigations, regulatory compliance, nuclear whistleblower proceedings, licensing, and spent fuel matters. She has degrees in nuclear engineering and represents nuclear industry clients. She is resident in the Washington, D.C., office and can be reached at jane.accomando@morganlewis.com.

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