



CLIMATE &
SOCIAL IMPACT

SEMICONDUCTOR-ECOSYSTEM

EARTH MONTH

LIGHTNING TALKS

OUR POWER, OUR PLANET



SEMI FOREST

Welcome



Wojtek Osowiecki
Lam Research

Chair, SEMI Climate & Social Impact Work Group

Keynote



Vrushali Gaud
Google



Google's Path to 2030

Net Zero by 2030

"At Google, our goal is to achieve net-zero emissions across all of our operations and value chain by 2030. We aim to reduce 50% of our combined Scope 1, 2 (market-based), and 3 absolute emissions (compared to our 2019 base year) by 2030 .

Water and Circularity goals

"By 2030, Google will aim to replenish 120% of the freshwater volume we consume, on average, across our offices and data centers and we aim to maximize the reuse of finite resources across our operations, products, and supply chains



Global Director, Climate Operations
(NetZero, Water, Circularity lead)



Google's Impact in Action

Engaging employees

- Sustainability, clean energy, supplier responsibility teams...
- Internal Anthropocene employee group
- Volunteer and Skilling opportunities
- Green buildings and facilities



Data and Technology

- Google Earth, Nature and Biodiversity tools, Energy innovation
- Google Cloud tools for customers
- Google for Startups - Climate





ESG Employee Activities at Advantest America

Werner Haberstock
Senior Director – Global QA Division
Advantest America

ADVANTEST®

SUSTAINABILITY

Advantest at a Glance



A **global leader** in the ATE industry with a WW installed base of over 30,000 systems



Our nanotechnology products support leading-edge semiconductor processes at the **1Xnm node**



Our diverse workforce includes **5,500 employees** from **50 countries**



Eco-friendly policies emphasize reduction of our carbon footprint



Semiconductor Climate Consortium
Founding Member



Renewable Energy Goals & Progress



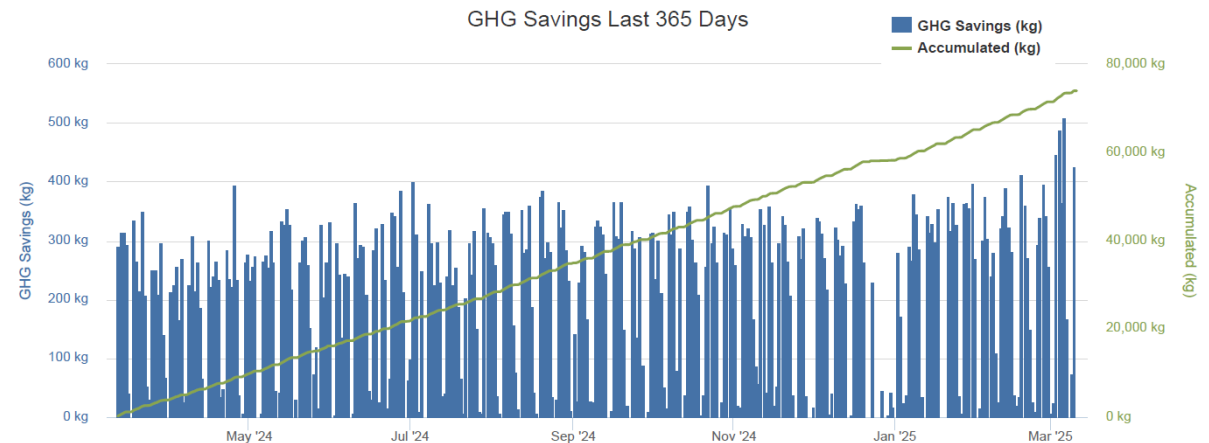
- **Advantest's Global ESG Action Plan**

- GOAL: Raise renewable energy usage to 70% by 2030
- KPI: Renewable energy sourcing rate

2023 Target	2023 Result	2030 Target
55%	65%	70%

- **GHG Savings from Electric Car Charger Stations**

- Approx. 70,000 kg accumulated over last 365 days)



