

DEUSA Fleet Success Stories:

Bowdoin College



Location: Brunswick, Maine

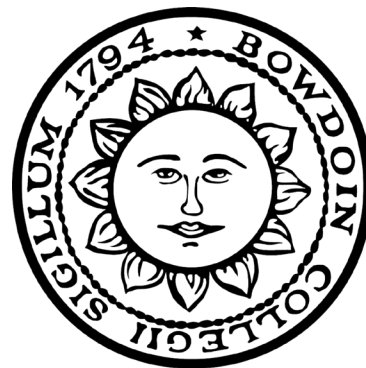
Fleet type: Light-duty electric vehicles (College)



Narrative: Bowdoin College sets the bar as one of the top sustainable institutions in Maine and is an exemplary model for the rest of the state. A liberal arts institution located in Brunswick, Maine, with an enrollment of approximately 1,850 students, Bowdoin College developed and implemented [Sustainable Bowdoin 2042](#) — the college's comprehensive Climate Action Plan



in 2022. The plan aims to take the college beyond their current achievement of carbon neutrality to becoming a fossil-fuel-free campus by 2042.



Bowdoin has focused on transitioning its entire campus operations to 100% carbon-free clean energy, encompassing heating and cooling systems, electricity, and transportation.

Assistant Director, Adam Talbot, with Bowdoin's Ford F-150 Lightning
(Source: [Bowdoin College](#))

The *Sustainable Bowdoin 2042* plan set a goal of achieving a 100% hybrid and electric fleet by 2027, with at least 35% battery electric vehicles. While the timeline has shifted, the college is proud of the significant progress made over the past four years and remains firmly committed to reaching this target. Currently, Bowdoin's campus fleet consists of 73 vehicles that support more than 20 different departments and offices across campus.

Bowdoin's initial EV acquisitions included the addition of a Toyota bZ4X battery-electric vehicle to the College's rental fleet, an electric Ford van for campus fleet use, and 12 EV chargers located in the Coffin Street parking lot. Bowdoin funded these purchases in part by [selling valuable Class I renewable energy credits](#) (RECs) generated by its solar installations (which are of high value in the regional compliance market) and replacing them with lower-cost voluntary RECs from regions with dirtier electric grids than Maine, a process known as REC arbitrage. A REC represents the environmental benefits of generating renewable electricity and can be bought and sold separately from the electricity itself. By purchasing less expensive replacement credits, Bowdoin was able to maintain its commitment to supporting renewable energy with the stated goal of using the difference in value to fund

sustainability projects, including electric vehicles, EV charging infrastructure, and energy-efficiency campus improvements.

Since Bowdoin began the REC arbitrage process in 2023, the College has reinvested those funds into dozens of sustainability initiatives. These investments have helped accelerate fleet electrification, with Bowdoin acquiring 24 vehicles over the past four years, including 13 fully electric vehicles and seven hybrid or plug-in hybrid models. As a result, electric vehicles now account for approximately 18% of the campus fleet.

In addition to two electric vehicles, the [Grounds Maintenance](#) team has transitioned almost 100% of their hand equipment to fully electric, with a goal to switch entirely to electric vehicles and equipment by 2028. This equipment includes electric trimmers, an electric snow blower, electric ride-on mowers, electric leaf blowers, and electric utility vehicles. It also includes a Zero Turn Electric mower, which recharges while in use, thanks to the solar-powered canopy located on top of the mower.

Rental Fleet Composition	
Vehicle Type	Count
BEV	2
PHEV	1
Hybrid	5
Gasoline	4

Work Fleet Composition	
Vehicle Type	Count
Ford E Transit Van	6
Electric Utility Vehicles (Grounds Maint.)	2
Chevrolet Bright Drop	1
Electric Club Car (Athletics)	1
Ford F-150 Lightning	1

Bowdoin's Electric Work Fleet

Electrified vehicles are now used across a variety of campus operations, including facilities management, grounds maintenance, athletics, public safety, both campus mail and warehouse package delivery, and the College's vehicle rental program. Through these deployments, Bowdoin is reducing transportation-related emissions while providing students, faculty, and staff with greater access to electric transportation options for both work-related and personal travel.

EV Charging on Campus

Bowdoin has made an intentional effort to create enough EV charging on campus so that employees feel comfortable knowing there is an opportunity for them to charge on campus if a home charger is not an option. There are currently a total of 10 networked dual-port EV chargers (20 charging ports) of varying power levels available on campus for students, faculty, staff, and campus visitors. Charging costs are \$0.30 per kWh for the first four hours of charging and a prorated rate of \$3 per hour after that. Bowdoin also maintains a database of over 100 student and employee EV drivers that receive a Bowdoin user group discount. These charging stations are available to the Bowdoin College community in part thanks to grant funding from Efficiency Maine. Additionally, there are 10 non-networked single port chargers which are of exclusive use of the College's EV fleet.

The [Climate Action Plan](#) also includes additional opportunities to reduce Vehicle Miles Traveled (VMT), such as creating a ChargePoint dashboard, collecting employee commuting data through surveys, and conducting campus security patrols by bicycle. Bowdoin students have also requested the creation of an app or system to coordinate carpooling off-campus and home during breaks as well as an electric shuttle to Maine Street and the Topsham Fair Mall.



