ROOS INSTRUMENTS, INC.

Corporate Social Responsibility (CSR)

2024 Annual Report

Roos Instruments manufactures cutting-edge Automated Test Equipment for the semiconductor industry and leads the ATE sector with a robust Corporate Social Responsibility (CSR) management system. The company is committed to achieving ambitious environmental goals in line with Science Based Targets initiative (SBTi) standards.

Access to this and previous annual reports at https://roos.com/green

2024 Energy Facts	
GHG Scope 1 & 2:	52.2 tCO_2-e
GHG Scope 3:	Identify and Minimize
Natural Gas:	2,903 Therms
Electricity:	156,613 Kilowatt Hours

THINK BEFORE YOU PRINT

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In 2024, Roos Instruments surpassed its target for reducing annual electrical usage but did not meet the natural gas reduction target. We continue to benefit from the reduced environmental footprint achieved through changes made in previous years. As we explore how to align our benchmarks with science-based targets, we remain committed to identifying risks and opportunities posed by climate change to further reduce our consumption.

We are proud to offer our flagship product, Cassini ATE, as one of the most energy-efficient automated test equipment available, helping our customers set higher standards in responsible semiconductor manufacturing. From 2005 until the municipal program ended in 2022, we purchased 100% green energy, which helped us achieve a higher standard of environmental responsibility and inspired us to take this commitment further. With the conclusion of the Santa Clara Green Power Business Program on December 31, 2022, this marks the second year that our electrical usage is not fully sourced from renewable energy or offset with Renewable Energy Credits (RECs) from that program.

> "We view this initiative as a strategic investment in our future. Meeting our energy needs with clean power and reducing the energy footprint of our operations and products is both rewarding and essential for sustainable growth."
> -- Cathy Rossi-Roos, Roos Instruments COO.

Accomplishments

18 Years of 100% Renewable Electricity ***Since 2005 to 2022***[1]

Over 4.7 GWh of renewable energy has been purchased since 2005 from Silicon Valley Power, Green Power Supporter. The Santa Clara Green Power Business Program ended December 31, 2022.

Awarded Environmental Innovator 2010 ***Awarded 2011***

Silicon Valley Power issues the Environmental Innovation Award to organizations for "all around efforts to support energy efficiency and renewable energy."

At Desk Recycling - quarterly recycling, reduce waste, reuse components ***Since 2009***

Each desk has a dedicated recycling container, facilities staff empty weekly and reports "good to great" compliance and notifies individuals of incorrectly discarding recyclable material in a waste bin. Our vendor, Waste Management, switched from taking only paper and cardboard (separated) to accepting all forms of plastic, glass, aluminum, and paper in one container, increasing individual compliance.

Green Projects - Ideas to improve energy conservation collected from staff ***Since 2012***

Reduce Travel - Telecommuting and Virtual/Web Conferencing ***Since 2006***

Composing – Food and soiled paper waste is collected for composting ***Since 2019***

LED Lighting – Replaced existing fluorescent lighting fixtures with modern lightening standards for brightness, installed motion sensors and replaced all fixtures with LEDs, to eliminate hazardous waste disposal activity and reduce energy use over the fixtures' lifetime. ***Since 2020***

[1]Silicon Valley Power - Green Power Facilities - Green-e Energy Certified®
2022: 33.1% Eligible Renewable, 8.8% Hydroelectric, 23.3% Natural Gas, 34.8% Unspecified Power
https://www.siliconvalleypower.com/sustainability/santa-clara-green-power/green-power-facilities

Goals for 2034

Science-based Target using the Absolute Contraction Approach using 1.5-degree scenario (1.5C).

	Base year (2015)	Most recent Year (2024)	Target year (2034)	% Reduction to date	% FLA adjustment	% SBT reduction
Scope 1 emissions (tCO2e)	13	17	2	----	Not required	84.0%
Scope 2 emissions (tCO2e)	142	22	18	84.5%	3.2%	87.2%
Scope 1+2 emissions (tCO2e)	155	39	20	----	2.9%	86.9%

Reduce annual consumption to 84% of “peak demand" set in 2015 at 142 tCO2e and choose renewable electricity sources, when available.
Focus on reducing total carbon dioxide equivalent (tCO_2-e) including both Scope 1 and 2 sources.
Identify Scope 3 sources and build an action plan on how to minimize and reduce all Scope 3 requirements.

Planned Projects

- Maintain the facility’s energy reduction programs to meet goals.
- Cascading requirements - Vendor requests to voluntarily create their own reduction goals to support Scope 3 reductions.
- Strive for 100% recycling with facility staff identifies recyclable material that is recovered from waste bins prior to dumping.
- Increase energy efficiency of RI systems with software and hardware engineering related to supporting sleep and low power modes.

Green Power Partners

The suppliers and customers identified in the tree illustration above have implemented a similar Corporate Responsibility and Environmental Management System. Thank you for helping Roos Instruments promote good environmental stewardship in the semiconductor industry.