Employee Activities at Advantest America

- **Recycling**
 - TechExchange drive (donating used laptops)
 - Clothing drive (reducing post-consumer waste)
- **Environmental**
 - Beach Clean-up with Pacific Marine Mammal Center (PMMC)
 - Invasive plant weeding at Coyote Ridge with Open Space Authority
- **Social Impacts**
 - Second Harvest & South County (food sorting)
 - STEM Day for middle schoolers in Lake Forest office
 - JoyJars Stuffing Event at Jessie Rees (N.E.G.U.) Foundation
 - Habitat for Humanity
 - Employee engagements: Earth Day awareness walk and tree donation (Advantest Forest)

Results

- Over 35,000 lbs of food sorted & \$4,500 raised for Second Harvest (Sept 2024 – Jan 2025)
- 121 laptops donated to TechExchange (stopping “4909 lbs of carbon emissions from entering the atmosphere”)
- 45 lbs of trashed removed from beach (Apr & Oct 2024)



ADVANTEST[®]



Semiconductor
Climate Consortium
Founding Member

SUSTAINABILITY



THANK YOU

Werner Haberstock

Senior Director – Global QA Division

Advantest America



Our Innovations Make Possible™ a Better Future

We are the leader in materials engineering solutions used to produce virtually every new chip and advanced display in the world.

Net Zero 2040 Playbook™



Applied's Net Zero 2040 Playbook is powered by innovation, clean energy and collaboration focused on:

- Accelerating Grid Decarbonization
- Innovating with Customers
- Improving Product Efficiency
- Transforming our Supply Chain

Goals and Progress:

- **Net Zero for Scope 1 & 2 by 2030**
 - » 50% reduction in Scope 1 and 2 emissions by 2030 from a 2019 baseline (SBTi validated)
 - » 100% Renewable Electricity globally by 2030 (SBTi validated)
- » **3x30 product goals** (30% reduction in less equivalent energy, chemical impact, and fewer sq. ft/wafer)
- **55% reduction of Scope 3** emissions from use of sold products per \$M gross profit (SBTi validated)



