



TI Corporate Citizenship Topic Brief

Climate change

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Why it matters

At TI, we take climate change seriously. We want to do our part to protect the environment in which we live and work. We invest in controls to reduce our greenhouse gas emissions (GHGs), which are emitted through our operations, product manufacturing and distribution processes, employee commuting and business travel. We do this not only because it is regulated, but because we believe it is the right thing to do.



Our approach

We have programs in place to reduce GHGs from all sites worldwide. We place special attention on reducing emissions we cause, known as scope 1 emissions, and emissions created by the electricity, heat or steam we purchase for our manufacturing operations. These are known as scope 2 emissions and are the most energy-intensive.

Reduction goals

To reduce climate impacts, we have set a goal to lower absolute worldwide scope 1 and 2 GHGs by 15 percent between 2015 and 2020. Additionally, we support the World Semiconductor Council's goal to reduce GHG emissions by 30 percent per amount of product produced (based on surface area) by 2020, from a 2010 baseline. We do not include carbon offsets – projects that companies can fund to offset the GHGs they create – in our calculations when measuring progress against these goals.

Regulations and reporting

We comply with GHG regulations that vary by country, state and municipality, and report emissions to relevant agencies. We are required to report U.S. GHG emissions to the U.S. Environmental Protection Agency (EPA) to comply with its mandatory reporting requirements. The EPA requires the semiconductor industry (among other industries) to measure and report annual fluorinated GHG emissions (such as sulfur hexafluoride, perfluorocompounds and hydrochlorofluorocarbons) as well as GHG emissions from combustion sources.

We also voluntarily report our GHG data to the:

- World Semiconductor Council as part of the U.S. industry report
- [CDP](#), a group of institutional investors that encourage private- and public-sector organizations to measure, manage and reduce emissions
- Annual [Corporate Citizenship Report](#) that we produce

Our scope 1 and 2 greenhouse gases include:

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous oxide (N₂O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulphur hexafluoride (SF₆)
- Nitrogen trifluoride (NF₃)

Accountability

The company's vice president of Worldwide Facilities, who reports directly to the chief financial officer, oversees climate change initiatives. The Audit Committee of our board of directors oversees environmental compliance efforts and risk assessment processes. Where climate change matters may have significance for TI, these matters are included in reviews to help the Audit Committee fulfill their oversight responsibilities.

Our GHG strategy team – comprising internal environmental leaders and government relations staff, as well as legal, air quality, chemistry and energy experts – coordinates and manages climate change initiatives. Our business units and government relations organization also monitor government initiatives and incentives, as well as business opportunities, so that we can apply our innovative technologies to enable energy savings and new energy sources, which can subsequently help reduce greenhouse gas emissions.

We also expect TIers to achieve continuous improvement toward objectives and targets appropriate to their function, including GHG reduction goals.

Calculating emissions

For GHGs, we calculate emissions from sites that we financially control. We calculate scope 1 emissions using the Intergovernmental Panel on Climate Change's Tier 2B methodology and scope 2 emissions using guidelines from the World Resources Institute (WRI). This includes accepted quantification methods, emission factors and global warming potential. TI has not fully calculated all relevant scope 3 emissions due to the complexity of our supply chain and the number of products we manufacture.

In the U.S., we also use the EPA's GHG reporting emissions factors. This regulatory agency also verifies our GHG data collection process and methodology.

Risks and opportunities

Risks

Although not currently believed to be material, TI is exposed to certain regulatory and physical risks associated with climate change. We closely track global energy and environmental concerns and are committed to being part of the solution. We also work through associations to provide context and perspective on the potential impact of legislative and regulatory proposals.

Currently, we do not believe these risks have potential to generate a substantive change in TI's business operations, revenue or expenditures.

Regulatory

Regulations addressing GHG emissions are in place or are being developed in many markets where we operate. Changes in the regulation could result in compliance activity-related costs and increased energy and raw material costs.

Physical

Although not currently believed to be material, TI could be exposed to certain physical risks associated with climate change, such as typhoons or other extreme weather events. In any natural or manmade disaster, our priorities are to protect our people, assets, revenue and reputation. In addition, our technologies can aid relief and recovery efforts.

Opportunities

Governments and private entities in the U.S., China, European Union, India and Japan are taking significant action to increase energy efficiency and the availability of renewable energy, which helps reduce emissions. As a result, we anticipate growth by providing technologies that will enable our customers to reduce power use and subsequent GHG emissions. Potential customers include electricity providers, distributors, manufacturers of white goods (appliances) and the transportation industry, among many others.

Our carbon footprint calculation includes all owned and leased sites larger than 50,000 square feet. This accounts for 97 percent of our total square footage and more than 99 percent of our equivalent carbon dioxide (CO₂e) emissions. It does not include any subcontractor or supplier manufacturing facilities or facilities smaller than 50,000 square feet, whether owned, leased or controlled by TI.

TI is well-positioned to respond to these needs as an industry leader in power management and ultralow-power solutions.