Green Projects

RI Santa Clara, CA
Building Area: ~1820 m^2 (~19,600 $feet^2$) , Constructed 1978
5,000 $feet^2$ updated 2007 with modern HVAC, 2022 with motion activated LED lights
The projects listed below contributed to reducing our GHG emissions.

Total Expected Annual Impact for All Projects in 2024: **40 Therms**

Name of Project *Potential Impact*[2]

HVAC Efficiency Tuning and Maintenance (Ongoing): **40 Therms**

Assure optimum AC performance managed by Environmental Systems.

Other CSR Goals:

- Reclaim Used Equipment: Any RI equipment can be returned to Santa Clara factory for recycling. Incentives like free shipping may be available. Published online roos.com/contact, and on printed material like docs & service/training manuals.
- Maintain high recycling compliance with "unified" recycling bins located throughout the building that is used for plastic, aluminum and paper instead of separate bins.
- Supply "Green certified" office cleaner and post-consumer recycled paper products in restrooms and kitchens and environmentally friendly cleaning chemicals.
- Divert waste with composting collection bins.
- Support composting organic waste.
- Be mindful of water consumption and eliminate all unnecessary waste.

Vendor Letter and qualification:

- Promote vendors who have their own environmental responsibility programs on our roos.com/green page. Prefer "green" vendors by clearly marking them in our vendor contact databases to enable increased purchasing of equipment and services from preferred sources.

[2]Potential Impacts were computed with the following calculators:
EPA's www.epa.gov/cleanenergy/energy-resources/calculator.html
CO2 Footprint Calculator: www.carbonify.com/carbon-calculator.htm

Future Green Projects

Name of Project — *Potential Impact*

Clean Living — **Waste Reclaim**

Replacing all non-biodegradable products used in the break rooms like foam cups and plates to biodegradable ones.

Sweater & Shorts Days: — **400 Therms**

Wear warm clothing and leave temp down to 68 one day a week in Winter.
Wear cool clothing and leave temp up to 76 one day a week in Summer.

Land Care: — **Hazardous Material Reduction**

Mulching and using non-toxic chemicals for lawn maintenance.

Employee Activities

Recycle Program: 100% of recyclable material is collected in dedicated bins.

Composing: Divert waste that is not recyclable but will compost to dedicated bins.

Green Waste: Recycle all electronics that are not in use, open with donations from home and the community.

Annual Employee Training and Audits: Carpool, how to reduce paper, proper tire inflation, etc…

Support mobile workforce: — **1,000 kWh**

Provide smart phones, laptops and other resources for mobile and remote offices.

Web conference — **Saving Estimated 2.91 Tons of CO_2**

Instead of face-to-face meetings, use remote presence (video chat) for sales/support.

Cascading CSR Notice — **Reduce Scope 3 GHG**

Top 10 vendor CSR Questionnaire - Cascading requirement letter and questionnaire.

Compliance Enforcement

All local and national environmental laws, regulations and contractual requirements are followed by ensuring that appropriate signs and labels are posted. Employees are notified of changes to requirements via email and are required to attend annual safety training programs appropriate to their tasks. All vendors are certified and approved legal operations, only verified if suspected of violations.

Projects are reviewed by assigned personnel and milestones used to show progress.
OSHA - Computer Workstations & Material Safety Data Sheets (MSDS)

Employees are asked to complete the Green Audit & Survey
RI Headquarters in Santa Clara is included in this program.

Safety Program
All Employees should complete formal training including workstation ergonomics, lifting, emergency plans, and distracted driving. Employees working on the production of RI systems complete electronics safety, soldering iron, lighting, ventilation, and lead exposure training courses. Employees who regularly ship equipment must learn about back safety, maintaining a safe working environment (i.e. no cluttered floors) and proper lighting.

Employee Training Resources

The Roos Instruments' new employee training presentation includes an introduction: "What is our CSR?", an Employee Survey/Audit, and mandatory minimum training. There will be a prize incentive to come up with a project that saves the most kWh or CO_2. Carpooling is highly encouraged. The thermostat is not 72°F all year round; 74°F in warm months and 68°F in cold months, using personal heaters and fans to adjust for individual comfort. Employees sent newsletter including links to "More Energy Saving Tips" online. Posters from "Recyclestuff.org" remind employees where to recycle various items. Local Government Programs are used to educate and engage. Email newsletter includes topics like "How to Reduce paper at work" and "Dangers of distracted driving" OSHA's distracted driving brochure explains to employers and supervisors the importance of preventing texting by their workers while driving. Texting while driving dramatically increases the risk of motor vehicle crashes, the leading cause of worker fatalities.

Disclosing Results

The Green Annual Report, this document, is published online at roos.com/green and includes Roos Instruments' annual usage, goals, projects, analysis, and refinements needed to the Corporate Social Responsibility program.

Fully Loaded Cassini 16

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800 Watts

Greenhouse Gas (GHG) Emissions

Greenhouse Gas Emissions and Carbon Dioxide Equivalent (CO_2 -e) are calculated using the GHG Corporate Protocol standard[3]. Scope 3 GHG Emissions are being identified for future reduction goals. Includes carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF6), and nitrogen trifluoride (NF3).