Applied Purpose

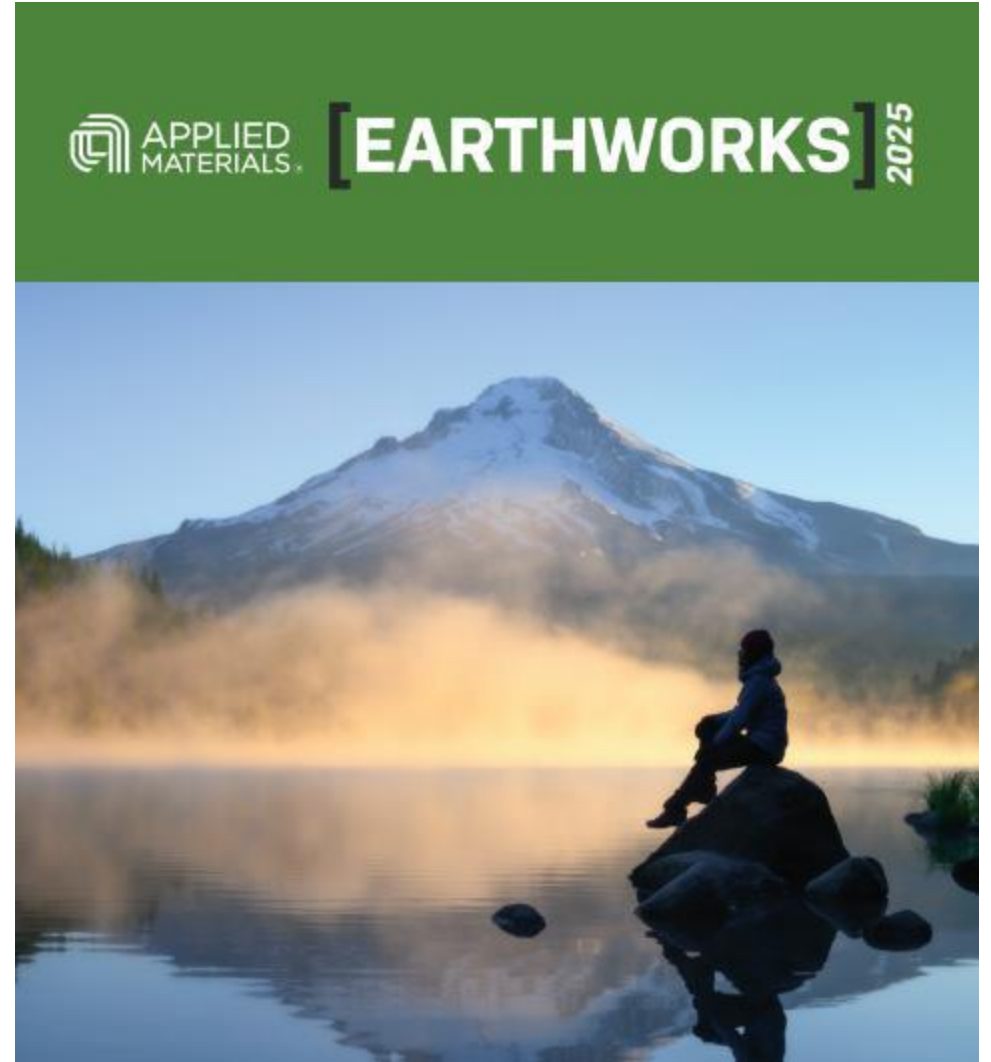


EarthWorks Campaign: April – June annually

- **10+** countries engaged
- **2,500+** employees participated globally in 2024
- Dozens of nonprofit partners
- Hundreds of activities

Applied donates to plant a tree for every employee who participates!

2007 planted last year



Global Applied Impact Network



Global Applied Impact Network (GAIN) augments and amplifies regional sustainability performance to:

- **Connect** regional sustainability teams with each other and Applied's sustainability strategic imperatives
- **Support** a common framework for all regional sustainability strategic and green teams
- **Share** regional sustainability best practices, key projects, and results

Structure:

- Regional Sustainability Strategy Teams
- Employee-led/Site-level Green Teams



Elevate global sustainability ideas and performance to **Make Possible® a Better Future.**





A Semiconductor Fab Equipment Company



1000+ global members

Vision
A community where all members are empowered to actively advocate for environmental sustainability in the workplace and beyond.

Mission
To build an inclusive and diverse community of Lam employees furthering environmental sustainability through education, employee-led projects, collaboration, and community volunteerism

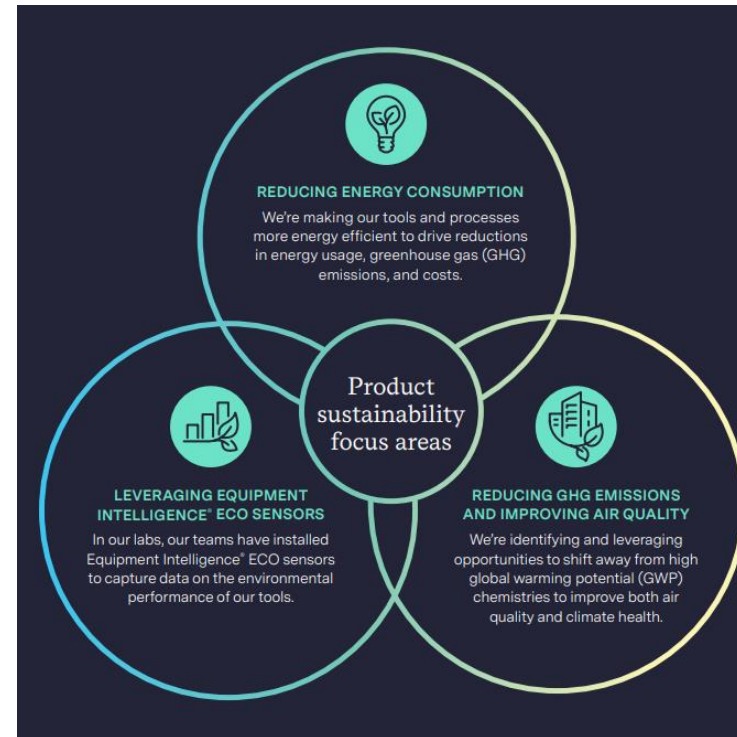




NET ZERO TRACKING OUR NET ZERO ROADMAP

RECENT PROGRESS		NEXT STOPS
2021 <ul style="list-style-type: none"> Announced SBTi intention and net zero pathway <p>ACHIEVED</p>	2022 <ul style="list-style-type: none"> Achieved SBTi approval for three near-term emissions-reduction targets <p>ACHIEVED</p>	2025 <ul style="list-style-type: none"> Reduce absolute Scope 1 and 2 (market-based) GHG emissions by 25% from a 2019 baseline Achieve 12M kWh in total energy savings from a 2019 baseline 46.5% of suppliers and 83% of customers measured by emissions have science-based targets (SBTs)