We invest in research and development and collaborate with partners to develop new energy technologies. We also opened on-site centers such the Solar Energy Systems Lab and LED Lab to develop breakthrough innovations in this space. Additionally, we are designing our own products to be more efficient. For example:

- Global energy demand is expected to double by 2050, which calls for a more efficient and reliable power infrastructure. Smart grids, enabled by TI technology, are reducing costs, saving energy, and improving how energy demand is monitored and managed. Utilities can use smart electrical meters to adjust (with permission) thermostats, appliance usage and HVAC settings in homes and businesses to avoid rolling brownouts or having to charge peak rates. This reduces climate impacts as well.
- Industrialized and emerging countries are seeking ways to reduce carbon dioxide emissions from automobiles to support global climate-change initiatives. Our analog and embedded processing products allow hybrid and electric vehicles to reduce these impacts.

Reduction programs and strategies

We believe that industry has a role in mitigating potential climate change impacts by reducing industrial GHG emissions and we work with industry consortia such as the Semiconductor Industry Association to define ways to do this efficiently and effectively. Not every GHG mitigation strategy is appropriate for TI. We must weigh each reduction decision by balancing our progress in sustainability against practical cost considerations.

See [Environment, safety and health](#) to learn about TI's emissions:

- Management system
- Policies
- Grievance mechanisms

Manufacturing

We currently focus our efforts on reducing GHGs from two primary areas: energy use and perfluorocompounds (PFCs). PFCs are a group of chemicals vital to semiconductor manufacturing, but have “high global warming potential.” While our industry’s emissions are relatively small, we make financial investments and employ numerous mitigation strategies to reduce GHGs, such as:

- Using alternative gases and eliminating nonessential PFC use
- Reusing chemicals
- Reducing energy consumption and improving building efficiency
- Using efficient manufacturing technologies and abatement devices
- Encouraging employees to use alternative forms of transportation (i.e., biking, shuttles, buses, trains) for commuting

Alternative transportation

TI encourages employees to do their part in reducing GHGs caused by air travel or commuting to and from work. In North Texas, we formed a Commute Solutions team to lead this effort, manage global activities such as Bike to Work Day and help facilitate relevant site commute solutions as needed. Some larger sites across the globe have employee trip coordinators, who engage Tlors in hopes of increasing their participation in alternative transportation programs.

To make commuting easier, our global Commute Solutions website offers:

- A ride-sharing match database
- Bus and shuttle schedules
- A list of vanpools including origin, destination, times and contact information
- Tips on how to reduce trips during the day
- Information about flexible work options
- Notices about bicycling workshops and events
- The location of bicycle-related amenities, such as bike racks, showers or bike repair stations at different sites

Our key transportation strategies include:

Mass transit

We began subsidizing mass transit passes for Dallas-area employees in 2005 to encourage use of local trains and buses.

Van and carpools

We subsidize the cost for the vans, and the riders split the cost of gas and tolls. The vans transport 10 to 15 Tlers, which removes the equivalent of up to 14 cars and subsequent emissions from the road per van trip. Employees also form carpools through our ridesharing match database and/or the North Texas Council of Governments' ride-sharing match service. In the Philippines, Malaysia, China and Mexico, we provide buses and jeeps to ferry employees to and from work.

Shuttles

At campuses in Texas and California, Tlers can take free shuttles to travel between buildings, or to and from nearby mass-transit stations. At our main campus, shuttles also take employees to nearby businesses.

Cycling

We began encouraging employees to bike to work about a decade ago, when we held our first Bike to Work Day for Dallas-area employees. That program has since expanded internationally.

For employees who live in congested areas (such as Chengdu, China) or relatively near our facilities, bicycling to work is an inexpensive, clean and easy way to commute. Facilities in Arizona, Colorado and Texas also are located near city-supported bicycle routes that provide safe paths for commuting. With the increase in employee interest, sites are installing bike racks and other facilities. At our Dallas headquarters and fitness facility, we installed bicycle repair stations.

For our efforts in support of cycling, the League of American Bicyclists designated TI a "Bicycle-Friendly Business." TI was the first business in North Texas to receive bicycle-friendly recognition.

On-site facilities and services

Other ways we help Tlers reduce emissions include:

- Using WebEx or other video-conferencing systems to reduce travel to meetings
- Offering an on-site concierge service to assist U.S. employees with reservations, event planning and many other needs. They offer products for sale on the premises, such as tickets, gifts and discount cards to cut down on errands

Our site in Chengdu, China, and three campuses in Texas offer covered parking for bicycles. Covered parking for mopeds, scooters and motorcycles is available in Chengdu, as well as our sites in Taipei, Taiwan, and Melaka and Kuala Lumpur, Malaysia. Some facilities, including our headquarters, also have:

- On-site showers for Tlers who bike or walk to work
- Electric vehicle recharging infrastructure
- Preferential parking spaces for vanpools, carpools and low-emission vehicles

Work flexibility

Where possible, we provide flexible work options for employees to commute during non-peak times or to eliminate the need to drive to work.

Company fleet

Our small fleet of company vehicles primarily includes sedans, utility vehicles, light- and medium-duty trucks, vans and gas/electric hybrids at our North Texas sites. Depending on the need, we match vehicles to their ideal use; for example, trucks to haul equipment for maintenance purposes or vans to transport Tlers. To ensure optimum performance, we conduct annual emissions and safety inspections. For vehicles that have been driven more than 100,000 miles, we perform emissions inspections quarterly.

Evaluating our progress

Through routine monitoring and audits, we have been able to comply with greenhouse gas regulations and reporting requirements worldwide. Advancement in the size of wafers, efficiency of machinery and reduction of chemicals also has helped our company reduce normalized GHG emissions since 2010 despite an increase in production.

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