Total Scope 1 & 2	**52.2 tCO_2-e**

Scope1: Generated by Roos Instruments

Includes RI vehicles, refrigerators, HVAC systems, facilities, and landscaping.

Stationary: Natural Gas (CO2 CH4 Heating with Natural Gas): 2,309 Therms[4]	12.0 tCO_2-e
Mobile: 2000 Tundra 4WD, 6 cyl, 3.4 L (CO2 CH4 Petroleum - Transportation)[5]	1.5 tCO_2-e
Fugitive: 3 Office Refrigerators (HFCs Leaking Refrigerant)[6]	0.5 tCO_2-e
Fugitive: 12 Air Conditioning Units (HFCs Leaking Refrigerant)[7]	0.4 tCO_2-e
Process: Facilities (CO2 Gas Lawn Care, Blower, etc.)[8]	0.2 tCO_2-e
Scope 1 Total:	**14.2 tCO_2-e**

Scope2: Generated by Silicon Valley Power (electricity producer)

Electricity: 160.96 MWh[9]

41.9% Eligible Renewable including 8.8% Hydroelectric (67.44 MWh)

23.3% Natural Gas (CH4 37.50 MWh)[10]

34.8% Unspecified Power (56.01 MWh)[11]

Scope 2 Total:	**38.0 tCO_2-e**

[3] Scope1 GHG emissions calculation. http://www.ghgprotocol.org/calculation-tools/faq

[4] 5.3 kg or 0.0053 metric tons CO2/therm - https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references

[5] Annual mileage is estimated 5,000 miles/year @ 15 mpg = 0.0667 gallons per mile = 334 gallons of gasoline per year

[6] KitchenAid Model: KSF5200EWHO, 5.125 oz of R134b, 0.145291306 kg; Kenmore Model: 106.9618412, 1992, 6.25 oz R12 0.17718452 kg Electrolux Home Products: 4.25oz, R134a = 0.1566305 kg Total from Refrigerant = 0.479 kg x 26.824 (conv. rate) = 56 kg CO2-e Global Warming Potential Table HFC 134a, 1300 R404a, 3260 R407b, 2285 R407c, 1526 R410A, 1725 source: http://www.ghgprotocol.org/calculation-tools/all-tools

[7] GHG emissions from refrigerants (kg CO2-e) = Recharge capacity (kg) X Annual leakage rate x Global Warming Potential - 37.72 kg CO2-e = **0.322 kg** x 0.09 x 1300; Air conditioners/chillers Annual leakage rate = 0.09 (9%) - www.fueleconomy.gov

[8] According to the EPA, and one gas-powered lawn mower emits as many pollutants as 8 new vehicles driving 55mph for the same period of time. 30 min per week, for 12 months, equals 16 hours, approx. 16 gallons of gas. http://www.epa.gov/cleanenergy/energy-resources/calculator.html

[9] Greenhouse Gas Equivalencies Calculator | US EPA

[10] Convert Natural Gas to CO2-e is (value * 7.42 ft3/kWh)

[11] Compute WECC California estimated emissions rate https://www.epa.gov/egrid/power-profiler#/CAMX Avg monthly kWh and then results are in lbs. that must be converted to kg)

Energy Usage Details

Total GHG tCO_2-e By Year

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	**2024**
Scope 1	13	15	16	14	14	19	19	19	17	**14**
Scope 2[12]	0	0	0	0	0	0	0	0	23	**38**
Total	13	15	16	14	22	19	19	19	40	**52**

Electricity generated by Silicon Valley Power

MWh by Year[13]

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	**2024**
195.52	208.07	213.74	210.37	218.52	215.48	170.02	216.24	175.75	170.02	**160.96**

2024 MWh by Month

Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
12.15	12.04	11.80	12.21	13.74	14.48	15.89	15.53	14.99	13.72	12.85	11.54

Methodology used eGRID subregion **CAMX** (**WECC California**) emission rates and **4.1%** line loss, the estimated annual use of **160.968 MWh** of electricity results in **73,300** pounds **CO_2**, **3.4** pounds **SO_2**, and **56.7** pounds **NO_x** emitted in one year from the power plants in your area. Conservation efforts are monitored with vendor supplied meters.

Natural Gas provided by PG&E

Conservation efforts are monitored with vendor supplied meters.

Therms by Year[14]

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	**2024**
1,698	1,588	1,720	1,395	1,581	3,410	2,006	2,583	2,689	2,914	**2,309**

2024 Therms by Month

Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
507	507	491	301	147	34	3	0	1	1	44	273

[12]Renewable Energy Credits purchased from 2005-2022.

[13]Renewable Energy Credits purchased from 2005-2022. Totals revised after 2022 audit corrected for consumption over-count.

[14]Totals revised after audited data correction. (Target based on usage in 2008 of 2179 Therms)