THE ROAD AHEAD		
2030 <ul style="list-style-type: none"> Reduce absolute Scope 1 and 2 (market-based) GHG emissions by 60.6% from a 2019 baseline Achieve 100% renewable electricity 95% of top direct suppliers measured by spend have SBTs 	2040 <ul style="list-style-type: none"> Achieve net zero operations (Scope 1 and 2) Achieve absolute reduction in supply chain emissions (goal to be set) 	2050 <ul style="list-style-type: none"> Achieve net zero emissions



LMM's Eco-Hackathon: Brainstorming Sustainability
Feb 20, 2025



Lam Employee Sustainability Community supports corporate NetZero goals

- EcoHackathons



LESC EMEA - Earth Month March event in Dresden - Solitary bees, building nesting aids

Yesterday we dedicated two hours to very fascinating animals: solitary bees. After watching a very informative documentary we rolled up the sleeves and built 20 solitary bee houses made from tins. With very little effort you easily can increase biodiversity on your balcony or backyard. The documentary is available on youtube including instructions how to build bee houses. <https://www.youtube.com/watch?v=PDnq5A-tHLg> Please post pictures of your bee houses! We are looking forward to welcome the first tenants.



Earth Month : One Million Tree Planting in Penang

On April 22, the Lam Employee Sustainability Community (LESC) team in Malaysia collaborated with the Malaysian Nature Society to plant 100 forest trees at Air Itam Dalam Educational Forest.



Volunteer Opportunity

Seaside Beach Cleanup

This volunteer opportunity is part of SOLVE's annual "Beach & Riverside Cleanup." At this event, we will comb the beach to remove litter and debris from the shoreline, ensuring a cleaner and safer environment for both marine life and beachgoers. This is a family-friendly clothing and and volunteers of all ages are welcomed. Bring the whole family and make it a fun and impactful day at the coast.



Thanks to each one of our LESG INDIA Volunteers and for the extended support 30+ Volunteers were part to the event, were educated on Dense forestry method and 500 Saplings were planted

NXP





~33,100 Team Members	+30 Countries Worldwide
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NXP's Corporate Sustainability Efforts

- * Strong ESG target setting and rigorous follow-through
- * 2024 results just published (<https://www.nxp.com/docs/en/supporting-information/Corporate-Sustainability-Report-2024.pdf>) showing NXP's strong commitment

Some Key elements:

- All targets fully validated by SBTi
- Carbon neutrality by 2035



Introduction: 2024 Highlights

Environmental



Validated Scope 1, 2 and 3 emission reduction targets with **SBTi**



39% decrease in Scope 1 and 2 emissions compared to 2021



44% renewable electricity use



Completed **Solar Installations** at 4 sites



55% water recycled



89% waste recycled



NXPs Employee Engagement efforts to more Sustainability:

No eXtra Planet ERG

- **Vision**
 - No eXtra Planet is a network of active NXP members engaged in valuable initiatives on climate change and biodiversity
- **Mission**
 - Sensitize, motivate and encourage all NXP employees in their professional and private life to make more sustainable decisions
 - Offer knowledge on sustainability themes
 - Sharing and collaborating on sustainable best practices across the company and with external experts
 - Act locally, think globally, complementary to the NXP corporate sustainability programs

Key elements (personal selection 📄)

- started in 2021
- 650+ members in 22+ sites
- strong alignment w/ corporate sustainability team



