Energy & Refrigeration

Using clean energy and efficiently managing our operational energy and refrigeration systems are critical for reducing our Scope 1 and 2 CO2e emissions, as well as for reducing expenses.

Energy & Our Warehouses

With more than 850 warehouses around the world, we are aware of just how large our environmental footprint can be. We are working to minimize that footprint through energy-efficient systems and smart operating procedures. We know this is critical because purchased energy is the largest source of our carbon emissions created within our operations.

Our strategy to achieve our carbon reduction goals and reduce emissions involves both how we source energy, and how we use it. We are working toward these goals by:

- Increasing our use of clean energy, with a goal of 80% clean purchased energy by 2030. We also have more than 100 on-site solar systems, which we will expand where feasible.
- Adopting smarter systems within the buildings. This includes using energy and lighting management systems to control heating and cooling set points, set lighting schedules and provide information for system troubleshooting and diagnostics.
- Converting older U.S. warehouses to more energy-efficient LED lighting systems. Our new warehouses use LED lighting technology; also, older generations of LED are being replaced by newer versions.

- Improving the overall efficiency of our “building envelope.” This includes eliminating skylights in new construction where appropriate, covering skylights in select existing locations to lessen the workload of HVAC systems, and taking other similar steps.
- Considering innovative system designs based on operational and regional needs. For example, in some warmer climates, we have installed hybrid systems that use an energy-efficient combination of fans and misting to cool refrigeration systems throughout the day.
- Committing to education and training for our employees to increase staffing expertise. This includes Certified Energy Management training, among other programs. We share best practices and ensure compliance through our STAR program in the warehouses.

Energy efficiency also saves expenses, which helps us to remain a low-cost operator. You can find more specifics and results related to our energy-saving measures, including our Scope 1 and 2 emissions, in our Climate Action Plan.

Case Example: Insulated Doors

Warehouses are using various techniques to save energy. One example is insulated doors to the walk-in refrigeration coolers. Where possible in our U.S., Canada and Mexico locations, these doors are closed when the warehouse is not open. The process helps keep the coolers cool, putting less stress on the refrigeration system. The savings from these insulated doors are 25,000 to 35,000 kWh per location. Given these continued savings, we will continue to add the insulated doors in our new locations and remodels when appropriate.

Auditing Our Energy Use

We have launched a pilot program in select warehouses to take an in-depth audit of energy consumption throughout the buildings. The Warehouse Energy Audit Pilot, conducted by a professional energy auditing engineering firm, entails examining all energy-consuming equipment, from fans and lighting to ovens and coolers. This project will yield a detailed energy use analysis that will help us identify where we can improve operations and equipment in existing warehouses, and how to increase our efficiency as we grow in future years.

Managing Refrigerants

We recognize that hydrofluorocarbons (HFCs) and other gases in our refrigeration systems have a major impact on our climate. We continue to explore new technologies and carefully select refrigerants that are low in Global Warming Potential and reduce CO2e emissions. We're taking these steps to manage refrigerants in our global operations:

- Testing new emerging leak detection technologies to identify refrigerant leaks and trigger alerts for faster resolution.
- Retrofitting our existing locations with high GWP refrigerants to lower refrigerants, such as using CO2 as a refrigerant, where the required equipment and labor are available, and where it is operationally viable.
- Working with certified contractors who adhere to best management practices in installing, maintaining and decommissioning equipment.
- Working on obtaining platinum-level certification from the Environmental Protection Agency's GreenChill program. So far, as of the end of FY23, we have 15 warehouses that have been certified Platinum Level by GreenChill.

Costco in Iceland

Iceland's geothermal system produces hot water that provides space heating and hot water supplies throughout our warehouse. This system also facilitates snowmelt to free up sidewalks and key areas in front of the building, including the gas station forecourt (filling area) and the freight area ramp. Our Iceland warehouse also has a traditional turf roof to blend into the area.