ROOS INSTRUMENTS, INC.

Corporate Social Responsibility (CSR)

2023 Annual Report

Roos Instruments produces Automated Test Equipment for the world's most innovative semiconductor technology. RI continues to lead the ATE industry with a Corporate Social Responsibility (CSR) management system focused on reaching aggressive goals that reduce our impact on the environment.

Visit roos.com/green for access to this and previous annual reports.

2023 Energy Facts	
Natural Gas:	2,903 Therms
Electricity:	156,613 Kilowatt Hours
GHG (Scope 1&2):	40.050 tCO_2-e

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In 2023, Roos Instruments exceeded the target for reduced annual electrical usage but fell short of reaching the natural gas target. We continue to enjoy the reduced environmental footprint from changes made in previous years as we explore how to adjust our benchmark to align with industry targets.

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. Purchasing 100% green energy since 2005 has helped us reach a higher standard of environmental responsibility and encouraged us to take this concept one step further. Santa Clara Green Power Business Program ended December 31, 2022, so this is the first year that electrical usage is not 100% sourced by renewable or offset with Renewable Energy Credits (RECs).

"We see this initiative as a wise investment in our future. Meeting energy needs with clean power and reducing the energy footprint of any investment, be it our company or the products we make, is very rewarding." -- Cathy Rossi-Roos, Roos Instruments COO.

Accomplishments

18 Years of 100% Renewable Electricity **42% Renewable**[1]

Over 4.7 MWh of renewable energy has been purchased since 2005 from Silicon Valley Power, Green Power Supporter. 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 empties 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 2023

Maintain Electricity at 80% of 2008 Levels[2]
185,868 kWh Target
156,613 kWh Actual (Target Exceeded by 16%)

Maintain Natural Gas at 2008 Levels[3]
2,179 Therms Target
2,903 Therms Actual (Target Missed by 33%)

Reduce annual electricity usage below 80% of "peak demand" set in 2008 at 233,295 kWh. Focus on reducing total carbon dioxide footprint (tCO_2-e).

Planned Projects

- Maintain Energy reduction programs to meet future goals
- Cascading requirements - Vendor requests to voluntarily create their own reduction goals.
- Strive for 100% recycling with facility reviews where all recyclable material 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.
- Investigate GHG reduction goals aligned with Science-Based Targets initiative (SBTi) for Net-Zero by 2045.

[2] 80% of Peak Demand, 2008 Annual Usage = 232,335 kWh

[3] 100% or less of 2008 levels or 2,179 Therms/yr

Green Power Partners

These suppliers and customers 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 m² (~19,600 feet²) , Constructed 1978
5,000 feet² updated 2007 with modern HVAC, 2022 with motion activated LED lights
The projects listed below contributed to achieving the 2023 targets.

Total Expected Annual Impact for All Projects in 2023: **40 Therms**

Name of Project — *Potential Impact*[4]

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

Assure optimum 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. Publicized 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 of organic waste.

Vendor Letter and qualification:

- Promote vendors who have their own Green 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.

[4] 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.

Purchase RECs to offset 100% GHG Emissions: — **100% GHG Offsets**

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.
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.

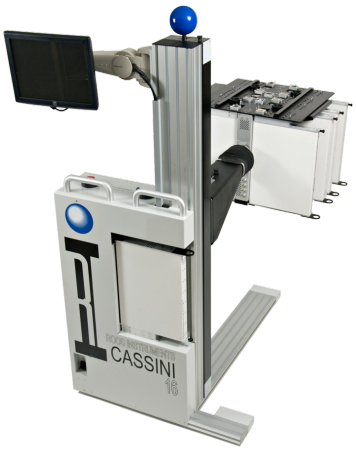
Employee Training Resources

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[5]. Zero percent (0%) of Scope 1 and one hundred percent (100%) of Scope 2 GHG Emissions are offset by Renewable Energy Credits. Scope 3 GHG Emissions are not yet being calculated.

Total Scope 1 & 2 **40,050 kg CO_2-e**

Scope1: Generated by Roos Instruments

Includes RI vehicles, appliances (refrigerators), HVAC systems, facilities, and landscaping.

2000 Tundra 4WD, 6 cyl, 3.4 L (Petroleum - Transportation)[6]	1,501 kg CO_2-e
3 Office Refrigerators (Leaking Refrigerant)[7]	56 kg CO_2-e
12 Air Conditioning Units (Leaking Refrigerant)[8]	38 kg CO_2-e
Facilities (Gas Lawn Care, Blower, etc.)[9]	142 kg CO_2-e
Natural Gas (Heating with Natural Gas): 2,903 Therms[10]	15,360 kg CO_2-e
Scope 1 Total:	**17,097 kg CO_2-e**

Scope2: Generated by Silicon Valley Power (electricity producer)

Electricity: 156,613 kwH

33.1% Eligible Renewable + 8.8% Hydroelectric	0 kg CO_2-e
23.3% Natural Gas (36,490 kWh)[11]	9,203 kg CO_2-e
34.8% Unspecified Power (54,501 kWh)[12]	13,750 kg CO_2-e
Scope 2 Total:	**22,953 kg CO_2-e**

Total GHG tCO_2-e By Year (excluding Scope 2, 100% offset by RECs)

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	**2023**
15.461	15.238	14.220	14.018	13.482	15.009	15.514	13.774	21.623	15.668	18.725	19.287	**40.050**

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

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

[7] KitchenAid Model: KSF5200EWHO, 5.125 oz of R134b, 0.145291306 kg
Kenmore Model: 106.9618412, 1992, 6.25 oz R12 0.17718452 kgl
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

[8] 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

[9] 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

[10] 5.3 kg or 0.0053 metric tons CO2/therm - https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references

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

[12] 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

Electricity generated by Silicon Valley Power

Conservation efforts are monitored with vendor supplied meters.

kWH By Year[13]

2009	2010	2011	2012	2013	2014	2015	2016
218,917	208,384	208,240	205,462	200,039	195,526	208,068	213,741

2017	2018	2019	2020	2021	2022	**2023**	
212,113	213,225	216,584	170,032	213,685	168,172	**156,613**	

2023 kWH By Month

Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
13077	13133	12118	11466	12910	13047	14903	17644	18066	16369	14974	11244

Natural Gas provided by PG&E

Conservation efforts are monitored with vendor supplied meters.

Therms By Year[14]

2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	**2023**
1,881	1,982	2,317	1,946	2,584	1,698	1,588	1,720	1,395	1,581	3,410	2,006	2,583	2,689	**2,903**

2023 Therms By Month

Jan	Feb	Mar	April	May	June	July	Aug	Sept	Oct	Nov	Dec
760	706	667	223	138	67	19	4	3	27	53	237

[13] Started purchasing Renewable Energy Credits in 2005. Totals revised after 2022 audit corrected for consumption over-count.

[14] Totals revised after audited data correction.