No eXtra Planet – AMEC



No eXtra Planet – EMEA



No eXtra Planet – ASIA





Green Canteen : plant-based program



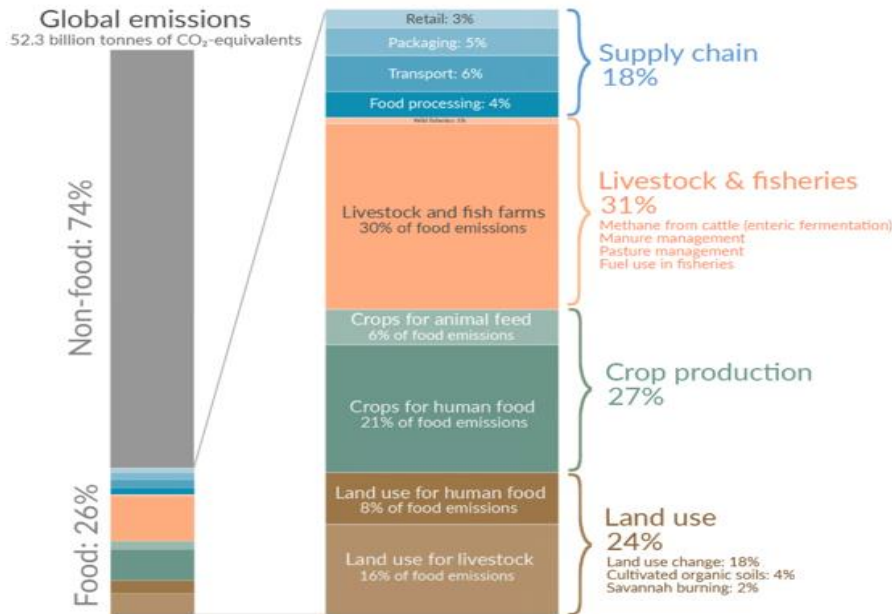
Why Plant Based ?

- Our diet and food choices significantly impact our carbon “footprint.”

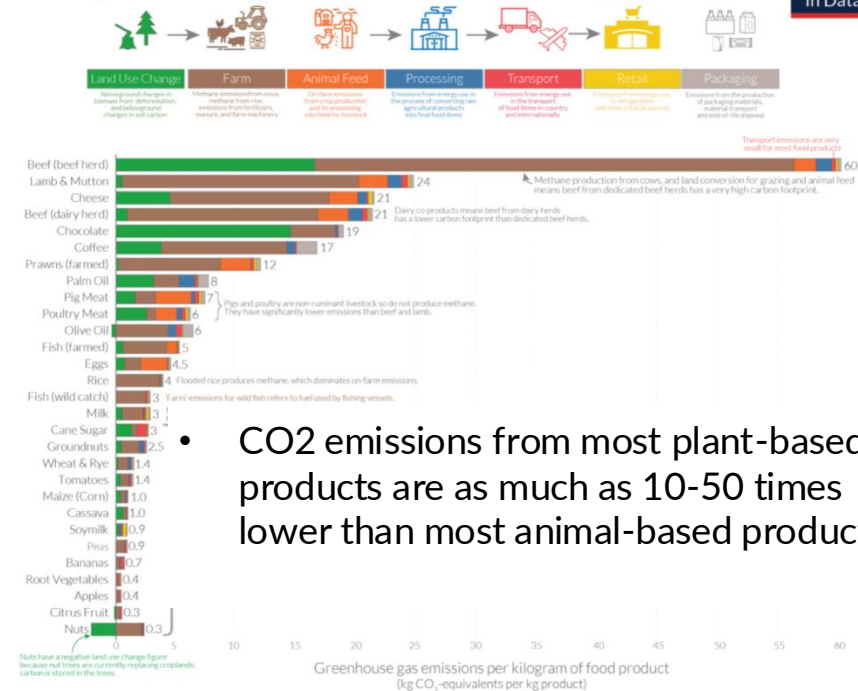
1. One-quarter of the world's greenhouse gas emissions result from food and agriculture.

2. Many assume that eating local is key to a low-carbon diet, however, transport emissions are often a very small percentage of food’s total emissions – only 6% globally.

Global greenhouse gas emissions from food production



Food: greenhouse gas emissions across the supply chain



- CO2 emissions from most plant-based products are as much as 10-50 times lower than most animal-based products.