*Groundskeeper using electric lawn mower with solar canopy
(Source: [The Bowdoin Orient](#))*

Outputs:

- 73 total vehicles in Bowdoin College's fleet
- 17.8% of fleet vehicles are fully electric
- 24 vehicles acquired in the past four years, including:
 - 13 battery-electric vehicles (BEVs)
 - 7 hybrid or plug-in hybrid vehicles
- Electric vehicles have been deployed across multiple departments, including:
 - Athletics
 - Campus Mail Services
 - Dining Services Catering
 - Electric Shop
 - Events Set-Up and Moves
 - Grounds Maintenance
 - Mechanical Shop
 - Safety and Security
 - Warehouse Delivery Operations
- Notable electric vehicle additions include:
 - Six Ford E-Transit work vehicles
 - Ford F-150 Lightning (Safety and Security)
 - Toyota bZ4X
 - Volkswagen ID. Buzz
 - Chevy Bright Drop
 - Electric Club Cars and utility vehicles used by Athletics and Grounds Maintenance

- Hybrid and plug-in hybrid vehicles added to the fleet include:
 - Ford Maverick Hybrids
 - Toyota Camry Hybrids
 - Toyota Sienna Hybrids
 - Chevrolet Volt Plug-in Hybrid
 - Volvo XC90 Plug-in Hybrid
- 10 publicly available networked dual-port charging stations (20 charging ports) installed on campus
- 10 additional single-port chargers dedicated primarily to fleet vehicle charging
- 30 total charging ports available across campus
- Nearly 100% of hand-held Grounds and Facilities equipment has been electrified, reducing the use of gasoline-powered tools

Since 2023, Bowdoin has utilized funds generated from REC arbitrage from its solar projects to invest in campus decarbonization projects including electrifying the campus fleet and building out charging station infrastructure for use by employees, students and the general public.

Outcomes:

Beyond reducing emissions and operating costs, fleet electrification has helped advance a broader culture of environmental consciousness at Bowdoin by increasing awareness of and confidence in electric transportation across campus. As students, faculty, and staff interact with electric vehicles and equipment in their daily activities, electrification has become a visible and tangible part of the College's sustainability efforts rather than an abstract climate goal.

The transition has also changed how employees experience their day-to-day work. Staff have reported appreciating the quieter operation of electric vehicles and equipment, which has reduced noise pollution across campus and created a more pleasant environment for both workers and the campus community. The Grounds Maintenance team has also observed fewer oil spills and less ground contamination associated with vehicle and equipment operation, reinforcing the environmental benefits of electrification beyond greenhouse gas reductions.

For employees who use electric vehicles regularly, firsthand experience has helped demonstrate the practicality and advantages of the technology. Reflecting on his experience driving an electric mail delivery vehicle around campus, Bowdoin mail carrier Ben Gould noted that he appreciates no longer operating a vehicle that produces emissions while driving through areas where students, staff, and visitors are walking and enjoying the campus. He also highlighted the convenience of being able to use heating and air conditioning without idling a gasoline engine and the vehicle's ability to operate for several days before requiring a recharge. Experiences like these help build familiarity with electric vehicles and support a culture of sustainability that aligns with the College's long-term climate goals.

As Bowdoin continues to expand its use of electric vehicles and equipment, these visible successes are helping build momentum for future electrification efforts and demonstrating how operational changes can contribute to broader institutional climate commitments.

Best Practices & Lessons Learned:

Winter Operations - One of the initial challenges Bowdoin faced in transitioning to electric vehicles was determining appropriate winter storage solutions, as cold temperatures significantly reduce electric battery performance and longevity. In accordance with industry best practices for cold-weather EV maintenance, Bowdoin stores its smaller electric vehicle fleet (electric Gem Cars, Club Cars, and utility vehicles) indoors to mitigate the adverse effects of harsh winter conditions. The Grounds Department learned the importance of battery management for electric vehicles that are not used regularly throughout the year. Rather than leaving vehicles fully charged or allowing batteries to become depleted during periods of inactivity, staff periodically inspect vehicles, monitor battery charge levels, and recharge them as needed. Grounds and Landscape Manager Shawn Robishaw found that checking vehicles approximately every two weeks and maintaining battery charge levels between 50 and 70 percent helped preserve battery health during extended storage periods and ensured vehicles were ready for use when needed. Following proper winter storage protocols ensures an electric vehicle's longevity.



Ben Gould with Bowdoin's Chevy Bright Drop Mail Truck

Initial Costs - As noted by the Grounds Maintenance team, a significant barrier to electrifying fleet vehicles is the higher upfront cost of electric vehicles compared to conventional gasoline and diesel vehicles. However, a lifecycle cost analysis may demonstrate that the total long-term operational costs of the two converge over time. To offset the higher upfront capital expenditure, institutions are encouraged to explore alternative funding mechanisms, as exemplified by Bowdoin's strategic use of revenue generated from the sale of Renewable Energy Certificates (RECs) to finance its initial electric vehicle investments.

Ease of Use for Employees - When promoting electric vehicle adoption among employees, it is essential to emphasize the reliability and operational efficiency of EV technology, while also ensuring that comprehensive training is provided to facilitate confident and effective usage. Employees have responded positively upon witnessing the performance capabilities of electric equipment firsthand. More broadly, minimizing barriers to adoption, whether perceptual or logistical, is a critical factor in successfully integrating new technologies such as electric vehicles into institutional operations.