

Battelle Sustainable Practices and Impact Disclosure

Our Commitment to Sustainability

Battelle's vision is to be a major force in science and technology discovery and in the translation of knowledge into innovative applications that have significant societal and economic impacts. Steel industrialist Gordon Battelle provided for the Battelle Memorial Institute in his 1923 last will and testament after a career devoted to the idea that science and research can solve problems in business and society as a whole. His vision became our mission when we opened our doors six years later. For nearly ninety years, Battelle has delivered on his vision to develop and deploy science for the betterment of mankind through the execution of world-class scientific research and development programs in National Security, Health, Environment & Infrastructure, Laboratory Management, and STEM Education.

Battelle protects the environment from unacceptable risks resulting from its operations through the implementation of a comprehensive sustainable environmental management system

— Battelle's Environmental Policy Statement

Since our founding, Battelle has incorporated a lifecycle-centered approach in delivering sustainable services and technologies to both private-sector and government clients, with a full awareness and transparency concerning their true costs and benefits. Battelle also continually invests in internal research and development programs to develop and validate new, more sustainable technologies that have promising commercial applications. This work and our collaboration with the national laboratories that we manage or co-manage for the U.S. Department of Energy expand the boundaries of science into new and exciting directions in pursuit of a cleaner and more sustainable future for our nation and the planet.

Battelle's values underpin its commitment to protect the environment, our staff, the public and future generations from unacceptable risks resulting from its operations. Staff members plan and conduct their work in furtherance of Battelle values and policies by knowing and following environmentally sound work practices and by integrating the principles of energy conservation, waste minimization, and resource protection into all work activities. Battelle implements its environmental protection program through a fully integrated set of environmental management processes whose purpose is to identify, assess, control, and minimize Battelle's impact on the environment.

Energy Conservation and Greenhouse Gas Emissions

Energy efficient practices have been cultivated at Battelle facilities for decades. Recent examples include the construction of net-zero energy visitor center at Battelle's West Jefferson facility that includes a solar array and a geothermal energy recovery system. Beyond that, Battelle's participation in American Electric Power's Continuous Energy Improvement Program reduced energy consumption in our central Ohio facilities by more than 3 million kWh/year, enough to power nearly 300 homes. That energy reduction will continue to accelerate with the recent demolition of more than 250,000 square feet of obsolete laboratory and office buildings from our headquarters campus in Columbus, Ohio.



Battelle's Net Zero Energy Visitors Center is equipped with a solar array and geothermal system

Battelle has reduced energy consumption through the virtualization of data centers and the deployment of EnergyStar™ rated information technology-related equipment. We have also reduced travel-related environmental impacts by greatly increasing the conduct of virtual meetings using Skype and WebEx, which was made easier by the recent modernization of nearly all major conference rooms so they could better facilitate web-conferencing and telepresence capabilities.



Battelle's participation in AEP's CEI Program reduced energy consumption by 3 million kWh

Each of these energy-related initiatives have resulted in significant reductions in Battelle's greenhouse gas emissions. Those reductions will be reflected in an updated greenhouse gas inventory that is currently under development based on the requirements of ISO 14064-2018.

Summary of Greenhouse Emissions (Tonnes CO₂e)

		FY17	FY18	FY19
Purchased Electricity (scope 2)	Tonnes CO ₂ e	39,344	39,954	38,943
Stationary Fuel (NatGas and Fuel oil, Scope 1)	Tonnes CO ₂ e	16,282	17,883	17,355
Fleet Vehicles/Aviation Fuel (Scope 1)	Tonnes CO ₂ e	1,550	1,971	1,749
Grand Total	Tonnes CO ₂ e	57,176	59,809	58,047

Natural Resource Management and Waste Minimization

As an operator of major research laboratory facilities, Battelle manages multiple types of waste streams. Even as our facilities have grown, Battelle has implemented initiatives designed to minimize the amount of waste generated from our operations. Some examples include:

- The creation of a chemical reuse program, which features a database tool where researchers can search the current inventory for available laboratory chemicals that might otherwise be disposed. This avoids new chemical purchases and reduces waste disposal costs.
- Battelle employs a single-stream method of office recycling where material sorting is conducted at a central automated recycling facility managed by our solid waste vendor, resulting in an increase in the quantity of materials diverted from landfill disposal.
- Battelle established a unique program that diverts nearly 10 tons/year of clean chemical glass and plastic containers from landfill disposal to recycling.
- By working with demolition contractors, Battelle has recycled over 80% of construction materials generated during large-scale demolition projects instead of having the materials go to a landfill.
- Battelle has moved to a more virtual, paperless office environment through the widespread replacement of obsolete printers and photocopiers with EPA Energy Star® compliant multi-function devices. These devices make the transfer of electronic documents easy and efficient, while offering standardized double-sided printing.

Sustainability-Focused Contract Research Activities

Battelle's Contract Research Organization has developed an extensive portfolio of sustainability-related products through our internally funded research and development program. Some examples include:

- Degradable by Design Deicer (D³) - a low-toxicity, less corrosive, bio-based alternative deicing fluid for aerospace and non-aerospace applications.
- PCO₂ – an unattended carbon monitoring system designed to measure, record and transmit seawater CO₂ concentrations from remote locations.
- NeuroLife – a breakthrough technology that empowers paralyzed patients to regain conscious control of their fingers, hand and wrist. The Neural bypass technology skips damaged areas of the nervous system to allow the brain to communicate directly with muscles.
- DroneDefender – a non-kinetic counter unmanned aerial vehicle device that defends airspace against commercial drones without compromising safety or risking collateral damage.

Philanthropy

Battelle is dedicated to improving the quality of life in the communities where our customers and employees live and work. We fulfill this commitment by distributing at least 20 percent of our net income annually to nonprofit organizations that support improved education, arts and cultural programming, civic development, and health and human services. Although all these areas are important, our primary giving focus remains in the area of science, technology, engineering and math (STEM) education.

Improving education is one of Battelle's founding purposes and operational signatures. As a business based on scientific discovery and application with an interest in promoting technical literacy, Battelle vigorously supports STEM education. Battelle strives to

measurably improve STEM education to prepare the next generation of scientists, engineers, technologists and thought leaders. Battelle is redefining how to improve STEM education through a strategy of four integrated learning priorities: Standards of Excellence, STEM Learning Networks, Workforce Development, and Education Innovation.



Volunteerism

Battelle highly values community involvement by its staff and values its reputation as a responsible corporate citizen, caring employer, conscientious neighbor, and community leader. Battelle encourages the development of community partnerships by supporting employee involvement in volunteer service through our Team Battelle program and providing organizations with direct funding and in-kind distributions. Team Battelle has been in existence since 1992, with staff members volunteering their time in the communities in the following key areas: Education, Arts & Culture, Civic & Community, and Health & Human Services. Team Battelle projects are volunteer-driven programs and activities that meet community needs, capitalize on staff interests and are consistent with our corporate citizenship priorities. Each year, Battelle staff log more than 10,000 volunteer hours supporting various Team Battelle projects around the country.



Battelle volunteers participating in Earth Day tree planting event.