Data source: Joseph Poore & Thomas Nemecek (2018); Reducing food's environmental impacts through producers and consumers. Published in Science. Licensed under CC-BY by the author Hannah Ritchie (Nov 2022)



Green Canteen : plant-based program

Survey done at NXP (#1K people feedback)

NXP Global employees show their **wishes to reduce animal-based products consumption** (#69%) & want the canteen to offer more vegetarian (56%) plant-based food (43%)

1st step : Plant-based option for Specific event (variations from site to site)

- Veganuary
- Plant based option during earth week
- Plant based option for local event

2nd step : Plant-based option on daily basis

- Plant based catering policy : redaction

“... NXP acknowledges the importance of integrating vegan food options into our corporate catering menus ... We recognize that people require vegan options for several reasons, among which: health benefits, sustainability reasons, animal welfare and beliefs. With the right commitment from our catering partners, we believe we can make an impact for every reason why our employees choose to eat more plant-based options in their diet. “

- Plant based catering policy deployment => start in 2025



Green Canteen : plant-based program

Our Power, Our Planet !

Our diet and food choices significantly impact our carbon footprint.

We have the power to modify our carbon footprint impact with plant-based meal option

A reduction of 50% of consumption of animal's products allow to reduce of 36% greenhouse gases related to food

<https://www.viande.info/en/diagrams/greenhouse-effect-according-to-food>



STMicroelectronics: Renewable energy, employee & community impact

SEMI Earth Month Lightning Talks

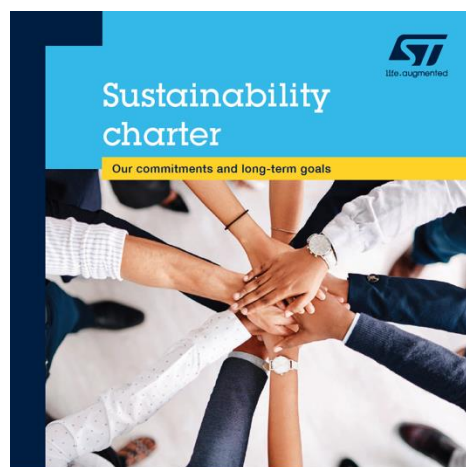
April 24, 2025

A photograph showing a person wearing a cleanroom cap and mask, looking through a circular opening in a perforated metal barrier. The background is a bright, cleanroom environment.

ST creates technology
in a sustainable way,
for a sustainable world.



For STMicroelectronics, sustainability has been core to business and culture >30 years



1987	Creation of ST. Business conduct & ethics policy
1993	First environmental policy
1995	First environmental decalogue
1997	First environmental report, ISO 14001, EMAS
2000	Signatory of the UNGC 10 principles
2001	Creation of ST Foundation
2002	Establishment of a reforestation program
2003	OHSAS18001 safety certification (migration to ISO 45001 in 2021)
2007	Conflict Minerals program
2011	Sustainable Technology program
2012	ISO 50001 energy management
2014	5 th Environment, Health & Safety Decalogue
2016	ISO 22301 Business Continuity 1 st certification
2020	Commitment to be Carbon Neutral by 2027
2021	New Sustainability Charter published
2025	28 th year of reporting First integrated report as part of ST's annual report





Sourcing 100% renewable electricity by 2027

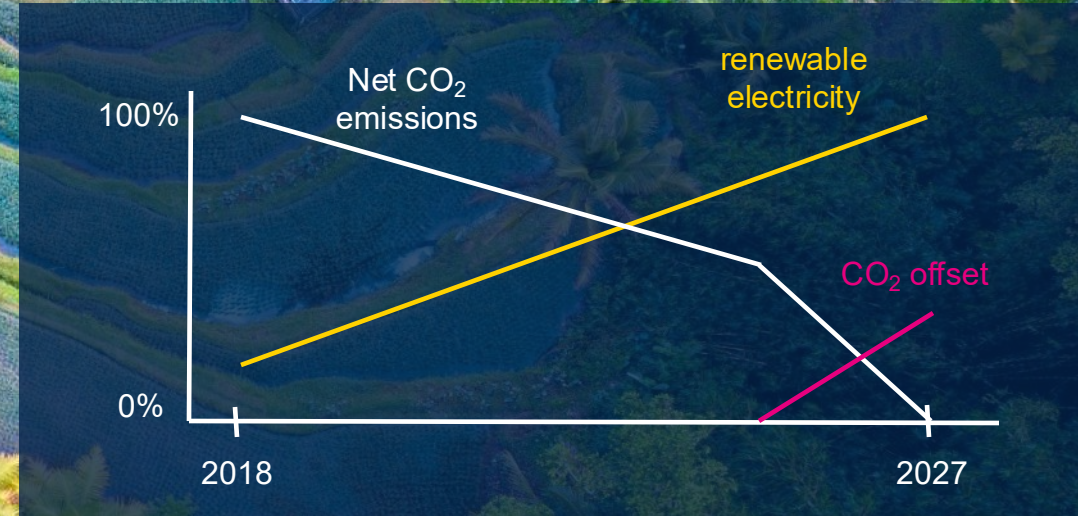
Carbon neutral by 2027, ST's 40th anniversary

(on Scope 1 & 2 and focusing on product transportation, business travel and employee commuting emissions for Scope 3)

Compliance with the **1.5°C scenario** by 2025 – recognized by SBTi



Collaborative programs and partnerships



Long-term Power Purchase Agreements for supply of energy from renewable sources

In 2024: 84% electricity from renewable sources

2023	2024	2025
Wind farms 15-year agreement, ST operations in Italy	New solar farm 21-year agreement, ST operations in Malaysia	New solar farm 10-year agreement, ST operations in Italy
		2 wind & solar farms 15-year agreement, ST ops in France





Engagement

How we come together to support each other and our communities

Networks

Employee-led, -sustaining



Blossom



LGBTQIA+ & allies



WISE



ABLE



Sustainability Committee

Representing all locations and organizations*



ST4Good



Digital platform provides access to volunteering activities and makes it easier for employees to contribute to community initiatives

Community Relations Policy

- Employee \$ Match
- Volunteer \$ Match
- Paid Volunteer Time Off

ST Annual Recognition (STAR) awards

recognizing employees for >30 years across categories of Leadership/Employee engagement, Innovation, Sustainability, Manufacturing performance and more.

*additional to the Corporate Sustainability Organization and Global Sales & Marketing Sustainability Organization



STEM your way
Innovation depends on you

STMicroelectronics
Foundation

We work to inspire young diverse people to choose science and engineering studies and careers

“STEM Your way” Program is a global framework developed through cross-fertilization between ST sites




Student Day

STUDENT DAY 2024
8 maggio, 8:30 - 14:30
Via Il Moro de Feo 1, Arzano (Na)



ISCRIZIONI ENTRO IL 2 MAGGIO su pepiter.info



ST Foundation’s mission is to develop, coordinate, & sponsor projects that employ of modern sciences & latest technology to promote human progress

- The ST Foundation continues to **bridge the digital divide** between those who have access to modern technologies and those who do not
- The Digital Unify (DU) program, launched in 2003, has trained over **1,200,000 people in 31 countries** since its inception

In 2024, over 139,000 trainee students took part in classes on computer skills, and ‘Tablets for Kids’



Earth Month: Growing Leaders, Restoring Forests



SEMI FOREST










Growing Global Problem-Solvers...

Call-to-Action (CTA): Empower **young k-12 learners** to connect virtually for collaboration—school-to-school and classroom-to-classroom.

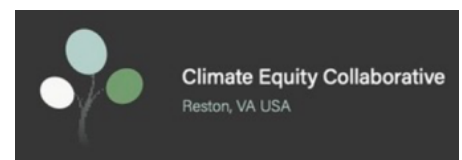
Through a new partnership, students are building:

-  Collaborative problem-solving skills
-  STEM & Global Partnership
-  Foreign Language skills & Climate Education
-  Programming and Technology competencies
-  Interest in the chips industry





Your Partners





Restoring Forests...

- 🌳 Forests absorb 30% of global CO₂
- 🔥 35% of forests lost in 300 years
- 🌱 Restoring tree cover = 23% of needed CO₂ removal
- 🐾 Rainforests hold 50% of Earth's biodiversity
- 💡 Forest protection = top climate solution

SEMI urges our industry to commit to reforestation—together, we can plant 1 million trees!

Growing leaders...



 **Inspiring Future Leaders**

Support the next generation of climate-literate innovators.

Read the story of the ASML Forest



Earth Month: Growing Leaders, Restoring Forests



SEMI FOREST

<https://www.semi.org/en/blogs/one-tree-per-employee-how-a-grassroots-initiative-in-asml-san-diego-is-assembling-restorative-future-with-real-results>





Announcements

SUSTAINABILITY

CONNECT - COLLABORATE. - INNOVATE. - GROW. - PROSPER

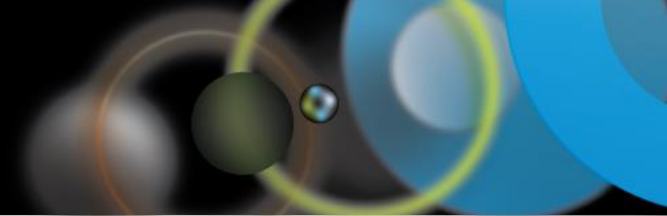


Circularity Strategies and Waste Regulations for Semiconductor Professionals

An online course to guide you in upcycling spent materials, realizing revenue and lowering liability.

A SEMI Sustainability Initiative Course





Sustainability Events At a Glance

Subject to Change

15-May (Thurs)	16-May (Fri)	19-May (Mon)	20-May (Tues)	22-May (Thurs)
<p> </p> <p>Global Climate Summit Workshops 12:00 – 19:00 <i>(by invitation only)</i></p> <p>1:00 PM Keynotes 2:30 Fab Tours</p> <p>Location: Microsoft Offices, Singapore</p>	<p> </p> <p>Global Climate Summit Workshops 08:00 – 17:00 <i>(by invitation only)</i></p> <p>Themes: AM – Fab Scope 1 PM – Energy Efficiency</p> <p>Location: Microsoft Offices, Singapore</p>	<p> </p> <p>Global Climate Summit Workshops 08:00 – 17:00 <i>(by invitation only)</i></p> <p>Themes: AM – Energy Procurements PM – Scope 3 Upstream</p> <p>Location: Sands Convention Center</p>	<p></p> <p> </p> <p>Global Climate Summit Workshops 08:00 – 12:00  <i>(by invitation only)</i></p> <p>Themes: Reporting Alignment & Closing</p> <hr/> <p> </p> <p>Sustainability Trainings 09:00 – 13:00  Vital Roles of RECs in SG Green Plan 14:00 – 18:00 SG Carbon Credit Landscape <i>(Fees Apply)</i></p>	<p></p> <p></p> <p>Sustainability Forum 10:00 – 13:00 </p> <ul style="list-style-type: none"> ❖ Factory Automation ❖ Circularity, Waste and Water Management ❖ Carbon Market <p><i>(Fees Apply)</i></p>

GCS

GLOBAL
CLIMATE
SUMMIT
WORKSHOPS

Global Climate Summit Workshops

Objective

SEMI, the Semiconductor Climate Consortium (SCC), Google and other hyperscale partners, are looking forward to accelerating our joint decarbonization roadmap. This forum is an invitation to supply chain partners to share their solutions and progress.

Date: May 15-16 & 19-20, 2025

Where: Co-located with SEMICON SEA, Singapore (May 20-22)

Who: Open to all Corporate sustainability professionals & leaders from the entire value chain

Schedule *(subject to change):*

Thursday (5.15 PM) Kick-off: Keynotes & Fab Tours

Friday (5.16) Fab Scope 1 & Energy Efficiency Workshops

Monday (5.19) RE Education & Advocacy & Manufacturing Scope 3 Materials

Tuesday (5.20) Data & Reporting Workshop & Closing Remarks/Next Steps

**Interest
Form:**



<https://forms.office.com/r/9tMSKL6Dvi>



Google

Applications due by May 1

2025 S³ - Startups for Sustainable Semiconductors

A Mentorship and Pitching Opportunity for
Sustainability Startups



<https://bit.ly/43jHr0W>

bitly

Mark Your Calendars for the 2025 1H Meetings of the:

SEMI Sustainability Forum

The SSF gathers semiconductor industry professionals and top-tier experts on the world's most pressing sustainability challenges every month.

This forum

- **Creates dialogue** between experts and our industry
- **Transforms global sustainability** hurdles into solutions
- **Explores sustainability-related topics** of interest to the semiconductor value-chain
- **Meets the first week of every month**, alternating between two chosen times tailored for our global membership

Upcoming Meetings & Themes (subject to change)

- June 4th | 4:30-6:00 PM PT | Climate & Emissions
- July 11th | 8:00-9:30 AM PT | Regulatory

If you have not received a calendar invitations contact Kenneth Guertin at kguertin@semi.org
OR [Fill in this form](#) and check 'Sustainability'